NITI Aayog | **DMEO** DEVELOPMENT MONITORING AND EVALUATION OFFICE

Evaluation of Centrally Sponsored Schemes in Health Sector

Volume II: ♥ HEALTH

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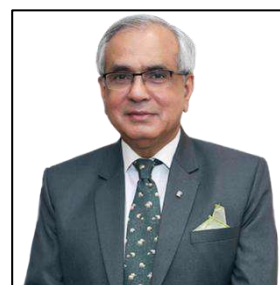DEVELOPMENT MONITORING AND EVALUATION OFFICE

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Volume II: ♥ HEALTH

Dr. Rajiv Kumar
Vice Chairman
National Institution for Transforming India
Government of India
New Delhi, India

MESSAGE

Over the past few decades, India has made impressive strides in improving the health outcomes of all the sections of the society which is evident from the improvement in India's performance on key health indicators, elimination of diseases like Polio, Guinea worm disease, Yaws, Maternal and Neonatal Tetanus, and decline in maternal and infant mortality rates. Improvements in health and transport infrastructure have also contributed to better access to healthcare facilities. Today, there exists a strong network of 1-million Accredited Social Health Activists (ASHA) workers who are playing a critical role in the last mile delivery of health services to the local community.

Though, evidence exists on improvement in health outcomes, affordability remains a key concern in the country. The share of Out of Pocket Expenditure (OOPE) as percentage of health expenditure remains among the highest in the world. However, various Government initiatives such as providing free drugs, diagnostics and transport services are leading to decline in OOPE. The initiative of the Government in the form of National Health Mission is also a step in the right direction to reduce OOPE.

New wave of technologies such as Artificial Intelligence, Robotics and Telemedicine provide an opportunity to the country to emerge as a frontrunner in delivery of the healthcare services. Advanced digital technologies can help deliver high quality healthcare even to rural and remote population and overcome the traditional problem of uneven doctor-patient ratio.

This evaluation report is a historic achievement in capturing the performance of 25 schemes of the Ministry of Health & Family Welfare and Ministry of AYUSH under five umbrellas and their contribution to the health sector. With clear reflection on the strengths and weaknesses of the programmes, along with suggestions for improvement, the country would need to marshal both financial & human resources and align incentives for different stakeholders to achieve the Sustainable Development Goal on Good health and Well-being.
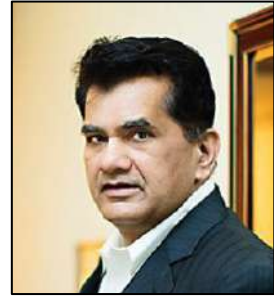
OCTOBER, 2020
NEW DELHI
INDIA

Dr. Rajiv Kumar

Amitabh Kant
Chief Executive Officer
National Institution for Transforming India
Government of India
New Delhi, India

MESSAGE

NITI Aayog's mandate is to facilitate transformation in India, and through the Development Monitoring and Evaluation Office (DMEO), we are working towards institutionalizing evidence-based-policy-making, to strengthen systems of good governance in the country. While evaluations have been carried out in India since beginning, this study has been historic in both its scope and methods. For the first time, the National Development Agenda has been divided into ten sectors, with all Centrally Sponsored Schemes (CSS) in a sector falling under a single evaluation study. Simultaneously conducting multiple large scale studies across sectors has allowed for rich cross learning, standardization and adoption of leading evaluation methodologies and quality processes. This is an evidence generation and implementation research at the cutting edge.

However, evidence generation is not enough - uptake should also be ensured. The findings from this study would now be used to drive reform and future policy initiatives across the Ministries and Departments within its remit. The study provides data backed recommendations to improve Government service delivery, at the scheme and Sector level. The Ministry of Health & Family Welfare, Ministry of AYUSH and other agencies collect huge data on health related parameters through various mode such as Sample Registration System (SRS), District Level Household Survey (DLHS), National Family Health Survey (NFHS) and Health Management Information System (HMIS) etc. Many of output and outcome indicators coming out of these datasets, exist in silos with disparities in quality and accuracy of data. There is a strong need to synthesize several such datasets and also to increase the frequency so that output and outcomes health performance indicators can be tracked on a more real-time basis.

In the larger context of the XVth Finance Commission and devolution of funds from the Centre to States, these evaluation studies would also play an important role in advancing NITI Aayog's goal of cooperative federalism. This study also examines heterogeneous implementation of CSS and identifies sub-national best practices amenable to scaling up at national level, facilitating learning among States and across ministries linked to health in the Central government. The Ministry of Health & Family Welfare and the Ministry of AYUSH have been closely involved throughout the study via a thorough consultative process to optimize the robustness of the study and its recommendations.

Finally, for evidence-based policy decision-making in the country, there is need to itself shift from measuring physical and financial progress, to measuring outcomes and impacts. The study is a step in that direction, and there remains a long, promising path ahead.

OCTOBER, 2020
NEW DELHI
INDIA

Amitabh Kant
Chief Executive Officer,
NITI Aayog

Preface

The Government of India (GoI) spends close to Rs. 10 lakh crore annually on development activities, through nearly 750 schemes implemented by Union Ministries. Of these 750, total 128 are Centrally Sponsored Schemes (CSS), implying that they are funded jointly by the Centre and the States, and implemented by the States. Over the years, federalism and the expectations of government service delivery in India have evolved, and this vast proliferation of schemes is in sore need of rationalization. Rationalisation of schemes is expected to improve Centre-State relations, the effectiveness and efficiency of public finance, and the quality of service delivery to citizens.

To this end, all schemes were mandated to undergo third party evaluations, to provide an evidentiary foundation to the 15th Finance Commission for scheme continuation from 2021-22 to 2025-26. The task of conducting these CSS evaluations was granted to NITI Aayog, specifically to Development Monitoring and Evaluation Office (DMEO). This volume is thus a part of a historic exercise undertaken between April 2019 and August 2020, to evaluate 128 CSS, under 28 Umbrella CSS, under 10 Packages or Sectors. The studies together cover close to 30% of the GoI's development expenditure, amounting to approximately Rs. 3 lakh crore (USD 43 billion) per annum.

In order to fulfill this mandate to the highest standard possible, to optimize both the robustness and the uptake of the evidence generated, DMEO adopted a nationally representative mixed methods evaluation methodology and a consultative review process for the reports. Altogether, the project incorporates the direct input of approximately 33,000 individuals, through 17,500 household interviews, 7,100 key informant interviews and 1,400 focus group discussions. The views of Central, State, district, block, ward and village administrations, as well as non-governmental experts and civil society organizations have been elicited. Through qualitative and quantitative analysis of secondary literature, validated by this primary data collection, analysis was done at three levels: the sector, the umbrella CSS and the scheme itself. The key parameters for analysis, including relevance, effectiveness, efficiency, sustainability, impact and equity (REESI+E), have been selected based on international best practices in evaluation. In addition, across 10 packages, certain cross cutting themes have been identified for analysis, including transparency, sustainability, gender, technology, private sector etc. The reports thus produced then underwent a consultative review process involving NITI Aayog subject matter divisions, concerned Ministries and Departments, and external experts. The entire project was implemented through 10 consultant firm teams selected from the private sector through an open tender process, managed by my small but fiercely dedicated team at DMEO.

Over the course of this project, hundreds of people across the country have pushed themselves through festivals, monsoon rains, cyclones and a global pandemic, COVID-19, to present these volumes. DMEO owes a debt of gratitude to each and every one of these contributors, but especially to all the beneficiaries interviewed, for sharing their precious time and experiences with our teams. Ultimately, this exercise, as all others by the Government of India, is in service of the sovereign citizens of this country.

have also been instrumental in seeing this project to fruition. The Internal Finance Division further merits special mention here for their extensive efforts.

DMEO team has been at the core of the evaluation studies - in this package specifically, Mr. Narinder Singh Rawat, Consultant and Mr. Deepak Kumar, Economic Investigator worked on every last detail of this herculean endeavor, under the guidance of Mr. Venugopal Mothkoor, Monitoring and Evaluation Specialist and Mr. S.P Srivastava, Director. Across packages, Deputy Director General Mr. Ashutosh Jain also oversaw coordination, standardization and monitoring of the study design, analysis and implementation processes across packages. They were supported by the Evaluations Core Team: Dr. Shweta Sharma, Mr. Anand Trivedi, Ms. Sanjana Manaktala, Ms. Shruti Khanna, Ms. Vatsala Aggarwal, Mr. O.P. Thakur and Mr. Janyanta Patel. The Primary Data Quality Review team comprising Mr. Venugopal Mothkoor, Mr. Paresh Dhokad, Mr. Krishn Kant Sharma and Mr. Asad Fatmi contributed across packages in data quality and analysis. The DMEO administration and accounts officers, including Mr. D. Bandopadhyay, Mr. Munish Singhal, Mr. D.S. Sajwan, Mr. Manoj Kumar and others provided vital support on documentation, approvals, payments etc.

In accordance with the massive scope and scale of the exercise, this report owes its successful completion to the dedicated efforts of a wide variety of stakeholders. The country is deeply grateful.

Contents

List of Tables

List of Figures

List of Case Studies

List of Abbreviations

AB	Ayushman Bharat
ADB	Asian Development Bank
AES	Acute Encephalitic Syndrome
AHD	Adolescent Health Day
AIIMS	All India Institute of Medical Sciences
ANC	Ante Natal Care
ANCDR	Annual New Case Detection Rate
ANM	Auxiliary Nursing Midwifery
ARI	Acute Respiratory Illness
ASHA	Accredited Social Health Activist
AWW	Anganwadi Worker
AYUSH	Ayurveda, Yoga and Naturopathy, Unani, Siddha And Homoeopathy
BCC	Behavioural Change Communication
BCG	Bacillus of Calmette And Guerin
BIS	Beneficiary Information System
BMGF	Bill & Melinda Gates Foundation
C & DST	Culture and Department of Science and Technology
CAGR	Compound Annual Growth Rate
CAPD	Continuous Ambulatory Peritoneal Dialysis
CBBF	Corneal Blindness Backlog Free
CBNAAT	Cartridge-Based Nucleic Acid Amplification Test
CBSS	Community Based Surveillance System
CCM	Chhattisgarh Chikitsa Mandal
CGHS	Central Government Health Scheme
CH	Child Health
CHC	Community Health Centre
CHO	Community Health Officer
COPD	Chronic Obstructive Pulmonary Disease
CORS	Collabdds Online Radiology Services
CRM	Common Review Mission
CSS	Centrally Sponsored Scheme
CSSD	Central Sterile and Supply Department
DAC	Deaddiction Centres
DAY-NRLM	Deendayal Upadhyaya Antyodaya Yojana-National Rural Livelihoods Mission
DDAP	Drug De-Addiction Program
DDO	Drawing and Disbursing Officer
DDW	District Drug Warehouse
DEIC	District Early Intervention Centres
DeitY	Department of Electronics and Information Technology
DGHS	Directorate General of Health Services
DH	District Hospitals
DMC	Designated Microscopy Centres
DMEO	Development Monitoring and Evaluation Office
DMHP	District Mental Health Program
DOTS	Directly Observed Therapy Short Course
DPM	District Program Manager
DPMU	District Project Management Unit
DPT/DT	Diphtheria Pertussis Tetanus
DREAM	Digitization, Re-Energization, Education & Empowerment, Advocacy and Multitasking
DVDMS	Drugs and Vaccines Distribution System
ECG	Electrocardiography
ECHO	Echocardiography
ED	Executive Director
EEG	Electroencephalogram
EML	Essential Medicine List
EMS	Emergency Medical Care

ENT	Ear Nose Throat
FGD	Focus Group Discussion
FHSR	Fast Healthcare Interoperability Resources
GATS	Global Adult Tobacco Survey
GBD	Global Burden of Disease
GBV	Gender Based Violence
GI Council	General Insurance Council
GNM	General Nursing and Midwifery
GSHIS	Government Sponsored Health Insurance Scheme
HMIS	Health Management Information Systems
HR	Human resources
HRH	Human Resources for Health
HRH & ME	Human Resources for Health & Medical Education
HSS	Health System Strengthening
HWC	Health and Wellness Centre
ICDS	Integrated Child Development Services
ICMR	Indian Council of Medical Research
ICT	Information Communication Technology
IDD	Iodine Deficiency Disorders
IDSP	Integrated Disease Surveillance Program
IEC	Information Education Communication
IFA	Iron Folic Acid
IIB	Insurance Information Bureau
IIM	Indian Institute of Management
IMI	Intensified Mission Indradhanush
IMR	Infant Mortality Rate
IPC	Interpersonal Communication
IPHS	Indian Public Health Standards
IPV	Intimate Partner Violence
IRDAI	Indian Regulatory and Development Authority Of India
IRL	Intermediate Reference Laboratories
IRS	Indoor Residual Spraying
ISRO	Indian Space Research Organization
IUCD	Intra Uterine Contraceptive Device
JES	Japanese Encephalitic Syndrome
JSSK	Janani Shishu Surakshana Karyakaram
KII	Key Informant Interviews
LHV	Lady Health Visitor
MCTS	Mother and Child Tracking System
MDA	Mass Drug Administration
MDT	Multi Drug Therapy
MHP	Mid-Level Health Provider
MI	Mission Indradhanush
MIS	Management Information System
MMR	Maternal Mortality Rate
MO	Medical Officer
MoHFW	Ministry of Health and Family Welfare
MoRD	Ministry of Rural Development
MPV	Mission Parivar Vikas
MPW	Multipurpose Worker
MTP	Medical Termination of Pregnancy
NAM	National AYUSH Mission
NBCC	New Born Care Corner
NBCP	National Blindness Control Program
NBSU	New Born Stabilisation Units
NCA	National Centres Of Ageing
NCD	Non-Communicable Diseases
NHA	National Health Authority
NHM	National Health Mission

NHP 2017	National Health Policy 2017
NHP 2019	National Health Profile
NHSRC	National Health Systems Resource Centre
NIC	National Informatics Centre
NIDDCP	National Iodine Deficiency Disorders Control Program
NISC	National Trauma Injury Surveillance and Capacity Building Centre
NLEP	National Leprosy Eradication Program
NMCN	National Medical College Network
NMEP	National Malaria Eradication Program
NMHP	National Mental Health Program
NMR	Neo-natal Mortality Rate
NPCB	National Program for Control of Blindness
NPCBVI	National Program For Control of Blindness & Visual Impairment
NPCDCS	National Program for Prevention and Control of Cancer, Diabetes, CVD and Stroke
NPHCE	National Program for Health Care of Elderly
NPPCD	National Program for The Prevention and Control Of Deafness
NQAS	National Quality Assurance Standards
NRC	Nutritional Rehabilitation Centres
NRHM	National Rural Health Mission
NRL	National Level Reference Laboratories
NTCP	National Tobacco Control Program
NTEP	National Tuberculosis Elimination Program
NTN	National Telemedicine Network
NUHM	National Urban Health Mission
OPD	Outpatient Department
OPV	Oral Polio Vaccine
ORS	Oral Rehydration Solution
ORT	Oral Rehydration Therapy
OT	Operation Theatre
PAN	Presence Across Nation
PAP	Papanicolaou Test
PFT	Pulmonary Function Test
PGI	Post Graduate Institute
PHC	Primary Health Centre
PIP	Performance Improvement Plan
PMDT	Programmatic Management of Drug Resistant TB Services
PMJAY	Pradhan Mantri Jan Arogya Yojana
PMSSY	Pradhan Mantri Swasthya Suraksha Yojana
PMU	Project Management Unit
PPH	Post-Partum Haemorrhage
PPP	Public Private Partnership
PR	Prevalence Rate
PRI	Panchayati Raj Institution
RANM	Registered ANM
RBSK	Rashtriya Bal Swasthya Karyakram
RCH	Reproductive & Child Health
RDW	Regional Drug Warehouse
RIO	Regional Institute of Ophthalmology
RKS	Rogi Kalyan Samiti
RKSK	Rashtriya Kishor Swasthya Karyakram
RLHV	Registered Lady Health Visitor
RM	Registered Mid-wives
RN	Registered Nurses
RNTCP	Revised National Tuberculosis Control Program
RO	Reverse Osmosis
RoP	Record of Proceedings
RTI	Respiratory Tract Infection
SAAP	State Annual Action Plans
SAM	Severe Acute Malnutrition

SAS	State Ayush Society
SC	Sub Centre
SCI	State Cancer Institutes
SCM	Supply Chain Management
SDCA	State Drug Controllers For AYUSH
SDH	Sub District/Divisional Hospitals
SHA	State Health Agency
SHS	State Health Society
SMPB	State Medicinal Plants Board
SNCU	Special New Born Care Units
SOE	Standard Operating Environment
SOP	Standard Operating Procedure
SPM	State Program Manager
SPMU	State Project Management Unit
STG	Standard Treatment Guidelines
STI	Sexually Transmitted Infection
SUD	Substance Use Disorders
TAS	Transmission Assessment Survey
TB	Tuberculosis
TCC	Tobacco Cessation Centres
TCCC	Tertiary Care Cancer Centres
TCF	Trauma Care Facilities
TEC	Technical Evaluation Committee
TFR	Total Fertility Rate
TMHP	Taluk Mental Health Program
TRG	Technical Resource Group
TT	Tetanus Toxoid
U5MR	Under-Five Mortality Rate
UIP	Universal Immunisation Program
UNICEF	United Nations International Children's Emergency Fund
URI/ URTI	Upper Respiratory Tract Infection
USAID	United States Agency for International Development
WASH	Water Access, Sanitation, And Hygiene
WHO	World Health Organisation
WIFS	Weekly Iron and Folic Acid Supplementation

Executive Summary

Chapter 1: Executive Summary

Introduction

The Government of India (GoI) has assigned National Institution for Transforming India (NITI) Aayog the responsibility of conducting third party evaluation of Centrally Sponsored Schemes (CSS) for ten (10) sectors spanning twenty-eight (28) umbrella schemes. The findings of the evaluation will be an input for the 15th Finance Commission (2020-21). NITI Aayog through its Development Monitoring and Evaluation Office (DMEO) has selected EY for the evaluation of CSS in the health sector.

For the evaluation, mixed method has been applied with qualitative and quantitative approaches, using primary and secondary data. Further, the seminal framework proposed by Fischer (1995) has been adapted for the evaluation. Considering the scope of work and time available, the evaluation has been largely focussed on the Technical-Analytical discourse proposed by Fischer (1995). The contextual discourse has also been considered to help rationalize the schemes.

The Technical-Analytical discourse has been undertaken by adopting the WHO Operational Framework for monitoring and evaluation of Health systems (World Health Organization, 2009) in the context of the scope of evaluation defined under the study. Relevance, Effectiveness, Efficiency, Sustainability, Impact, and Equity for schemes have also been discussed using the REESI+E framework. An evaluation of the cross-sectional themes has also been carried out for the Schemes. Based on the evaluation, recommendations on the rationalisation of the schemes have also been provided. Further, the top-down analysis using secondary literature and KII analysis; and bottom-up analyses using household surveys, FGDs, and facility surveys were undertaken.

- Household surveys
- FGDs
- Facility surveys

Top-Down & Bottom-up Analyses

- Literature review
- Key informant interviews
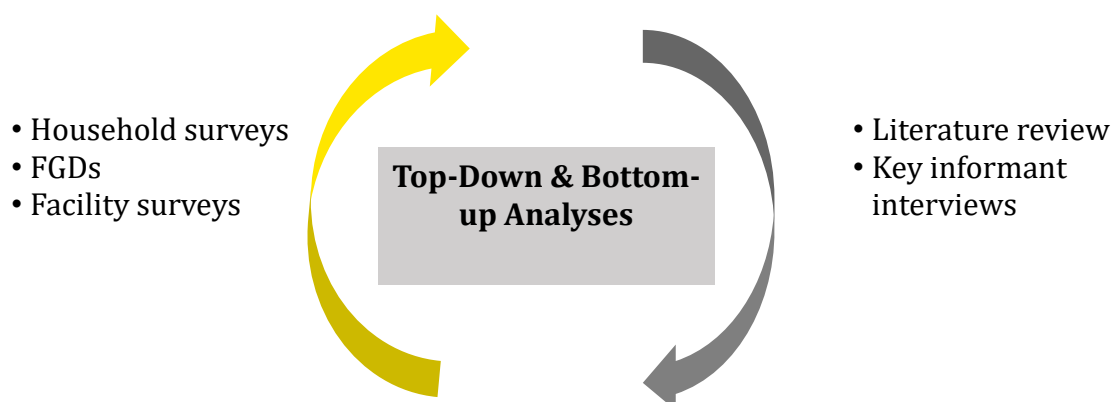
The study commenced with Systematic Literature Review as per the methodology proposed by Kitchenham and Charters (2007). The reference period of the literature review was kept as 2015-2019 (evaluation period of study). Relevant papers from cross-references before the reference period were also included. The three recent studies[1] on NHM commissioned by NITI Aayog have also been referred to. Thereafter, field study was carried out to triangulate and augment the secondary research findings with the primary data. The surveys were carried out across 13 states from December 1, 2019 to February 15, 2020 (please refer to Volume I for details).

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1 IIPH & IIMA (2020). Working Report: Impact of the National Health Mission on Governance, Health System, and Human Resources for Health.
NIPFP (2020). Working Report: Role of National Health Mission in Health Spending in States: Achievements and Issues.
PGIMER (2020). Working Report: Impact of National Health Mission on Health Outcomes

Delhi: 41

57

141

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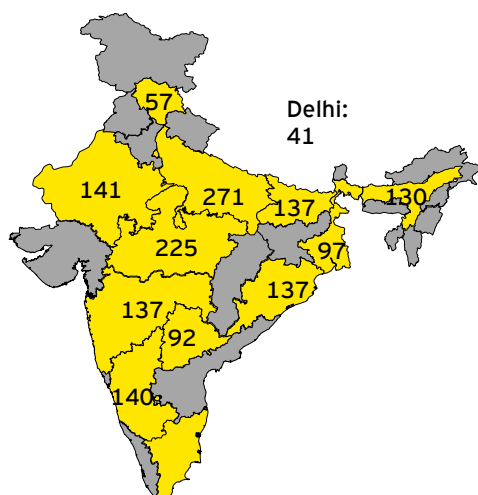
Numbers represent HH surveys conducted in 12 states

Primary Data Collection	Numbers
States	13
Districts	37
Villages	109
Household Surveys	1,610
Facility Surveys	173
Key Informant Interviews (KIIs)	980
Focus Group Discussions (FGDs)	150

The evaluation study is presented in two volumes viz. a) Volume I: covering the scope, approach and methodology adopted for the study; b) Volume II: covering the evaluation for sector and CSS including findings from primary and secondary research and recommendations. This report is Volume II.

Sector Overview

The health sector has been analysed on various parameters such as: health indicators, affordability, coverage and accessibility, equity and social inclusion, quality and hygiene, healthcare financing, public vs private healthcare scenario etc.

Health Indicators

➢ India has performed better than the global average on most of the health indicators (defined based on NHP 2017 and SDG). Performance during the study period (2014-19) has been better as compared to the previous decade. Further, India is comfortably placed to meet the targets (the prevailing rate of reduction is better than the desired rate of reduction) for most of the indicators set under National Health Policy-2017 (except for IMR).

Indicator	NHP Target (2025)	Status	Global CAGR	India CAGR	Desired CAGR[2]
			2014-17		
IMR	28 (2019)	32 (2018)	-2.9%	-5.4%	NA[3]
MMR	100 (2020)	113 (2016-18)	-2.0%	-6.7%	-4%
TFR	2.1	2.2 (2018)	-0.4%	-1.5%	-0.6%
U5MR	23	36 (2018)	-3.1%	-6.3%	-5.8%
NMR	16	23 (2018)	-2.4%	-4.4%	-4.4%

Source: World Bank Data, SRS Report 2018, EY Analysis

➢ There are certain concerns as well. Against the SDG target for 100%, India reported 68% of children aged 12-23 months as fully immunized (BCG, Measles and three doses of Pentavalent vaccine) (NITI Aayog, 2018). Disability-Adjusted Life Years (DALYs) from all causes remains

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[2] To achieve the NHP target (from the 2017 data)
[3] Not applicable as the target was for 2019

Chapter 1: Executive Summary

high for India as compared to international benchmarks[4].

Affordability

- OOPE as a % of healthcare expenditure has reduced monotonically since 2004-05 (National Health Accounts 2016-17, 2019). To reduce the OOPE burden, during the study period, various programs have been implemented including those related to free drugs, free diagnostics, free dialysis, free transport services, and incentives under specific schemes to promote service utilization.
- Further in 2018, to ensure a continuum of care, Ayushman Bharat- Pradhan Mantri Jan Arogya Yojana was launched to provide free health coverage to the bottom 40% population.
- 51% of the households reported either decrease or no increase in OOPE on healthcare services (EY Primary Analysis: Household Survey, 2019). Almost 61% of the households had to spend money at Government health care facilities on transport, drugs, and food (EY Primary Analysis: Household Survey, 2019).

Equity and Social Inclusion

- Equity and gender mainstreaming initiatives have been considered at the design and policy level to provide equal opportunities to all for the availability of health services (Ministry of Health and Family Welfare, 2014). For increasing accessibility in tribal areas, there is a special focus on reducing the gap in the availability of health services in tribal areas services (Ministry of Health and Family Welfare, 2014).
- A significant divide has been observed between urban and rural populations in accessing the Government/Public Hospitals, both for OPD and IPD (NSSO 71st and 75th Round). Also, health indicators for tribal people remain poorer than the rest of the population (Ministry of Health and Family Welfare and Ministry of Tribal Affairs, 2018).
- While there has been a noticeable effort made on ensuring equity and social inclusion, there is still a lot desired across the spectrum (rural-urban; caste, tribal etc.) at the implementation level.

Coverage and Accessibility

- Accessibility and coverage of healthcare facilities have improved in terms of the creation of physical infrastructure, road connectivity, transport etc. However, lack of optimal availability of human resources (shortfall of specialists ~80% at CHCs and Health Assistant Male Workers ~60% at PHCs) and reliable services leads to an inverted care pathway. Further, a shortage in the Mid-level health providers (between doctors and ANM) has been observed.
- Accessibility has been enhanced with transport facilities like 102/108; Mobile Medical Units (MMUs); and Telemedicine. Average time taken to reach the nearest public health facility in rural areas was observed to be ~25 minutes while that in urban areas was ~20 minutes (EY Primary Analysis: Household Survey, 2019).
- Population based screening has been initiated through AB - HWCs and scaling up will need more resources both for greater digitization of e-health records to ensure better follow-up and also for free drugs initiative (EY Primary Analysis: KIIs, 2019).
- With the increased accessibility, limited availability of specialists and allied professionals

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[4] The DALY outcome in India was compared to that in select emerging economies (Brazil, China), high-SDI countries (USA, UK), South-East Asian countries (Thailand, Indonesia, Philippines) and low middle-income countries (Egypt and Sri Lanka).

(RHS, 2019), and weak linkage between of SC, PHC, CHC, and DH (NITI Aayog, 2019), there may be a need to study the linkages to arrive at an optimal configuration (EY Analysis, 2019).

Quality and Hygiene

➢ Several hygiene and quality enhancement programs have been initiated, which reflect in the satisfaction shown by the patients towards services received. However, the percentage of facilities accredited under various norms like IPHS, NQAS etc. remains low.

➢ Quality of healthcare is also maintained through medical audits and accreditation under National Quality Assurance Standards (NQAS-MoHFW-2017), National Accreditation Board for Hospitals and Healthcare Providers (NABH) and the National Accreditation Board for Testing and Calibration Laboratories (NABL). Other initiatives like LaQshya, Swachh Bharat Mission, Swachh Swasth Sarvatra, Kayakalp etc. have been launched by the GoI towards improving quality.

➢ The initiatives taken towards improving quality and hygiene appear to have an impact. It was observed that ~80-90% of the respondents were satisfied with various aspects of the services provided at health facilities (EY Primary Analysis: Household Survey, 2019). The reasons for dissatisfaction (in remaining 10-20%) included:
  o behavioural issues such as doctors and other health workers not being available/attentive or displaying rude behaviour;
  o inadequacy of infrastructure including poor functional status and long waiting time (EY Primary Analysis: Household Survey, 2019).

Increase in the share of Public Hospitals

➢ The share of Government/public hospitals in both OPD and IPD has increased by 4% in IPD Rural, 3% in IPD Urban, 5% in OPD Rural, and 5% in OPD urban from 2014 to 2017 (NSSO 71st Round, 2016); (NSSO 75th round, 2019). 27% increase in IPD from 2014-15 to 2019-20 and 26% increase in OPD during the same period was observed (HMIS, 2019).

Healthcare Financing

➢ Government's current expenditure on healthcare has been ~1.6% of GDP, which is significantly lower than the global benchmark.

➢ With the current trend, the target of 2.5% of GDP (2025) is less likely to be achieved.

Use of technology and Data Reporting

➢ Multiple parallel platforms for data reporting exist. These platforms have limited or no interoperability and data sharing features.

➢ RMNCH+A and a few other parameters are captured in HMIS quarterly. Information on disease control programs is available in pieces in different databases such as Nikshay (tuberculosis), Nikusht (leprosy) etc.

➢ External surveys such as Sample Registration System (SRS), District Level Household Survey (DLHS) and NFHS are available at a lag and different periodicity excluding the possibility of a real-time triangulation.

➢ There are disparities in the data reported in HMIS and NFHS for the same indicators measured across States and UTs.

➢ HRMIS database is not maintained/updated in most of the states. There is a need for common data sharing platform amongst different stakeholders (Directorate of Health Services, State

Chapter 1: Executive Summary

Health Mission, State Health Society, Directorate of AYUSH) for information relating to recruitment, transfers and postings of health officials.

Upcoming Trends

Apart from the parameters mentioned above, it is also important to understand the upcoming trends in the sect which would be critical towards shaping the policies in the coming years. Some of these trends include:

- Double burden of NCDs and CDs coupled with rapid urbanisation
- Increased awareness for preventive care & demand for AYUSH services
- Increased technology penetration
- Ageing population and demand home-based care
- Focus on Atmanirbhar Bharat
- India as Medical Value Travel (MVT) destination

Centrally Sponsored Schemes (CSS) and Umbrella CSS

Government of India drives the health sector policies and initiatives through Centrally Sponsored Schemes (CSS) and Central Sector Schemes, of which CSS take the larger share. Various Centrally Sponsored Schemes (CSS) launched in the health sector by Government of India are depicted in the table below. These schemes together are also referred as Umbrella Centrally Sponsored Scheme National Health Mission.

Ministry	CSS List		Year of launch
Ministry of Health & Family Welfare	National Health Mission	National Rural Health Mission	2005
		National Urban Health Mission	2013
	Tertiary Care Programme		2017[5]
	Human Resources for Health and Medical Education		2009-12[6]
	Ayushman Bharat (PMJAY and HWC)[7]		2018
Ministry of AYUSH	National AYUSH Mission		2015

There CSS have been analysed on parameters such as financial performance, Output-Outcome Framework, REESI+E (Relevance, Effectiveness, Efficiency, Sustainability, Impact, And Equity) and Cross-sectional themes. Best Practices across States and international case studies have also been presented.

National Rural Health Mission

The National Rural Health Mission (NRHM) was launched in 2005 to provide accessible, affordable and quality health care to the rural populations, especially the vulnerable groups. The thrust of the Mission is on establishing a fully functional, community-owned, decentralized health delivery system with inter-sectoral convergence at all levels, to ensure simultaneous action on a range of determinants of health such as sanitation, education, nutrition, social and gender equality.

The Scheme has been successful in improving the health indicators, including prevention and control of communicable and non-communicable diseases. While a steady decline in incidence and mortality of communicable diseases is observed, the targets for most of the communicable diseases are yet to be achieved. The increase in the NCD burden requires continued focus and strengthening of NCD control programs. Strengthening of DHs through NHM maybe a major step

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[5] In 2017, seven schemes were clubbed together as Tertiary Care Schemes
[6] Programs under HRH & ME were launched between 2009-2012
[7] This study does not evaluate Ayushman Bharat as the scheme was recently launched.

towards the same. The introduction of HWCs has been a positive initiative towards comprehensive primary healthcare. The need for continuous focus and increased momentum for upgradation of facilities into HWCs has been observed. Summary of evaluation of National Rural Health Mission is as follows:

Theme	Remarks
Relevance	**+** All the objectives are still relevant and expected to remain relevant in the next decades. Targets may be redefined over a period of time
Effectiveness	**+** Steady decline in mortality rates and improvements in other health outcomes **+** Strategies and tools have been quite effective as evident by – increased utilization of public health facilities and initiatives including JSY, LaQshya, SNCUs/NBCCs, MMUs, NQAS, community outreach sessions etc. **–** Inadequate linkage for referral of patients identified through population-based screening for NCDs launched in 2016. Strengthening referral systems is an ongoing process and needs more time to mature. As the HWCs and the teleconsultation/ telemedicine initiative is expanding, the referral linkages are also improving.
Efficiency	**+** Zero unspent balances left with states out of the central release since 2014-15 **+** Performance Based funding to States has been yielding positive results. Classification of States into five categories promote competitiveness(efficiency) amongst States while maintaining vertical equity (EY Primary Analysis). **+** To have transparency & accountability, Public Financial Management System (PFMS) has been introduced leading to tracking of funds till the last mile **+** Introduction of Flexipool allows the States to utilise funds as per local health needs **+** Increased utilisation of public health facilities **–** Frequency and quality of data reporting for output and outcome indicators.
Sustainability	**+** Adopted a systems approach and encourages states to adopt innovative strategies for strengthening the healthcare system towards increased sustainability. **+** State share has been progressively increased since FY 2015-16 **–** Technical capacity of State Directorates needs to be strengthened **–** More time is needed by the states to own a complete financial responsibility
Impact	**+** Significant contribution towards SDG and NHP-2017 goals **+** Use of technology has been scaled up e.g. m-health, telemedicine etc. **–** DALYs from all causes (communicable and non-communicable diseases) remains high for India as compared to international benchmarks [8]
Equity	**+** Free drugs, free diagnostics scheme, free dialysis, and free transport services have specifically addressed the health needs of the poor population **+** State PIPs to address the local needs of vulnerable population and inclusion innovative health projects at local levels **–** Reporting of fund utilisation and outcome indicators for health under TSP and SCSP needs improvement **–** While there has been a noticeable effort made on ensuring equity and social inclusion, there is still a lot desired across the spectrum (rural-urban; caste, tribal)
Financial Indicators	**+** Utilization of the funds at central level has been over 100% since 2016-17 **+** The scheme has performed well in terms of utilization of its allocations **+** Fund absorption capacity enhanced through flexipools and financial guidelines
Output Indicators	**+** 27 of 36 Output indicators targets have been met **–** 4 of 36 Output indicators targets have not been met **–** Data unavailable for 5 of 36 Output indicators
Outcome Indicators	**+** 14 of 24 Outcome indicators targets met **–** 3 of 24 Outcome indicators targets have not been met **–** Data unavailable for 7 of 24 Outcome indicators
Performance	Average

Satisfactory	Average	Needs Improvement

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[8] The DALY outcome in India was compared to that in select emerging economies (Brazil, China), high-SDI countries (USA, UK), South-East Asian countries (Thailand, Indonesia, Philippines) and low middle-income countries (Egypt and Sri Lanka).

Chapter 1: Executive Summary

The key issues and recommendation for NRHM are:

Key Challenges	Key Recommendations
Governance and Accountability	
• Lack of coordination between State Health Mission and Directorate of Health Services in many states except for a few like Maharashtra, Tamil Nadu and Karnataka (EY Primary Analysis: KIIs)	• Develop guidelines, strategies, and frameworks for DGHS-SHM integration including fixed-term deputation of employees from the directorate • Suggestion is in alignment with those proposed in Draft Report National Health Mission – Impact and Learnings for the future, 2019
Core Health Outcomes	
• Percentage of second and higher order live births in a gap of 2-3 years (as against the recommended gap of 3 years) is increasing in rural areas • TFR rates vary widely across states. • Low involvement of male health workers in IEC activities • IMR (2019) target was not met	• Increase awareness through the involvement of PRIs • Male health workers be hired for targeted outreach • Targeted IEC for specific states with high TFR • Operationalization of SNCUs/NBCUs in district hospitals as per plan. Increase community involvement in follow-ups of discharged infants from SNCUs/NBCUs. Kangaroo mother care, exclusive breast-feeding and home-based care should be further promoted.
Health Facility Strengthening	

• Percentage of total functional public health facilities operational as per IPHS norms remains low
• 12.7% CHCs not functioning 24×7
• As on March 2019, there was a shortfall of 81.8% specialists in CHCs
• Follow up of screened patients for NCDs have been sub-optimal
	• Investment in infrastructure needs to be increased, which may be allocated from the additional budget (provided towards reaching the target of 2.5% of GDP).
	  o Strengthening initiatives like increased uptake and upgradation of FRUs, SNCUs and 24×7 facilities along with upgradation of HWCs
	  o Strengthening DH for 24×7 facilities, ICUs and cardiac care units
	  o Need to develop a transparent and objective policy on recruitment, placement, and retention of specialist and other categories of Human Resources for Health
	• Linkages between health facilities for NCD screening, referral, and follow up compliance; and HWCs to be strengthened

Quality	
• Low proportion of public health facilities accredited /certified by NQAS/NABH/AHPI • Hospital Infection Surveillance and development and adherence to STPs is a concern in public health facilities	• Targeted investment in ensuring facilities meeting the quality norm. (NQAS/NABH/AHPI) and creating sufficient pool of quality assessors under NQAS • Focus be given to Hospital Infection Surveillance and development of and adherence to STPs through frequent orientation programs and proper monitoring
Program Interventions	

• Need for improved implementation of Free Drugs Service Initiative, development of antibiotic policy, adherence to standard treatment guidelines and quality control of drugs
• Inadequate follow up and continuity of maternal care
  o 74.4% of pregnant mothers received 4 ante-natal check-ups
  o For home deliveries (6.4%), skilled birth attendant was available only in 18.6% cases
	• Frequent prescription audits, patient satisfaction surveys and quality assessment be done for public health facilities and orientation programs on the use of generic drugs, standard treatment guidelines, use of antibiotics, and drug logistics be conducted for doctors in Government hospitals
	• Early registration of pregnancies in the first trimester and regular follow-ups in community and in health facilities should be improved by involving ASHAs, ANMs, and Anganwadi workers.
	• Use of IT and mobile phones to improve awareness in the community regarding maternal care and complications during pregnancy and details of referral hospitals in the public and the private sector

Disease Control	
• National Disease Control Programs (NTEP, NLEP, NVBDCP) less prominent with major focus on RCH	• Achieving elimination targets set for TB, Leprosy, Kala-azar is a high national priority. A special task force should be created to monitor progress and take course corrective

Key Challenges	Key Recommendations
• Disease control programs for TB, Leprosy, Malaria are facing challenges in terms of HR, information management, and technical supervision to achieve targets • NCDPC and National Mental Health Program need support in terms of case detection, setting up of the treatment clinics, follow up, and public awareness and support • Shortage of trained human resources to provide mental health care • Beneficiary data is unavailable for National Mental Health Program • There is a social stigma regarding mental health which prevents people to come out and seek professional help	actions. Adequate financial and human resources to be made available to address last mile issues • Public awareness and education to set aside stigma and discrimination associated with diseases like Leprosy and TB and active involvement of community leaders and PRIs • NRHM may draw special plans to involve PRIs and education campaigns to create a societal momentum for control of CDs • Population based screening for NCDs is gradually expanding through HWCs. There needs to be adherence to care pathways for those who are reported positive post screening • Beneficiary data needs to be tracked and monitored for effective care
Community Processes	
• ASHAs have been reported to be overburdened	• Need for increasing data integration among various departments and NRHM programs to help reduce burden on ASHAs for duplicate data collection
Accessibility	
• While considerable progress has been made in last few years, there remains a need to further enhance accessibility	• To encourage doctors to serve in rural/remote areas, states should be provided the flexibility to incentivize through extra credits to doctors with an experience of serving in rural areas during admission for PG courses • Reliable and timely transportation may increase accessibility considerable as most of the habitations are connected with all-weather roads now

National Urban Health Mission

The National Urban Health Mission (NUHM) was launched in 2013. NUHM envisages to meet health care needs of the urban population with the focus on urban poor, by making available to them essential primary health care services and reducing their out of pocket expenses for treatment. NUHM covers all State capitals, district headquarters and cities/towns with a population of more than 50,000.

NUHM is on the path to achieving the target for urban health indicators -IMR, U5MR, institutional deliveries, and MMR[9]. Further, there is a strong need to set up a primary healthcare system in urban areas which deals with healthcare challenges and needs of urban populations. The initiatives to address these challenges do not remain confined to the health sector alone but also need to be supported by other sectors such as social welfare, women and child development, road transport, education, drinking water, and sanitation. NUHM should develop institutional mechanisms for better inter-sectoral and also cross-departmental (e.g. ULBs and Department of Health) convergence. Post COVID-19, the development of urban HWCs below the level of UPHCs (Urban PHCs) has also been proposed under the Atmanirbhar Package. Summary of evaluation of NUHM is as follows:

Theme	Remarks
Relevance	**+** NUHM's aim to meet the health care needs of the urban population with the focus on urban poor, by making available to them essential primary health care services and reducing their out of pocket expenses for treatment remains very relevant.

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[9] NUHM Framework,2013 defines targets but does not propose the target year.

Chapter 1: Executive Summary

Effectiveness	
	− Has been unable to create the required infrastructure to meet the urban health need
	− Beneficiary coverage is lower than India average. For instance, in urban areas 80% of expected deliveries were converted to institutional deliveries; 82% of newborns and 63% of children under 3 year age received home visits.
	− Outcome targets don't have a proposed timeline for achievement in the scheme framework
Efficiency	+ Financial utilisation of the scheme has increased since 2016-17
	+ Performance Based funding to States has been yielding positive results. Classification of States into five categories promote competitiveness(efficiency) amongst States while maintaining vertical equity (EY Primary Analysis).
	+ To have transparency & accountability, Public Financial Management System (PFMS) has been introduced leading to tracking of funds till the last mile
	+ NUHM Flexipool allows the States to utilise the funds as per urban health needs
	+ Increased utilisation of public health facilities
	− Shortfall of different healthcare providers in urban PHCs and CHCs as follows:
	− Health Worker [Female] / ANM At PHCs In Urban Areas: 44%
	− Doctors at PHCs in Urban Areas: 17%
	− Total Specialist at CHCs in Urban Areas: 46%
	− GDMOs (allopathic) at CHCs in Urban Areas: 25%
	− 44.4% shortfall in the number of PHCs in urban areas against the estimated mid-year population till July 2019
Sustainability	+ Adopted a systems approach and encourages states to adopt innovative strategies including PPP models for service delivery and for strengthening the healthcare system towards increased sustainability
	− Technical capacity of State Directorates needs to be strengthened
	− More time is needed by the states to own a complete financial responsibility
Impact	+ Contribution towards SDG and NHP-2017 goals
	− NUHM is on the path to achieving its target for urban IMR, U5MR, institutional deliveries and MMR (timelines for achieving the targets not defined)
	− Data reporting (beneficiary level) for urban populations needs strengthening
Equity	+ NUHM was conceptualised for the vulnerable and poor section of the urban population which has low/no access to basic healthcare services.
	+ NUHM also aimed at reducing the burden of high OOPE on healthcare on lower income vulnerable population in urban areas.
	+ Till March 2020, 88% mapping of urban health facilities, and 87% slum mapping have been completed.
	− Only 55% vulnerability mapping has been completed under NUHM till March 2020
	− Reporting on progress of work under National disease control programs in urban area not regularly available and monitored
	− While there has been a noticeable effort made on ensuring equity and social inclusion, there is still a lot desired across the spectrum
Financial Indicators	+ The budget allocation and utilization have shown consistent improvement since 2016-17
Output Indicators	+ 4 out 5 output indicator target has been met
	− 1out 5 output indicator target has not been met
Outcome Indicators	+ 1 of 3 Outcome indicators targets met
	− 1 of 3 Outcome indicators targets have not been met
	− Data unavailable for 1 of 3 Outcome indicators
Performance	Average

	Satisfactory		Average		Needs Improvement

The key issues and recommendation for NUHM are:

Key Challenges	Key Recommendations
Infrastructure and Human Resources	
• Shortage of 4,026 urban PHCs	• Accelerated establishment and upgradation of urban public health facilities required
• Slow recruitment procedures and availability of attractive opportunities in private	

Key Challenges	Key Recommendations
sector have created shortages of HR at all levels	• Rationalization of facilities to ensure availability of 24×7 facilities with adequate and effective transportation rather than focus on only creation of infrastructure • Increased use of telemedicine and partnership with private doctors (selective strategic purchase in IPD and pilot on OPD) may be explored in the urban areas
Core Health Outcomes	

• NUHM's targets for urban IMR, U5MR, institutional deliveries, and MMR not clear	• Target year for urban health indicators needs to be defined
	• Strategies may be re-designed as per the urban population's needs and challenges
	   • Outreach activities to be strategized to effectively reach out to the population. Activities should be done in the evenings as during the day most of the target population is at work.
	   • Increased focus on migratory population, who are left out from availing services from both NUHM and NRHM

Community Processes	
• ASHAs need support in urban areas due to high work-load and high attrition rate. ASHA trainings are not localized (Ministry of Health and Family Welfare, 2015)	• Supervisory hand-holding structure for ASHAs should be linked with NRHM • Dedicated support in the form of a public health manager/facilitator to lead and direct ASHAs can be provided in urban areas • ASHAs need to be trained in Interpersonal Communication (IPC)

Tertiary Care Program

In 2017, seven schemes were clubbed to create tertiary care programs focussing on:

• creation of required infrastructure at tertiary level for non-communicable diseases and e-health programs,

• creation of Centres of Excellences which shall serve as Institutes to set standards and undertake research

• helping in development of trained manpower

The tertiary care programs address the increasing need for infrastructure and specialists at the tertiary level given the increase in burden at district hospitals and medical colleges. Under NPCDS, out of the 17 State Cancer Institute and 20 Tertiary Care Cancer Centres only 1 is reported to be functional. Under NPHCE, the 18 out of the 19 sanctioned Regional Geriatric Centres have functional OPD services and more than70% have IPD, laboratory, and physiotherapy services. Similarly, under most other programs, projects have been sanctioned but are either partially functional or non-functional. While the allocations and utilization rates have been decreasing, tertiary care programs need increased focus to maintain and upgrade the tertiary level healthcare infrastructure. Programs such as telemedicine and NPCB have shown good performance. Summary of evaluation of Tertiary Care Programs is as follows:

Theme	Remarks
Relevance	**+** All seven programs and their objectives are relevant and expected to remain relevant in the next decade. Targets may be redefined over a period of time
Effectiveness	**+** Convergence of tertiary care programs with programs under NHM has been good **–** Creation of infrastructure approved across all programs. However, few have become functional **–** Low awareness about program benefits
Efficiency	**–** Fund utilisation across all programs has been found to be low **–** Low uptake of funds after the first tranche is released for infrastructure **–** Holistic approach for planning and development of infrastructure and equipment is found missing

Chapter 1: Executive Summary

Sustainability	– Continued support is required for all the programs
	+ Private sector participation models and more use of technology are being explored for some of the programs
Impact	+ Infrastructure created has helped in dealing with NCDs, lifestyle diseases & injuries and also contributed to preventing economic loss due to disease and disability
	+ Wherever functional, the programs contribute towards a reduction in catastrophic health expenditure for poor patients
	– Beneficiary level data and updated status of operational tertiary care facilities are not available in the public domain
	– Number of functional institutes on the ground is found to be low
Equity	+ Institutes provide care to patients irrespective of their socio-economic status
	– Much is desired to be achieved under the equity spectrum
Financial Indicators	– Allocations have decreased sharply from 2017-18 to 2018-19.
	– With decrease in allocations, the utilization also decreased considerably.
Output Indicators	+ 9 of 14 Output indicators targets have been met
	– 3 of 14 Output indicators targets have not been met
	– Data unavailable for 2 of 14 Output indicators
Outcome Indicators	+ 5 of 13 Outcome indicators targets have been met
	– 5 of 13 Outcome indicators targets have not been met
	– Data unavailable for 3 of 13 Outcome indicators
Performance	Average

| | Satisfactory | | Average | | Needs Improvement |

The key issues and recommendation for Tertiary Care Programs are:

Key Challenges	Key Recommendations
Governance	
• Issues in university affiliation for development of PG departments in medical colleges in NMHP & NPHCE programs due to involvement of multiple stakeholders and procedure/process set by regulatory bodies like MCI, RCI, NCI etc	• National Medical Commission may lay down criteria and SOPs to accelerate the process of affiliation to University for award of MD degree in new disciplines created to serve National Health Programs.
Infrastructure (Physical)	
• Lack of dedicated trauma and burn beds	• Dedicated trauma beds need to be present in each district hospital. Separate Burn units also need to be developed in district hospitals.
Infrastructure (Human Resources)	
• Lack of skilled human resources	• Shortage of human resources can be addressed by using measures such as partnering with private players/individual private healthcare providers
	• Need for specialist or tertiary care programs should be aligned with the capacity of medical education system to generate skilled resources. Compulsory posting of specialists trained by public institutions to serve National Health Programs at various levels like, CHCs, District Hospitals and tertiary care centres may be considered
	• Use of technology like telemedicine and teleradiology to effectively utilize the human resources
Budget and Fund Flow	
• Lack of fund flexibility • Delay in flow of funds	• Fund flexibility under tertiary care program needs to be improved, the re-appropriation process needs to be smoothened has to be communicated to the states

Key Challenges	Key Recommendations
	• Better integration and enforcement of PFMS system to track disbursal and utilization at the execution point
Community Interventions & IEC	
• Scope for further awareness generation around mental health issues and stigma associated with such issues	• Creating awareness in communities using all channels of communication focusing on signs and symptoms and management of mental illnesses. Also, undertaking targeted IEC activities to dispel people's myths about mental illnesses

Human Resources for Health and Medical Education

Human resources for health and medical education focusses on development and capacity building of the healthcare workforce. Various sub-schemes under HRH & ME are as follows:

- Strengthening of Government Medical Colleges PG seats
- Strengthening of Government Medical Colleges UG seats
- Establishment of New Medical Colleges attached with District/ Referral Hospitals
- Upgradation/ strengthening of Nursing Services
- Setting up of State Institutions of Para-Medical Sciences in States and Setting up of Colleges of Para-medical Education

The scheme fulfils its stated objectives including reducing the gap between the availability of private and public medical seats at affordable costs, especially in under-served regions. However, there is a lack of interest from State Governments to set up para-professional institutes for quality training of allied health professionals (physiotherapist, radiology technician, audiologist etc) as recommended by NHP-2017. This could also be due to the absence of a central Allied and Healthcare Professions Act to govern and monitor the functioning of allied health professionals' councils in the states. With the increasing number of medical seats, there is a need for increasing teaching faculties for quality medical education. Summary of evaluation of Human Resources for Health and Medical education scheme is as follows:

Theme	Remarks
Relevance	**+** Given the shortage of specialists, doctor and allied health workforce in India, this scheme helps in increasing the UG and PG seats in government colleges
	+ The scheme required to be continued to meet the desired number of specialists, doctor and other allied health workforce as per norms
	+ The program for GNM colleges has been discontinued due to integration with B.Sc. nursing course
Effectiveness	**+** Substantially increased UG and PG seats (achieved more number of government UG seats than private UG seats)
	+ Facilitated opening of new medical colleges
	− Target of increasing more than 10,000 MBBS seats yet to be met (timeline for target achievement not defined)
	− Programs for allied healthcare professional colleges/seats have observed low demand and have been discontinued (except for ANM).
Efficiency	**+** 100% fund utilisation in UG seats, PG seats and new Medical College schemes
	+ Utilising the existing resources under the district hospitals efficiently and in a cost-effective manner
Sustainability	**+** Initiatives to develop medical colleges under various models such as PPP
	− Grant support essential for the development of new medical colleges; and increase in UG and PG seats in underserved areas
Impact	**+** Scheme facilitated an increase in the availability of pool of medical and allied professionals and thus paving the way for achieving the goal of Universal Health Coverage

Chapter 1: Executive Summary

	+	Before the onset of the scheme, the number of private medical seats were more than the government medical seats, which has reversed
	–	Year on year data unavailable to measure outcomes of the programs
Equity	**+**	Preference to underserved areas including districts without medical college and aspirational districts
Financial Indicators	**+**	The allocations have increased sharply from 2016-17 to 2017-18.
	+	The utilization of the allocated funds has been almost 100% since 2016-17
Output Indicators	**+**	1 of 5 Output indicator targets have been met
	–	1 of 5 Output indicator targets have not been met
	–	Data unavailable for 3 of 5 Output indicator
Outcome Indicators	**+**	3 of 8 Outcome indicators targets have been met
	–	Data unavailable for 4 of 8 Outcome indicators
Performance	Satisfactory	

Satisfactory	Average	Needs Improvement

The key issues and recommendation for Human Resources for Health & Medical Education are:

Key Challenges	Key Recommendations
Infrastructure	
• Additional resources (e.g teaching faculties, teaching aids and clinical equipment) required for the district hospitals to take the role of a medical colleges & hospital • Shortage of teaching faculties and other resources in medical colleges • Lack of adequate capacity building framework for health workforce	• A group of medical colleges attached to districts in a region of a state may adopt cluster or collaborative approach and share their teaching, research and HR to add richness to learning and teaching standards of local medical colleges (private or public) by involving private sector, civil societies organisations • IT enabled training may be included • There is a need to expedite the enactment process of Allied and Healthcare Professions Bill, 2018 for improving the quality of service delivery. The Scheme for Setting up of State Institutions of Para-Medical Sciences in States and Setting up of Colleges of Para-medical Education should be relaunched post the enactment of the bill as recommended by the Expenditure Finance Committee.

National AYUSH Mission

National AYUSH Mission was launched in 2015 to promote AYUSH medical systems with implementation being done through States/UTs. The basic objective of NAM is to promote AYUSH medical systems through:

- Cost effective AYUSH services
- Strengthening of AYUSH educational systems
- Facilitating the enforcement of quality control of Ayurveda, Siddha, Unani & Homoeopathy (ASU&H) drugs
- Ensuring sustainable availability of ASU&H raw materials by promotion of cultivation and post-harvest processing of medicinal plants

The scheme has been instrumental in promoting AYUSH medical systems, which is evident from the creation of AYUSH infrastructure for AYUSH services, educational institutions, and an increasing number of patients visiting AYUSH Government health care facilities. There is a need for more focus on the mainstreaming of AYUSH services to increase the first point of contact for AYUSH services. AYUSH should have a component under R&D (central sector scheme) for promoting integrated care pathway along with modern medicine. The medicinal plant component of the scheme may also be changed into a central sector scheme. Also, like NHM, NAM should have robust IEC strategies for improved outreach activities. Summary of evaluation of National AYUSH Mission is as follows:

Theme	Remarks
Relevance	**+** All the objectives are still relevant. Targets may be redefined over a period of time
Effectiveness	**+** In 2017-18, the number of OPD patients who visited AYUSH Government health care facilities were 17.7 Crores and the number of IPD patients who visited Government health care facilities were 19.5 Lakhs which has shown marginal improvements from the previous year (2016-17) **−** NAM has been successful in terms of the creation of infrastructure in accordance with its targets. While physical infrastructure is a crucial component, delivery related initiatives require key focus
Efficiency	**−** Over a 5-year period from 2015-16 to 2019-20, the Government has allocated approximately INR 2300 Crore to different States. The utilization rate (as a % of the budget allocated) over the period has been approximately 50%. **−** The resource utilization varies from state to state and depends on various aspects (independent administrative structure, flow of funds, availability and training of AYUSH workforce, IEC activities etc.)
Sustainability	**+** For different community-based interventions, States are providing financial support for implementing innovative practices in AYUSH **−** The scheme cannot sustain without central support **−** Focus on AYUSH is low in most of the States
Impact	**+** 13,205 AYUSH units were co-located out of total existing PHCs, CHCs, and DHs till 2018-19 **−** NHP-2017 envisages better access to AYUSH remedies through co-location in public facilities. Co-located units serve as the first point of contact for AYUSH systems and has immense potential to generate demand and awareness about AYUSH services. Hence this component requires critical attention and priority **−** Primary surveys have shown low levels of awareness about AYUSH services. As per NSSO 75th round, the percentage of ailments treated by AYUSH in India accounts for merely 4.4% (2017-18)
Equity	**+** A larger percentage of ailments in females over males, primarily ailments in urban females, is treated by AYUSH in India **+** The Ministry of AYUSH has also recommended the inclusion of 19 AYUSH treatment packages under PMJAY. It is expected that this would be a step towards encouraging alternative medicine and will serve the purpose of co-locating AYUSH facilities **−** Use of AYUSH services has found to be lower among middle-income households as compared to high-income households.
Financial Indicators	**−** Over a 5-year period from 2015-16 to 2019-20, the Government has allocated approximately INR 2300 Crore to different States. The utilization rate (as a % of the budget allocated) over the period has been approximately 50%. **−** Amount allocated has been consistently increasing over the years while the utilization rate has been decreasing.
Output Indicators	**+** 5 of 8 Output indicators targets have been met **−** 3 of 8 Output indicators targets have not been met
Outcome Indicators	**+** 3 of 5 Outcome indicators targets met **−** 2 of 5 Outcome indicators targets have not been met
Performance	Average

	Satisfactory		Average		Needs Improvement

The key issues and recommendation for NAM are:

Key Challenges	Key Recommendations
Governance and Accountability	
• While few States have officials taking independent charge for AYUSH (Kerala, Rajasthan, HP, UP, MP), in most, the administrative independence is inadequate and negligible. Meetings of governing bodies and executive bodies are not attended by the senior-level state	• Administrative set up for AYUSH needs to be more independent with dedicated resources – Devolution of administrative and financial power at lower levels is required for quicker decision making • DPMU may be set up with members consisting of heads of district AYUSH hospitals, district AYUSH colleges, district CMO, nominee from office of the District

Chapter 1: Executive Summary

Key Challenges	Key Recommendations
representatives which inhibits effective issue resolutions • Dual control under NHM and NAM (EY Primary Analysis) • There is a State AYUSH Society at the State level, but unlike NHM district/nodal officers are not present in every district for monitoring and implementation of NAM initiatives that are being undertaken in that particular district	Magistrate, District Nodal Officer to ensure synergy of inputs between modern medicine system and AYUSH and for planning, implementation, and monitoring of AYUSH initiatives • Dual control is as per matrix structure which is desirable. Further, a central sector scheme may be added to ensure integration of AYUSH with modern medicine • Medicinal plant component may be converted into a central sector scheme
Flow of Funds	
• Adequacy and timelines of funds and parking of funds for long duration	• State agencies may conduct follow ups with state treasury for timely release of funds • Better integration and enforcement of PFMS system to track disbursal and utilization of funds at the execution point
Human Resources	
• Courses for allied healthcare professionals not regulated centrally • Marginalization of AYUSH workforce in co-located units (HR component under co-location is being handled by NHM) • Lack of regular/ incentive-based long-term contractual staff in 50 bedded integrated AYUSH hospitals and upgradation of Hospitals & Dispensaries • Lack of AYUSH support staff in Dispensaries	• To maintain quality of teaching for allied healthcare professionals, there may be a central regulatory mechanism • AYUSH doctors at co-located facilities may also be trained/re-trained in their core professional areas besides NHM interventions • Recruitment/creation of regular/incentive-based long-term contractual staff in 50- bedded integrated AYUSH Hospitals and upgradation of Hospitals & Dispensaries is required to be done on priority basis by the respective State/UT Governments • Incorporate provision for posts for hiring AYUSH support staff for AYUSH dispensaries in the framework for implementation
Procurement	
• Lack of timely supply and shortage of medicines and lack of adequate opportunity for private sector participation in the procurement process. • Lack of dedicated policies for procurement of medicines. • Lack of standardized protocols for construction activities leading to delays in utilization of funds	• AYUSH department in States may leverage the existing purchase and procurement infrastructure including medical services corporation of the state (whichever is applicable) for procurement of drugs. The corporation may be authorized to also monitor quality of medicines. The corporation could also empanel private players. • NAM may consider developing a model procurement policy to support States in adopting/finalising their policy
Quality of assets/services	
• Lack of monitoring committee to ensure the quality of assets/services • Lack of post-harvest infrastructure for medicinal plant species • Lack of protection of patent rights for medicinal plants • Lack of measures to ensure quality in the AYUSH workforce	• States may set-up quality assurance committees and may be monitored by the MoA • States may follow the list of plant species mentioned by the State Medicinal Plants Board as it affects selling and storage of these species and infrastructure available • There is a need to document medicinal plants with established medicinal values and protect patent rights under the relevant laws of the land • Performance-based appraisal system may be considered. A mechanism may be put in place to rank the existing AYUSH colleges and hospitals.
IEC activities	
• Insufficient activities implemented under the IEC component	• Need for guidelines from centre on ensuring uniformity in messages that are intended to be conveyed. IEC

Key Challenges	Key Recommendations
	component of NAM also requires clear targets from the centre
Other recommendations	
• Need for integrated protocols for managing NCDs by effectively utilizing AYUSH medicines • Need for plans for improved utilization of existing funds including re-appropriation of funds	• SOPs for integrating AYUSH for case management of NCDs, for preventive and promotive aspects of care and referrals will aid in mainstreaming of AYUSH • May empower the States to build capacity to absorb the funds. Also, handhold states in preparing State Annual Action Plans for better utilization of resources.

The summary of CSS analysis has been presented in the table below:

Chapter 1: Executive Summary

CSS Analysis

	Performance on REESI+E Framework						Overall Performance			
Scheme	Relevance	Effectiveness	Efficiency	Sustainability	Impact	Equity	Financial Indicators	Output Indicators	Outcome Indicators	Overall Performance
NRHM	🟢	🟡	🟢	🟡	🟢	🟡	🟢	🟢	🟡	🟡
NUHM	🟢	🔴	🟡	🟡	🟡	🟡	🟢	🟢	🟡	🟡
Tertiary	🟢	🟡	🔴	🟡	🟡	🟡	🔴	🟡	🟡	🟡
HRH&ME	🟢	🟡	🟢	🟡	🟡	🟡	🟢	🟡	🟡	🟡
AYUSH	🟢	🟡	🔴	🟡	🟡		🔴	🟡	🟡	🟡

🟢 Satisfactory　🟡 Average　🔴 Needs Improvement

Scheme	Accountability and Transparency	Gender Mainstreaming	Climate Change & Sustainability	Use of IT and Technology	Development, dissemination and adoption of innovative practices	Stakeholder and beneficiary behavioural change	Research and development	Unlocking synergies with other Government programs	Impact and role of private sector, community, cooperatives	Direct/Indirect Employment Generation	Social Inclusion and Role of TSP & SCSP	Reforms and Regulations
Schemes' Mapping with Cross-Sectional Themes												
NRHM	Average	Average	Satisfactory	Average	Satisfactory	Average	Not relevant	Average	Average	Data unavailable	Data unavailable	Satisfactory
NUHM	Average	Average	Satisfactory	Needs improvement	Average	Average	Not relevant	Needs improvement	Average	Data unavailable	Data unavailable	Satisfactory
Tertiary	Average	Not relevant	Not relevant	Needs improvement	Not relevant	Data unavailable	Not relevant	Average	Not relevant	Data unavailable	Data unavailable	Not relevant
HRH&ME	Average	Not relevant	Not relevant	Needs improvement	Data unavailable	Data unavailable	Not relevant	Not relevant	Average	Data unavailable	Data unavailable	Average
AYUSH	Average	Average	Not relevant	Average	Average	Average	Average	Average	Needs improvement	Satisfactory	Average	Satisfactory

Legend:
- 🟢 Satisfactory
- 🟡 Average
- 🔴 Needs improvement
- ⚪ Not relevant/applicable
- 🔵 Data unavailable

Chapter 1: Executive Summary

Way Forward

Gap map synthesis of Sector and CSS

Challenges	Coverage	Further Actions
High OOPE	🟢	• Strategic purchasing from the private sector may be considered for: a) IPD services; b) pilot basis for OPD services, post establishment of strict referral mechanism. Promote use of standard treatment protocols and generic drugs. Further, outreach activities also need to be planned • Incentivize driving efficiency in private sector & quality improvements • Enabling Make in India for medical supplies including eco-system creation • Set up Challenge Funds for innovations
Shortage of healthcare professionals	🟢	• Courses focusing on mid-level health professionals and national programs • Periodic capacity building of health professionals using digital platforms • Development of public health management cadre in all States

Weak primary infrastructure & care pathway linkage	🟢	• Ensuring availability and reliability of service at HWCs/PHC/CHCs
		  • Adhering to quality norms
		  • Periodic infrastructure & audit
		• Research on development and operationalization of the Integrated Care Pathway
		• Strong referral pathway and gate keeping using IT

Ensuring equity	🟢	• Strong & targeted IEC on entitlements for beneficiaries
Meeting SGD/NHP goals	🟢	• Technology for monitoring scheme implementation progress • Stronger convergence with other ministries through task force • Community based follow up of children discharged from nutrition rehabilitation centre and intense collaboration with ICDS as per POSHAN recommendations
Population stabilization	🟢	• Targeted IEC in focus states for TFR reduction & spacing of child • Recruitment of male health workers and involvement of PRIs
Quality and periodicity of data	🟡	• National Health Digital Mission to focus on data • Create framework for open health network in health sector
Low Technology penetration	🟡	• Facilitating the development of Open Health Network
Fragmentation of service providers	🔴	• Incentivise private service providers to (a) drive efficiency, (b) adherence to quality, (c) participation in strategic purchase (if conceived) • Capacity building on various aspects through digital mode
Missing middle	🟡	• Enabling risk pooling for the missing middle (middle income population not covered under Ayushman Bharat or any other institutional purchase of insurance/assurance)
Health seeking behaviour	🟡	• IEC & incentive to promote health seeking behaviour • Physical and mental wellbeing a part of the academic curriculum • Stronger IEC campaigns against the consumption of tobacco, alcohol, and substance abuse
Medical Value Travel	🔴	• "Heal in India" campaign • Accreditation of MVT facilitators

🟢	Adequate coverage under CSS/Central Sector Schemes	🟡	Inadequate coverage	🔴	No Coverage

Rationalisation of CSS

Scheme/Program	Performance	Relevance	Rationalisation		Remark
National Rural Health Mission	🟠	🟢	▶ (green)	⬆	Additional funding towards programs addressing IMR, NMR, U5MR and disease control programs, reducing of health inequalities (targeted initiatives for underserved), availability of health workforce especially specialists, and improving quality of care
National Urban Health Mission	🟠	🟢	▶ (green)	⬆	Higher investments for strengthening of primary and secondary care infrastructure. Programs need to be modified as per urban context. Equivalents of ANM in rural context required to make urban ASHAs more effective.
National AYUSH Mission	🟠	🟢	▶ (yellow)	⬆	The centre may develop various programs in consultation with States and empower the States to build capacity to absorb the funds. The centre may handhold the States in preparing State Action Plans for better utilization of resources. AYUSH needs to be integrated seamlessly in the monolithic care pathway. A new program component may be added to popularize AYUSH as well as to carry out the research to suggest mechanism for the integrated treatment pathway. Medicinal plant component may be a central sector scheme as States have not seen the appetite to be able to provide matching funds and it needs timely action on field for sowing during specific months of the year.
Tertiary Care Programs	🟠	🟢	▶ (green)	⬌	More commitment from states desired to make the facilities operational at the earliest. Fund flexibility under the tertiary care program needs to be improved. The apex level institutes should provide capacity building and referral support to secondary level hospitals adopting a formal mechanism for referral compliance and in-service program should be linked to the colleges generating health workforce.
Human Resources for Health and Medical Education	🟠	🟢	▶ (yellow)	⬆	HRH&ME schemes (UG & PG seats, upgradation of District hospital to medical college,) should be continued. Scheme for setting up post-enactment of the Allied and Healthcare Professions Bill, 2020. A comprehensive & transparent Human Resource Policy (for recruitment, posting, transfer & retention) should be adopted by all states.

▶ To be continued	▶ Continued with modifications	🟢 Highly Satisfactory	🟠 Satisfactory	⬆ Increased allocation	⬌ Allocation trend to continue

Chapter 1: Executive Summary

Chapter 2: Sectoral Analysis

2. Sectoral Analysis

India has recorded several gains in health since the last decade by improving life expectancy, reducing fertility rates, reducing maternal and child mortality rate. Focused efforts have been made to meet the targets set under Sustainable Development Goals (SDGs). Further, the share of public sector has also improved in the last five years.

The burden of communicable diseases like tuberculosis and malaria still remains high. Simultaneously, the incidence of non-communicable diseases like cancer, diabetes etc. is also increasing rapidly.

Further, health sector in India is highly fragmented in terms of service providers. Significant proportion of the health needs (OPD and IPD) of the population are served by the private sector (formal and informal).

Further, the fragmentation is not just in terms of provision of healthcare in the country, but also in terms of other dimensions such as financing, service delivery, insurance coverage (risk pooling), standardisation in use of IT/Technology, quality of care standards etc (NITI Aayog, 2019). The public sector has multiple levels of care: SC, PHC, CHC, SDH, DH, Medical Colleges and Super Speciality Tertiary Centres. Unclear/uncontrolled referral pathways lead to random health seeking behaviour of patients among multiple levels in search for care (NITI Aayog, 2019).

While continuum of care has been well conceived, the tertiary care institutions are serving a significant proportion of primary and secondary care requirements as well. Because of relatively weak primary care system and broken referral pathway, tertiary care public health facilities are often overburdened with primary and secondary care patients.

Though evidence suggests improvement in health indicators, the affordability of healthcare still remains a key issue in the country. The major contributor to total healthcare expenditure is the out of pocket expenditure on healthcare (National Health Accounts, 2018).

A detailed analysis of the Indian health sector has been presented in this chapter. Section 2.1 describes the evolution of the health sector in India post-independence. Section 2.2 discusses the performance of the sector. Section 2.3 discusses the inter-sectoral convergence of ministry of health and family welfare with different ministries. Sections 2.4 identifies the upcoming trends in the sector. Section 2.5 highlights the challenges faced by the sector.

2.1 Background

While public health falls under the State list, the Ministry of Health and Family welfare plays a critical role in shaping the sector through National Health Policies, centrally sponsored schemes, central sector schemes, and institutions for research & development.

While public health is a state subject under the Constitution of India, the Central Government has given directions and thrust to the healthcare regime in India through many national programs/CSS (Baru, 2013). The Constitution of India, in Schedule VII, identifies various components of healthcare under Union, State, and Concurrent lists as detailed below:

Concurrent List	Union List	State List
Entry 20A: Population control and family planning Entry 25: Education, including technical education, medical education and universities* vocational and technical training of labour Entry 26: Legal, medical and other professions	Entry 28: Port quarantine, including hospitals connected therewith; seamen's and marine hospitals	Entry 6: Public health and sanitation; hospitals and dispensaries

* subject to the provisions of entries 63, 64, 65 and 66 of Union List;

2.1.1 Evolution of public health care

Development of the health sector has been a priority area for policy makers since Independence. The first National Health Policy (NHP) was formulated in 1983, incorporating the aspiration envisioned in Alma Ata Declaration (1978), with a focus on the provision of primary healthcare to all by 2000. This was followed by NHP (2002) in the backdrop of Millennium Development Goals (MGDs).

Table 2-1: Highlights of evolution of public healthcare in India (1947-present)

Period	Focus	Key Events
1947-60	Reduction of Mortality, Equity and Coverage	➢ Bhore Committee (1946) laid out a proposal for a national program of health services in India stressing on the importance of integration of preventive care and curative treatment; ➢ National Malaria Eradication Program (1958) was launched to combat the international threat of malaria; ➢ Mudaliar Committee (1959) assessed the progress made in relation to broad areas of Bhore Committee recommendations and advised to consolidate and build on the gains in the field of public health and medical relief.
1961-80	Disease Control Program and Family Welfare System Strengthening	➢ National Tuberculosis Program (1962) gave operational guidelines for Tuberculosis Control; ➢ National Goitre Control Program (NGCP) was launched in 1962 (now called National Iodine Deficiency Disorders Control Program(NIDDCP) ➢ Chadha Committee (1963) outlined details of requirements related to planning and functioning of PHCs and performance of National Malaria Eradication Program; ➢ Mukherjee Committee (1965) reviewed staffing pattern and financial provision under Family Planning Program; ➢ Jain Committee (1966) looked into medical care services; ➢ Jungalwalla Committee (1967) reviewed integration of health services, abolition of private practice by doctors in government services, and the service conditions of doctors; ➢ Kartar Singh Committee (1973) studied the issues of integrated services, training, and mobile services; ➢ Minimum Needs Program (1974–78) was launched for social and economic benefits to the underprivileged; ➢ Shrivatsava Committee (1975) deliberated on medical education and manpower; ➢ National Program for Control of Blindness was started in 1976; ➢ Alma Ata Declaration in 1978 led to the launch of "Health for all by 2000".

Chapter 2: Sectoral Analysis

Period	Focus	Key Events
1981-2000	Child and Maternal Mortality · Disease Control · Comprehensive Primary Healthcare	➢ National Mental Health Program (NMHP) was launched in 1982; ➢ Medical Education and Review Committee 1983 recommended out-patient exposure for medical students; ➢ National Health Policy 1983 called for universal, comprehensive primary health care services; ➢ Bajaj Committee 1986 was constituted for Health Manpower Planning, Production and Management; ➢ National AIDS Control Program 1987 was launched to coordinate national responses like blood screening and health education for HIV and AIDS; ➢ MDGs 2000 were launched with 8 goals and 18 measurable targets; ➢ In 1982, the government made a policy decision to iodate all edible salt in India. ➢ National Leprosy Eradication Program (NLEP) was started in 1983; ➢ Reproductive and Child Health Program, 1997 was launched for safe pregnancy and child-birth.
2001-2010	Family Planning · Communicable Diseases	➢ National Population Policy 2000 provided for an overarching policy framework for child health and family planning goals; ➢ National Health Policy 2002 gave comprehensive primary healthcare services linked with health education; ➢ National Vector Borne Disease Control Program (NVBDCP) including monitoring of all vector borne diseases like Malaria, Filaria, Dengue, Japanese Encephalitis Plague, Kala Azar etc. was introduced in 2003; ➢ Integrated Disease Surveillance Program (IDSP) was started in 2004; ➢ NRHM was introduced in 2005 to improve access and availability of healthcare in under-served rural areas; ➢ Janani Suraksha Yojana was also launched in 2005; ➢ National AIDS Control Program III, 2007 focused on outreach programs, decentralised support and inputs by state governments and local NGOs to provide welfare services to the affected ➢ National Ambulance Service (108) was started in 2009; ➢ National Program for Prevention & Control of Cancer, Diabetes, Cardiovascular Diseases & stroke (NPCDCS) was launched in 2010. ➢ A pilot project initiated during 9th /10th FYP for strengthening Emergency Services in Hospitals on National Highways, was approved as a National Programme by CCEA during 11th FYP ➢ A pilot Project for Prevention and Management of Burn Injuries (PPPBI) was implemented during the 11th FYP.

Period	Focus	Key Events
2011 - Present	Dual Burden of Communicable and Non-Communicable Diseases Universal Health Coverage Curative, Preventive and Promotive Healthcare	➢ Janani Shishu Suraksha Karyakaram (JSSK) was introduced in 2011 to reduce maternal and neo-natal mortality by promoting institutional deliveries; ➢ National Program for Palliative care (NPPC) was started in 2012; ➢ National Programme by CCEA was extended in 12th FYP with additional components such as-setting up of NISC to strengthen data aspects, provision of Rehabilitation services in level II and above TCFs, provision of monitoring cell, IEC activities, capacity building through various modes etc. For the extension of the Programme beyond 12th FYP, it was approved that Trauma care facilities upto District level may be supported under NHM; ➢ National Program for Prevention and Management of Burn Injuries (NPPMBI) by CCEA during 12th FYP for setting up of Burn Units in 60 Medical Colleges and Burn Units upto District Hospital level were to be supported under NHM; ➢ NRHM and NUHM were merged into NHM in 2013 to provide comprehensive services to improve availability, accessibility and affordability of health services focusing on urban poor and vulnerable population; ➢ Rashtriya Bal Swasthya Karyakram was started in 2013; ➢ RMCH+A, 2013 aims to address major causes of mortality among women and children as well as the delays in accessing and utilizing health care and services; ➢ Adolescent Health (RKSK), National Ambulance Service (102) and National Oral Health Program (NOHP) were launched in 2014; ➢ National AYUSH Mission introduced in 2014 brought considerable focus to alternative and indigenous forms of medicine under the healthcare sector; ➢ Mission Indradhanush was started in 2014 to achieve full immunization coverage for all children and pregnant women; ➢ SDGs were launched in 2015 with 17 goals and 169 targets (Goal 3: Good Health and well-being); ➢ Free Drugs & Diagnostics Service Initiatives were started in 2015; ➢ Pradhan Mantri Surakshit Matritva Abhiyan was launched in 2016; ➢ NHP 2017 envisaged its goal for attainment of highest possible level of health and well-being for all; ➢ National Program for Prevention & Management of Burn Injuries (NPPMBI) was introduced in 2017; ➢ Ayushman Bharat launched in 2018 looks into primary, secondary and tertiary care systems, covering preventive, promotive, curative and ambulatory care; ➢ Aspirational Districts Program was introduced in 2018.

Chapter 2: Sectoral Analysis

2.1.2 National Health Policy 2017 and Sustainable Development Goals- 2015

The latest NHP (formulated in 2017) focuses broadly on the areas listed below. The policy has also defined goals for key health indicators which have been discussed in Section 2.2.1.

Key Thrust Areas:

- Preventive and promotive Health through intersectoral coordination and "Health in all" approach
- Strengthening primary care services, and continuity of care
- Strengthening tertiary care services
- Strengthening human resources for Health through emphasizing on medical education, attracting and retaining doctors in remote areas, specialist attraction and retention, nursing education etc.
- Urban Health
- Regulatory reforms for clinical establishments, professional and technical education, food safety, medical technologies, medical products, clinical trials,
- Improving availability of drugs and medical devices though 'Make in India' approach
- Application of digital health technology
- Disaster Preparedness with Emergency Care

SDG 3 Good health and Well-being: aims to end preventable deaths from communicable diseases, NCDs and illness caused by different forms of pollution. It also aims to achieve universal health coverage, including financial risk protection, access to quality essential health care services and access to safe, effective, quality and affordable essential medicines. Mental has also been a key focus under this goal.

Sustained efforts have to be made towards achieving all the SDG targets. India has made notable gains on key health indicators. For example: MMR has declined to 113 in 2016-18 from 254 in 2004-06. U5MR in 2018 was 36, down from 74 in 2005-06. The detailed SDG target mapping is given in Section 2.2.1

2.2 Performance of the Sector

Health sector performance is analysed on various parameters such as: health indicators, affordability, equity and social inclusion, coverage and accessibility, quality and hygiene, public vs private healthcare scenario, healthcare financing, use of technology and data reporting, employment generation, governance, IEC and outreach activities and community interventions, key legislative changes and regulatory reforms, and research and development.

2.2.1 Health Indicators

Tables 2-2 and 2-3 present the performance of the health sector in India with reference to the NHP 2017 targets and SDGs respectively.

Table 2-2: Current Status of NHP 2017 Targets

NHP 2017	Target Value	Target Year	Status (Year of achievement)
Increase Life Expectancy at birth (years)	70	2025	69.46 (2018)[10]
Reduce TFR per woman	2.1	2025	2.2 (2018)[11]
Reduce Under Five Mortality per 1,000 live births	23	2025	36 (2018)[12]
Reduce MMR (maternal deaths per 1,00,000 live births)	100	2020	113 (2016-2018)[13]
Reduce IMR per 1,000 live births	28	2019	32 (2018)[14]
Reduce neo-natal mortality per 1,000 live births	16	2025	23 (2018)[15]
Reduce still birth rate per 1,000 live and still births	<10	2025	4 (2018) [16]
Reduce HIV detection, diagnosis and viral suppression	90%	2020	HIV detection – 79% of people living with HIV knew their status (2017)[17] Treatment - 56% of people living with HIV were on treatment (2017)[18]
Elimination status of Leprosy	100%	2018	81.13% (2018)[19]
Elimination status of Kala-Azar	100%	2017	92% (2018)[20]
Reduce incidences of new cases of TB		2025	Incidence Rate reduced from 217 in 2015 to 199 in 2018 (per Lakh population)[21]
Reduce the prevalence of blindness	0.25/1000	2025	0.36% (2019)
Reduce premature mortality from cardiovascular diseases, cancer, diabetes or chronic respiratory diseases	By 25%	2025	Reduction in premature mortality is 11% from 2012 to 2016[22]
Sustain antenatal care coverage above 90% and skilled attendance at birth above 90%		2025	96.1% PW are ANC registered (2018-19) 73% of ANC registered PW received 4 ANC check-ups (2018-19)

[10] World bank data, last retrieved September 09, 2019 ;

[11] Sample Registration System, 2019; Rural - 2.4 Urban - 1.7

[12] Sample Registration System, 2019; Rural - 40 Urban - 26

[13] Sample Registration System- MMR Bulletin, 2020;

[14] Sample Registration System, 2020; Rural - 36 Urban - 23

[15] Sample Registration System, 2019; Rural – 27 Urban- 14

[16] Sample Registration System, 2019; Rural – 4 Urban – 4

[17] UNAIDS, 2018; last retrieved on September 10, 2019

[18] UNAIDS, 2018; last retrieved on September 10, 2019

[19] Annual Report, Ministry of Health and Family Welfare 2018-19

[20] Annual Report, Ministry of Health and Family Welfare 2018-19

[21] WHO Tuberculosis Country Profiles, 2019

[22] WHO NCD Profile, last retrieved on September 10, 2019

Chapter 2: Sectoral Analysis

NHP 2017	Target Value	Target Year	Status (Year of achievement)
Increase health expenditure by Government as a percentage of GDP	From 1.15% to 2.5 %	2025	~1.6% (2019-20)[23]
Decrease in proportion of households facing catastrophic health expenditure from the current levels	By 25%	2025	24.9 (2014)

Table 2-3: Current Status of Health-related SDG Targets: Indian Overview

SDG 3 Global Target	Target Value For 2030	Status (Year of achievement)
Maternal Mortality Ratio (deaths per lakh live births)	70 per 100,000 live births	113 (2016-18)[24]
Proportion of births attended by skilled health personnel (%)	-	81.4 (2018)[25]
Under five mortality rate	25 per 100 live births	36 (2018)[26]
Neo- natal mortality rate	12 per 100 live births	23 (2018)[27]
New HIV Infections among adults 15-49 years old	0 per 1000 uninfected population	0.06 per 1000 uninfected population (2017)[28]
TB Incidence (per 100,000 population)	80% reduction in TB incidence compared with 2015 baseline	199 (2018)[29]
Malaria Incidence (per 1000 population)	90% reduction in malaria incidence compared with 2015 baseline	7.66 per 1000 population at risk (2017)[30] 23% reduction from 2015 to 2017.
Reported number of people requiring interventions against NTDs	0	15.4% (2017)[31]
Probability of dying from any of CVD, cancer, diabetes, CRD between age 30 and exact age 70	1/3rd reduction from 2012 baseline	23.3% (2017)[32]
Suicide mortality rate (per 100,000 population)	-	16.3 (2016)[33]
Total per capita alcohol consumption (>15 years of age), in liters of pure alcohol	10% reduction in harmful use of alcohol	5.7 (2016)[34]
Road traffic mortality rate (per 100,000 population)	50% reduction	23 (2016)[35]
Adolescent birth rate (per 1000 women aged 15-19 years)	-	13.17 (2017)[36]
Coverage of essential health services	100%	56.8% (2017)[37]

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[23] National Health Profile, 2019

[24] Sample Registration System- MMR Bulletin, 2020

[25] Worldbank; last retrieved on September 10, 2019;

[26] Sample Registration System, 2019; Rural - 40 Urban - 26

[27] Sample Registration System, 2019; Rural – 27 Urban- 14

[28] UNAIDS, 2018; last retrieved on September 10, 2019;

[29] WHO Tuberculosis Country Profiles, 2019;

[30] Worldbank; last retrieved on September 9, 2019;

[31] https://vizhub.healthdata.org/sdg/, last accessed on September 12, 2019;

[32] Worldbank; last retrieved on September 11, 2019;

[33] Worldbank; last retrieved on September 11, 2019;

[34] Worldbank; last retrieved on September 11, 2019;

[35] Worldbank; last retrieved on September 11, 2019;

[36] https://vizhub.healthdata.org/sdg/, last accessed on September 12, 2019;

[37] https://vizhub.healthdata.org/sdg/, last accessed on September 12, 2019;

SDG 3 Global Target	Target Value For 2030	Status (Year of achievement)
Financial Protection when using health services	% of households spending more than 10% on health	-
Mortality rate attributed to household and ambient air pollution (per 100,000 population)	-	184.3 (2016)[38]
Mortality rate attributed to exposure to unsafe WASH services (per 100,000 population)	-	18.6 (2016)[39]
Prevalence of tobacco use among persons 15 years and older (%)	30% reduction in current tobacco use	28.6% (2017)[40]
Proportion of the population with access to affordable medicines and vaccines on a sustainable basis	-	-
Skilled health professionals' density (physicians /nurses/midwives per 10000 population)	44.5	30.2 (2017)[41]

The life expectancy at birth has increased substantially over the last four decades. Infant mortality; under-5 mortality; maternal mortality; and disease burden for communicable, maternal, neo-natal, and nutritional diseases have also seen a steady reduction (SRS, 2019).

Further, the rate of reduction in some of the major indicators vis-à-vis global rates is presented in table 2-4. India has performed better than the global CAGR and the performance during the study period has been better than in previous years. Further, the desired rate to achieve the goal as per NHP 2017 is lower than the present rate thereby suggesting that the country is on its way to meet the target (except for IMR).

Table 2-4: Compounded annual rate of reduction of mortality rates- Global comparative

Indicator	Global CAGR[42]	India CAGR	Global CAGR	India CAGR	Desired CAGR[43]
	2005-2013		**2014-17**		
IMR	-3.6%	-4.5%	-2.9%	-5.4%	NA[44]
MMR	-3.2%	-6.0%	-2.0%	-6.74%	-4%
TFR	-0.5%	-2.9%	-0.4%	-1.5%	-0.6%
U5MR	-4.0%	-5.0%	-3.1%	-6.3%	-5.8%
NMR	-3.1 %	-3.7%	-2.4%	-4.4%	-4.4%

Source: World Bank Data, SRS Report 2018, EY Analysis

While the progress on the outcomes is good, there are also concerns around some of the parameters. Against the SDG target for 100% full immunization (BCG, Measles, and three doses of Pentavalent vaccine) of children aged 12-23 months, India reported 68% (NITI Aayog, 2018). Also, Disability-Adjusted Life Years (DALYs) from all causes (communicable and non-

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[38] Worldbank; last retrieved on September 11, 2019;

[39] Worldbank; last retrieved on September 11, 2019;

[40] http://cancerindia.org.in/wp-content/uploads/2018/09/GATS_2_India-Report.pdf; last retrieved on September 11, 2019;

[41] http://www.cbhidghs.nic.in/Ebook/National%20Health%20Profile-2018%20(e-Book)/files/assets/common/downloads/files/NHP%202018.pdf; last retrieved on September 11, 2019;

[42] CAGR= (final value/initial value)$^{1/n}$-1, where n = number of years.

[43] To achieve the NHP target (from 2017 data)

[44] Not applicable as the target was for 2019

Chapter 2: Sectoral Analysis

communicable diseases) remains high for India as compared to the international benchmark[45].

DALYs per 100,000 population-2017
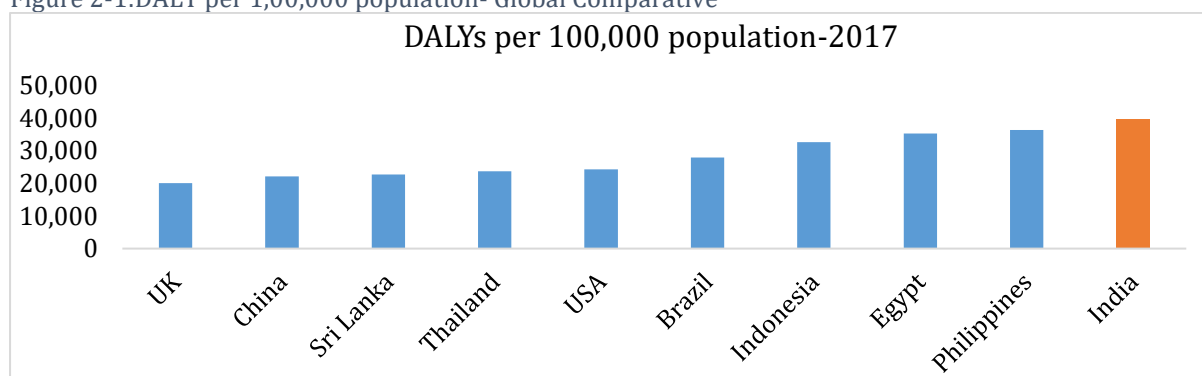
Source: IHME, Global Burden of Disease 2017

The break-up by disease categories is presented in table 2-5 below.

Table 2-5: India-level contribution of disease categories to DALYs, 1990 and 2016

Disease	Percent of DALYs, 1990	Percent of DALYs, 2016
Communicable, maternal, neonatal, and nutritional diseases	**60.9**	**32.7**
HIV/AIDS and tuberculosis	5.1	4.2
Diarrhea, lower respiratory, and other common infectious diseases	33.2	12.7
Neglected tropical diseases and malaria	2.1	1.5
Maternal disorders	1.4	0.6
Neonatal disorders	13.9	7.9
Nutritional deficiencies	3.8	4.6
Other communicable, maternal, neonatal, and nutritional diseases	1.5	1.1
Non-communicable diseases	**30.5**	**55.4**
Cancers	2.3	5.0
Cardiovascular diseases	6.9	14.1
Chronic respiratory diseases	4.5	6.4
Cirrhosis and other chronic liver diseases	0.9	1.6
Digestive diseases	1.3	1.5
Neurological disorders	2	3.6
Mental and substance use disorders	2.9	5.6
Diabetes, urogenital, blood, and endocrine diseases	2.6	5.6
Musculoskeletal disorders	2.3	4.6
Other non-communicable diseases	4.9	7.4
Injuries	**8.6**	**11.9**
Transport injuries	1.7	3.3
Unintentional injuries	4.6	5.4
Suicide and interpersonal violence	2.1	3.1
Other	0.1	0

Source: Disease Burden Trends in the States of India 1990-2016, ICMR

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[45] India was compared to that in select emerging economies (Brazil, China), high-SDI countries (USA, UK), South-East Asian countries (Thailand, Indonesia, Philippines) and low middle-income countries (Egypt and Sri Lanka).

Figure 2-2: Communicable Diseases Burden
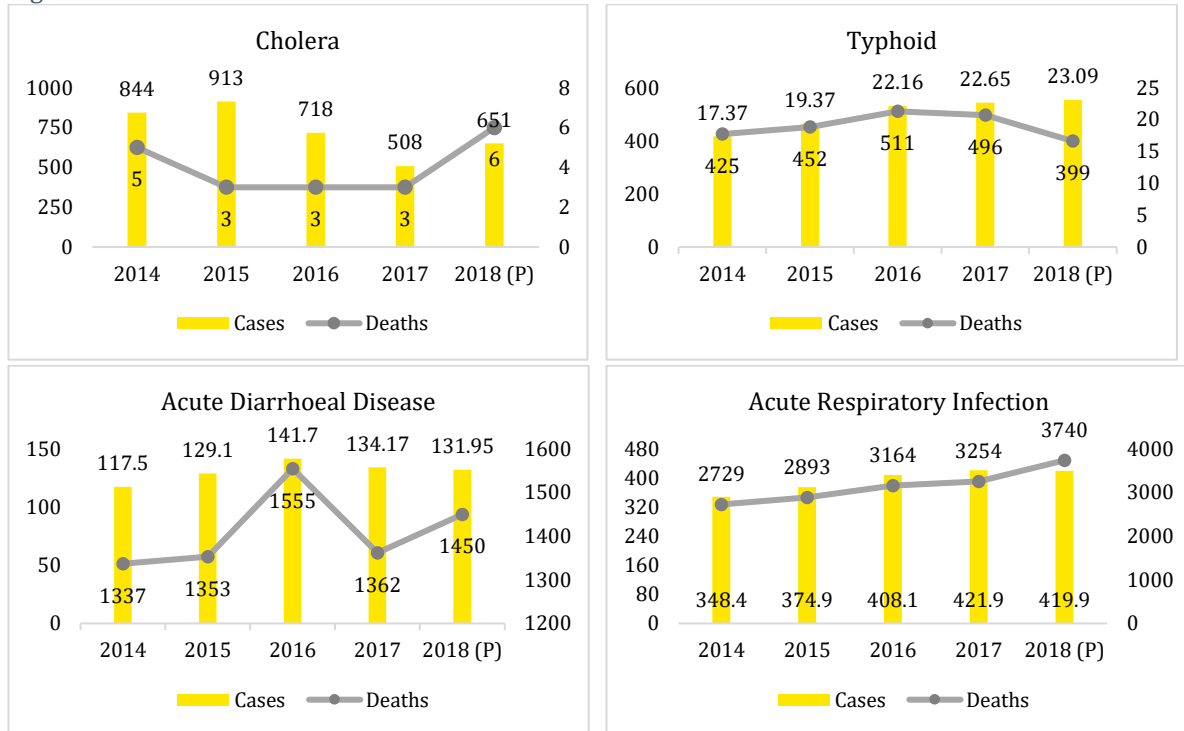
Source: National Health Profile 2015, 2016, 2017, 2018 and 2019

Key Findings

- The decline in IMR, MMR, U5MR, NMR, and TFR are promising and have moved closer to the targets set under the NHP-2017. Except for IMR, the desired rates of reduction for meeting the NHP 2017 goals are lesser than the present rates thereby implying that India is on its way to meet the target.

- The rate of decline has been higher as compared to the global average rate of decline. It may be said that CSS have contributed towards meeting the targets. Further, a complementary role has been played by other ministries like the Ministry of Drinking Water and Sanitation (ICDS, POSHAN, Pradhan Matri Mantru Vandana Yojana), Ministry of Women and Child Development (Swacch Bharat Mission - Kayakalp & Swachh Swasth Sarvatra), Ministry of Rural Developemen (Pradhan Mantri Gram Sadak Yojana) (refer Section 2.3).

2.2.2 Affordability

Affordability of healthcare is an important factor affecting universal health coverage. 7% of the Indian population fall below the poverty line due to indebtedness for health expenditure (Ravi, Aahluwalia, & Bergkvist, 2016)[46].

In 2016-2017, the out of pocket expenditure per capita over healthcare in India was INR 2,570 (Ministry of Health and Family Welfare, 2019). The average medical expenditure per hospitalisation case has reduced from 2014 to 2017-18 in public health facilities while it has increased in private hospitals as given in Figure 2-3. In the case of public hospitals, there is a considerable reduction in expenses on medicines (Rural 16%, Urban- 18%) and diagnostic tests (Rural -19%, Urban -22%) per hospitalisation case in 2018 compared to 2014. However, in same

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[46] The study period of the paper is from 2004-2014.

reference period, in the case of private sector, there is an increase in expenses on the diagnostic test (Rural 17%, Urban 6%) and medicines (Rural 10%) per case hospitalisation (NSSO-75, 2018); (NSSO-71, 2014)[47]. 51% of the households reported either decrease or no increase in OOPE on healthcare services during the last 5 years (EY Primary Analysis: Household Survey, 2019).

Further, the average medical expenditure for childbirth and for the OPD cases shows an increasing trend as given in Figure 2-4 and Figure 2-5 respectively.

Figure 2-3: Average medical expenditure per hospitalisation
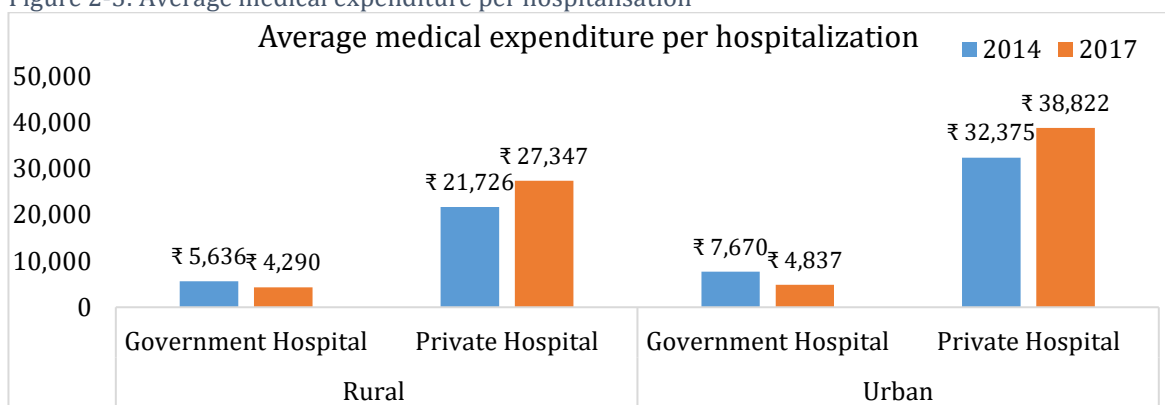
Source: Key Indicators of Social Consumption in India: Health NSS 75th Round, 2019

Figure 2-4: Average medical expenditure per childbirth
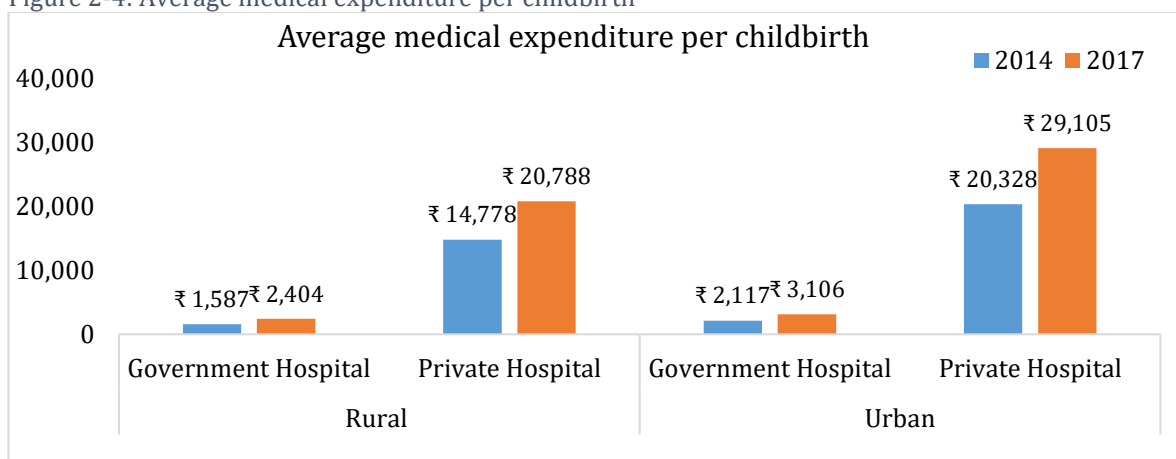
Source: Key Indicators of Social Consumption in India: Health NSS 75th Round, 2019

Figure 2-5: Average medical expenditure per non-hospitalisation case
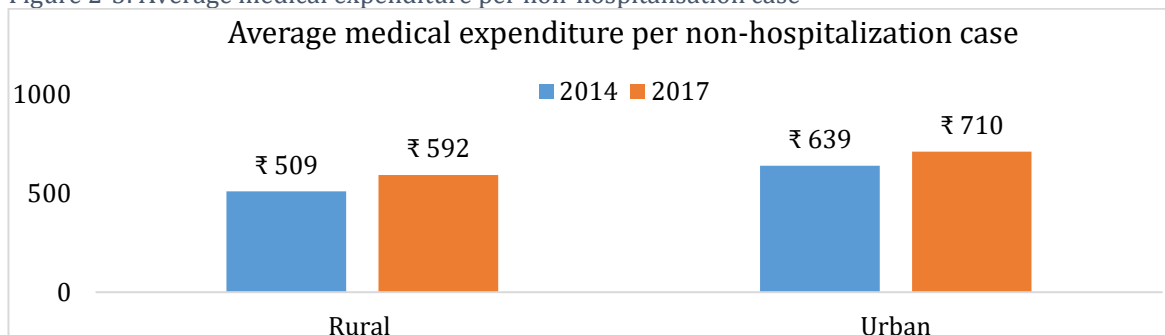
Source: Key Indicators of Social Consumption in India: Health NSS 75th Round, 2019

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[47] National Health Accounts reports OOPE on healthcare. While NSSO gives average medical and non medical expenditure which may include reimbursement amounts.

While the share of OOPE as % of total health expenditure in India is amongst the highest in the world, there has been monotonic reduction over the years (WHO, 2018); (National Health Accounts 2016-17, 2019).

Figure 2-6: Out of Pocket Expenditure

OOPE as % of Total Health Expenditure

69.40%
64.21%
62.58%
60.59%
58.70%

2004-05   2013-14   2014-15   2015-16   2016-17

Source: WHO, 2018; National Health Accounts 2016-17, 2019

To reduce OOPE burden, various programs have been implemented including those related to free drugs, free diagnostics, free dialysis, free transport services, and incentives under specific schemes to promote service utilization. The primary survey revealed that 61% of the households spent money at public health facilities (EY Primary Analysis: Household Survey, 2019).

Figure 2-7: Major expenditure heads at public health facilities[48]

Major expenditure heads at public health facilities

	Yes	No
Others	14%	86%
Referrals to…	58%	42%
Diagnostics	64%	36%
Food	60%	40%
Drugs	83%	17%
Transport	91%	8%

0%   50%   100%

■ Yes ■ No

Source: EY Primary Analysis: Household Survey, 2019

Payer consolidation

To ensure continuum of care, in 2018, Ayushman Bharat- Pradhan Mantri Jan Arogya Yojana was launched to provide free health coverage at the secondary and tertiary level to India's bottom 40% poor population. The scheme provides a health cover of Rs. 5 lakhs per family per year for hospitalization to over 10.74 crores eligible families (approximately 50 crore beneficiaries). More than 1 crore beneficiaries (till June 2020) have availed the services under this scheme.

PMJAY and other state insurance and assurance schemes mostly cover the lower income group of the population. A large portion of the population (non-poor or near poor) which includes those working in informal sector are missed out. These informal non-poor represent the "missing middle" that remains without financial protection and gets neglected (Kumar, 2019). There is a need to focus on this vulnerable section of the population as they are at the risk of falling into poverty due to catastrophic expenditure on healthcare.

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[48] A household may or may not have incurred expense under more than one head.

Chapter 2: Sectoral Analysis

Case Study 1 - Universal Health Insurance – Turkey

Introduction

Health Transformation Program (HTP) launched in 2003 aimed to increase access to health services. Health expenditures in 1990's was low in Turkey averaged ~3.8%of GDP and had an inequitable and fragmented health insurance system. Turkey also had the lowest number of doctors and nurses per capita leading to unequal delivery of health services and access to health facilities in rural and urban areas.

HTP expanded health insurance coverage and access to healthcare services for all citizens, especially the poorest population groups, to achieve universal health coverage. Under HTP, multiple health insurance schemes were integrated into a single purchaser. The coverage included in-patient treatment costs, outpatient services and outpatient prescription drugs. Health expenditure ranging from 4.5% to 5.8% of GDP since 2000 contributing significantly to the UHI (Sparkes & Reich, 2015).

Key Stakeholders

- Ministry of Health, Turkey
- Social Security Institution
- Employed citizens
- Registered hospitals and pharmacies

Implementation of the practice

- HTP included eliminating fragmentation in financing by merging the then five health insurance schemes (including the Green Card Program) into Universal Health Insurance (UHI) scheme. The new scheme was managed by newly created institution SSI – Social Security Institution (Tirgil, Ipek, & Atun, 2018).
- Turkey created a single purchaser model through which the Social Security institution assumed full responsibility for all health financing functions, including collecting revenues, pooling resources and expenditures and purchasing relevant goods and services.
- The coverage included in-patient treatment costs, outpatient services, outpatient prescription drugs.
- The public sector doctors were given responsibilities to provide healthcare for a population in a defined area and incentivised accordingly based on beneficiaries' feedback
- For the provision of primary and preventive care on priority basis, the remuneration of the doctors is based on the population covered
- The government of Turkey strongly discouraged public sector doctors to go for private practice
- Adoption of Universal Health Insurance Law, 2008
- The adoption of the Social Security and Universal Health Insurance Law in 2008 created the legal and institutional basis for a fully harmonized health insurance system (UHI)
- Execution of a single Health Implementation Guide, published annually

- Key developments in the HTP

2002-2006	• Focus on improving access to health services • Health Transformation Program (HTP) is designed, building on work done in the previous decade, including elements of the Basic Health Law • Introduction of higher salaries and performance incentives for hospital clinicians to encourage a voluntary transition from dual practice to full-time working • Green Card benefits expanded to include outpatient benefits and pharmaceuticals. Conditional cash transfers were introduced, covering 6% of the population (for pregnant women and children from the most disadvantaged households), to encourage the use of maternal, neonatal, and child health services • Contract-based employment introduced for healthcare personnel in rural and less developed regions • Major changes in pharmaceutical policy, including changes to pricing and value-added tax • Hospitals belonging to the Social Insurance Organisation integrated with the Ministry of Health hospitals • Universal health insurance is legally adopted as a part of broader social security reforms
2007-2010	• Contract-based family medicine scaled up in all provinces of Turkey • Cost-sharing for primary health-care services was abolished. Primary health care available for all citizens free at the point of delivery. • Social Security Institution established as a single organization for financial pooling and purchasing • Free availability of emergency services and intensive care services (including neonatal intensive care) for the whole population • Mobile pharmacy services introduced to improve access in rural areas • Tracking system for drugs introduced
2011-2013	• The Green Card scheme joins the Social Security Institution and unified social health insurance is fully implemented • The Ministry of Health strategic plan for 2013–17 is developed

Results of practice

- Key improvements in health indicators in the decade since implementation:

Indicator	Before Implement of program	Results after short span
Life Expectancy	71 (2000)	75 (2009)
Infant Mortality	36 (2000)	9.6 (2011)
Under 5 Mortality	42 (2000)	12.5 (2011)

- Formal health coverage of Turkish population increased by 95% in the period 2000-2015.
- Significant improvement in health coverage for the poor in Turkey.
- Gradual steps taken in this regard, helped in improved targeting, expand benefits to the Green Card Program, including the improvement in the quality of service delivery within a comprehensive reform in the sector. The patient satisfaction improved from 39.5% in 2000 to 75.9% in 2011 (TurkStat - Life Satisfaction Survey, 2011).

Chapter 2: Sectoral Analysis

> **Lessons learnt**
>
> The success story of Turkey can be attributed to the following factors:
> - Legislation like Social Security and Universal Health Insurance Law in 2008 that ensured UHC
> - Proactive role of the Government
> - Importance had been given to given to primary health care
> - Importance of patients' satisfaction
>
> **Conclusion**
> - Health expenditure as a % of GDP plays a critical role in achieving the goal of UHC. Health expenditure in Turkey ranges from 4.5% to 5.8% of GDP since 2000 contributing significantly to the UHI (Sparkes & Reich, 2015)
> - UHI implementation has led to the elimination of major sources of fragmentation of public health delivery system and has reduced the inequality in access to and utilisation of services across the nation.
>
> **Further reading**
> Successful Health System Reforms: The case of Turkey
> Tirgil, A., Gurol-Urganci, I., & Atun, R. (2018). Early experience of universal health coverage in Turkey on access to health services for the poor: regression kink design analysis. Journal of global health, 8(2).

Key Findings:

> - OOPE as a % of healthcare expenditure has reduced monotonically since 2004-05. During the study period average health expenditure in government facilities per hospitalisation reduced.
>
> - 51% of the households reported either decrease or no increase in OOPE on healthcare services during the last five years (EY Primary Analysis: Household Survey, 2019).
>
> - 61% of the households spent money at public health facilities (EY Primary Analysis: Household Survey, 2019).

2.2.3   Equity and Social Inclusion

The equity and social inclusion has been discussed with respect to: a) urban and rural divide, b) castes and tribal areas, c) income quintiles, d) gender, and e) EAG and non-EAG.

a. *Urban and rural divide:* Significant divide is observed between urban and rural populations in accessing the Government/Public Hospitals, both for OPD and IPD. The shortfall in doctors at PHCs is 16.7% in urban areas while only 5.9% in rural areas, and the shortfall in specialists at CHCs is 45.8% in urban areas and 81.8% in rural areas (Rural Health Statistics, 2019).

b. *Castes and Tribal areas:* While significant progress has been made through the NHM budget is spent under Schedule Caste Sub-Plan (SCSP) and Tribal Sub-Plan (TSP)[49], the health outcomes for schedule caste and schedule tribes leave much to be desired. The risks of mortality before the age of five years are higher in girls than in boys; among SCs & STs as compared to others (National Family Health Survey-4, 2016).

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[49] There has been significant growth in budget allocation during the study period.

Studies suggest poorer health indicators for tribal people than the rest of the population (Ministry of Health and Family Welfare and Ministry of Tribal Affairs, 2018). Life expectancy at birth for scheduled tribe population in India is 63.9 years as against 67 years for the general population (Ministry of Health and Family Welfare and Ministry of Tribal Affairs, 2018). The risks of mortality before the age of five years are higher in girls than in boys; among SCs, STs and OBCs as compared to others (NFHS-4, 2016).

Sharp regional and socio-economic divides in health outcomes, with the lower castes, the poor, and the less developed states bearing the burden of mortality disproportionately have been observed. These inequities are also accompanied by wide gaps across castes (NFHS-4). Rural Health Statistics reveal huge gaps due to geographical challenges in health infrastructure and resources in tribal areas (RHS, 2019).

Figure 2-8 : Allocation under SCSP and TSP (in Crore) in respect of major health schemes/programs
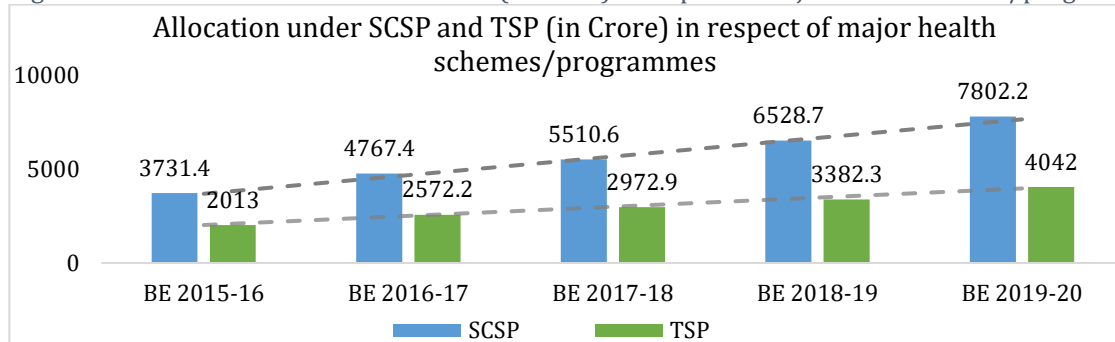
Source: MoHFW Annual Report 2015-16, 2016-17, 2017-18, 2019-20

The tribal population of North-East India comprises of one-eighth of the total tribal population (Ministry of Health and Family Welfare and Ministry of Tribal Affairs, 2018). It has been observed that though the nutritional status of these communities is much better than that of the tribal population in the rest of the country, the disease burden among the tribal communities in the north-east is high (Ministry of Health and Family Welfare and Ministry of Tribal Affairs, 2018).

c. *Income quintiles:* The average medical expenditure per hospitalization between 2014 and 2017 for various income groups (by quintiles) has changed inequitably both for urban and rural areas. The percentage change presented in Figure 2-9 is based on constant prices with 2014 as the base. The reduction has been higher for the highest quantile while there has been relatively high increase for the middle class (2nd and 3rd quintiles).

Figure 2-9: Change in average medical expenditure by income quintiles
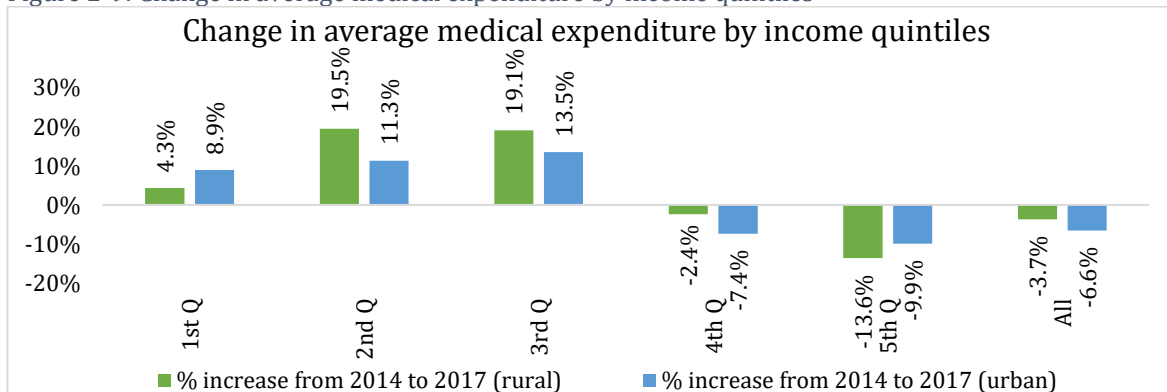
Source: Key Indicators of Social Consumption in India: Health NSSO 75th Round, 2019

Chapter 2: Sectoral Analysis

d. *Gender:* Sex ratio in the country has improved in India from 943 to 949 in rural areas and from 900 to 929 in urban areas between 2001- 2011 (Census, 2011). However, sex ratio at birth has shown a declining trend in the study period. It decreased from 906 in 2012-14 to 899 in 2016-18 (SRS Reports 2014 and 2018).

Family planning methods are largely targeted towards women. The proportion of male sterilisation (vasectomies) to total sterilisation was only 1.8% while for females the proportion was 98.2% (HMIS, 2019).

Health including food security and nutrition is a priority in National Policy for Women, 2016. Maternal and peri-natal mortality have been given priority and the government is focusing on building the capacity of ASHAs, Anganwadi workers and trained skilled home birth professionals (Ministry of Women and Child Development, 2016).

Researchers have found that due to the continued prevalence of patriarchal dominance in the rural apparatus of Indian society, voluntary involvement of women in health committees has been difficult (Scott, et al., 2017). Hence, despite the noticeable initiatives taken by the Government in mainstreaming women in the healthcare system in India, certain gaps still exist.

e. *EAG States and Non EAG States:* Sharp regional and socio-economic divides in health outcomes, with the lower castes, the poor, and the less developed States disproportionately bearing the burden of mortality have been observed.

% of DALYs due to communicable, maternal, neonatal and nutritional diseases is highest in EAG States (ICMR, PHFI and IHME, 2017). However, number per 1000 persons treated as in-patients (excluding hospitalization for childbirth) during a period of 365 days, remains low for EAG states(Figure 2-10). With high disease burden the average in-patient treatments in the EAG states remains low as compared to the non-EAG and NE States. This may be attributed to low public awareness; and poor availability and accessibility of healthcare services. For eg. The average time taken to reach a public health facility and the average distance to reach nearest public facility for EAG states collectively was found to be higher than the non-EAG states collectively (EY Primary Analysis: Household Survey, 2019). The lowest availability for doctors was reported in Bihar while lowest availability of nurses was reported in Odisha (EY Primary Analyis : Facility Survey, 2019)

Figure 2-10 : Number per 1000 persons treated as inpatients (EAG versus other states)
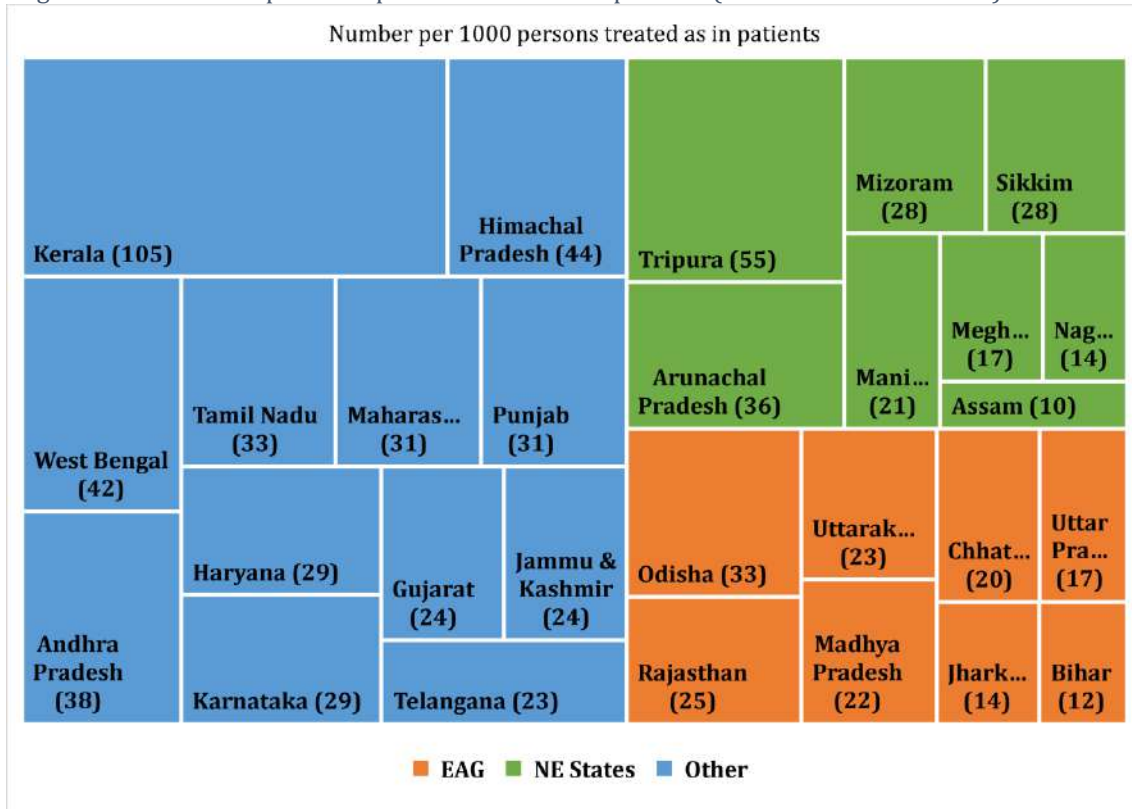
Source: NSSO-75, 2018

The 'Transformation of Aspirational Districts' Program aims to improve the socio-economic status of most underserved 117 districts in the country by focusing on Health & Nutrition, Education, Agriculture & Water Resources, Financial Inclusion & Skill Development, and Basic Infrastructure (NITI Aayog, 2018).

Key Findings:

While there has been a noticeable effort made on ensuring equity and social inclusion, there is still a lot desired across the spectrum.

2.2.4   Coverage and Accessibility

India ranks 145th amongst 195 countries in the Healthcare Access and Quality (HAQ) Index (Fullman et al., 2018). India performed poorly in tackling cases of tuberculosis, rheumatic heart diseases, Ischaemic heart diseases, stroke, testicular cancer, colon cancer and chronic kidney disease among others (Fullman et al., 2018).

Coverage and Accessibility have discussed on various parameters :

a. Distance   b. Time
c. MMUs, Telemedicine, and transport facilities   d. ICT
e. Infrastructure   f. Human Resources

a. Distance:

The status of population coverage and the number of facilities as per national norms has almost been achieved.

Chapter 2: Sectoral Analysis

Table 2-6: Status of accessibility of public health facilities

Indicator	National Norms		Status -2019	
Rural Population (Census, 2011) covered by a:	**General**	**Tribal/Hilly / Desert**	**General**	**Tribal/Hilly/ Desert**
Sub Centre (SC)	5,000	3,000	5,616	3,394
Primary Health Centre (PHC)	30,000	20,000	35,567	23,115
Community Health Centre (CHC)	1,20,000	80,000	1,65,702	95,243
Number of Sub-Centres per PHC		6	6	7
Number of PHCs per CHC		4	5	4

Table 2-7: Average area and distance covered by primary healthcare facilities

Average Rural Area (Sq. Km) covered by a:	Rural Area (Sq. Km)	Tribal Area (Sq. Km)
Sub-Centre	18.98	17.10
PHC	120.19	116.46
CHC	559.96	479.84
Average Radial Distance (Kms) covered by a	**Rural Area**	**Tribal Area**
Sub-Centre	2.46	2.33
PHC	6.18	6.09
CHC	13.35	12.36

Source: Rural Health Statistics, 2019

Odisha and West Bengal were the states with the highest distance to the government health facility, with 8.1 km & 7.5 km respectively (EY Primary Analysis: Household Survey, 2019).

Figure 2-11: Average distance to the government health facility (in km) – Geographical Distribution
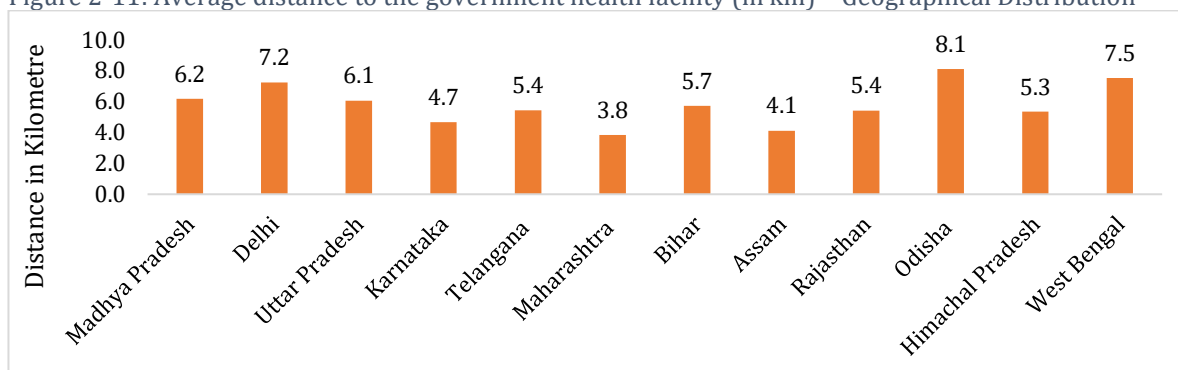
Source: EY Primary Analysis: Household Survey, 2019

In 2018-19, the percentage of SCs and PHCs functioning without all-weather motorable approachable road were 11.5% and 8.2% respectively (Rural Health Statistics, 2019). The primary survey also revealed that ~10% public health facilities were not connected with a motorable road (EY Primary Analysis: Facility Survey, 2019). The average distance travelled to reach Government facilities has been found to be 5.80 km in rural areas and 2.77 km in urban areas (EY Primary Analysis: Household Survey, 2019). It can be inferred that SC is not serving as the first port of call for various reasons including limited services (RCH) and lack of optimally functioning facilities (functioning without regular water supply and electricity) as in Figure 2-12.

Figure 2-12 : Service Status of public health facilities
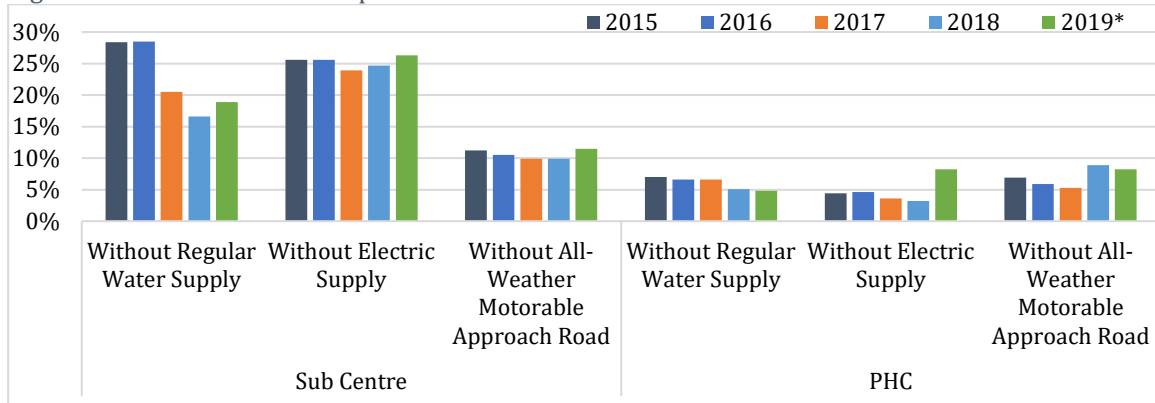
*reporting for 2019 is done only for facilities in rural areas, for previous years it is together for both urban and rural health facilities
Source: Rural Health Statistics: 2015,2016,2017,2018,2019

b. Time:

Average time taken in rural areas was observed to be ~25 minutes while that in urban areas was ~20 minutes (EY Primary Analysis: Household Survey, 2019). Road accident and cardiac arrest victims' survival rate is lower because of failure in providing golden hour treatment. It has also been observed that the ambulances do not adhere to the standard response times of 20 minutes and 40 minutes of urban and rural calls (Ralph, et al., 2019). Bihar and Delhi were the states with the highest average time taken to reach the government facility, with ~35 minutes & ~30 minutes respectively (EY Primary Analysis: Household Survey, 2019).

Figure 2-13: Average time taken to reach the government facility (in mins) – Geographical Distribution
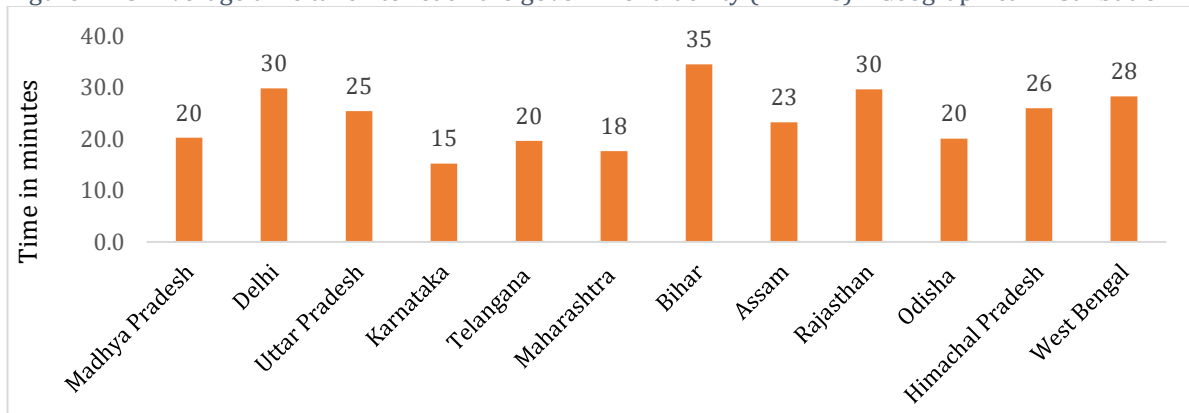
Source: EY Primary Analysis: Household Survey, 2019

c. MMUs and transport facilities:

Mobile Medical Units (MMUs) under NHM is a strategy to increase the access of public healthcare to people living in remote, difficult, under-served, and unreached areas. As of 31st March 2020, there were 1,669 operational MMUs in the country (NHM Quarterly MIS Report: March 2020). The deployment of MMUs is based on a population norm of 1 MMU per 10 lakh population subject to a cap of 5 MMUs per district. Figure 2-14 shows the number of MMUs operational in larger states of the country against the required number as per population criteria.

Figure 2-14: MMUs operational in larger states against the required number as per population criteria

Chapter 2: Sectoral Analysis
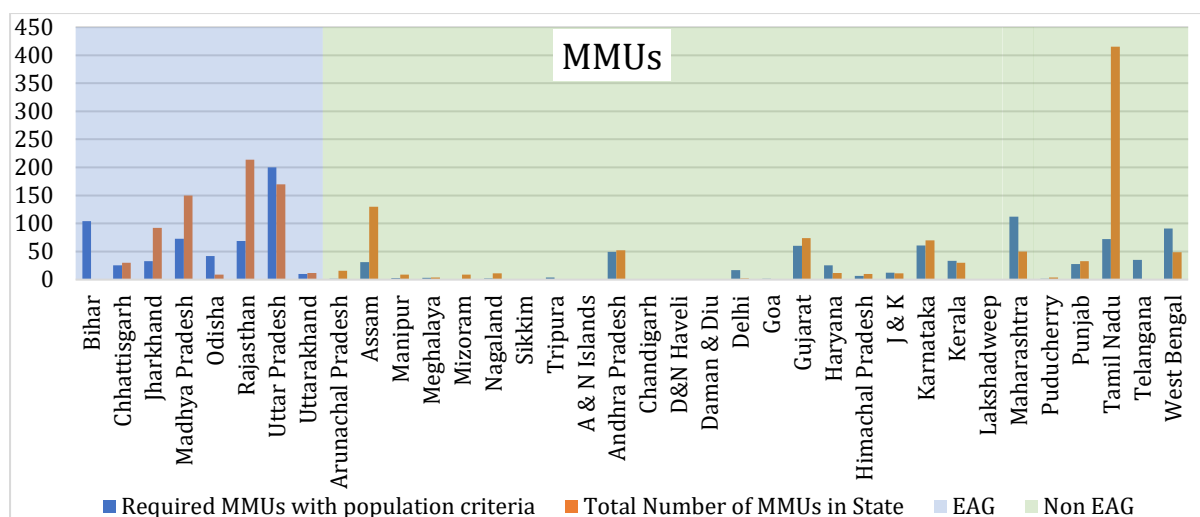
Source: NHM Quarterly MIS Report: March 2020; Projected population for 2019 from National Health Profile-2019

While some states like Jharkhand, Madhya Pradesh, Gujarat and Tamil Nadu have more than the required number of MMUs (as per population criteria), in states like West Bengal, Uttar Pradesh and Maharashtra deployment is found to be sub-optimal as per the population norms. States like Bihar, Telangana, Sikkim, Tripura and a few UTs do not have any MMUs deployed (NHM Quarterly MIS Report: March 2020).

Further, transport facilities under 102 and 108 have added to the accessibility. As of 31st March 2020, there were 10,147 102-ambulances and 10,238 108-ambulances operational in the country (NHM Quarterly MIS Report: March 2020). According to the operational guidelines, there should be one 108-ambulance and one 102-ambulance per 1 lakh population.

Figure 2-15 and Figure 2-16 shows the number of 108s and 102s operational in larger states of the country respectively against the required number as per population criteria.

Figure 2-15: 108-ambulances operational in larger states against the required number as per population criteria
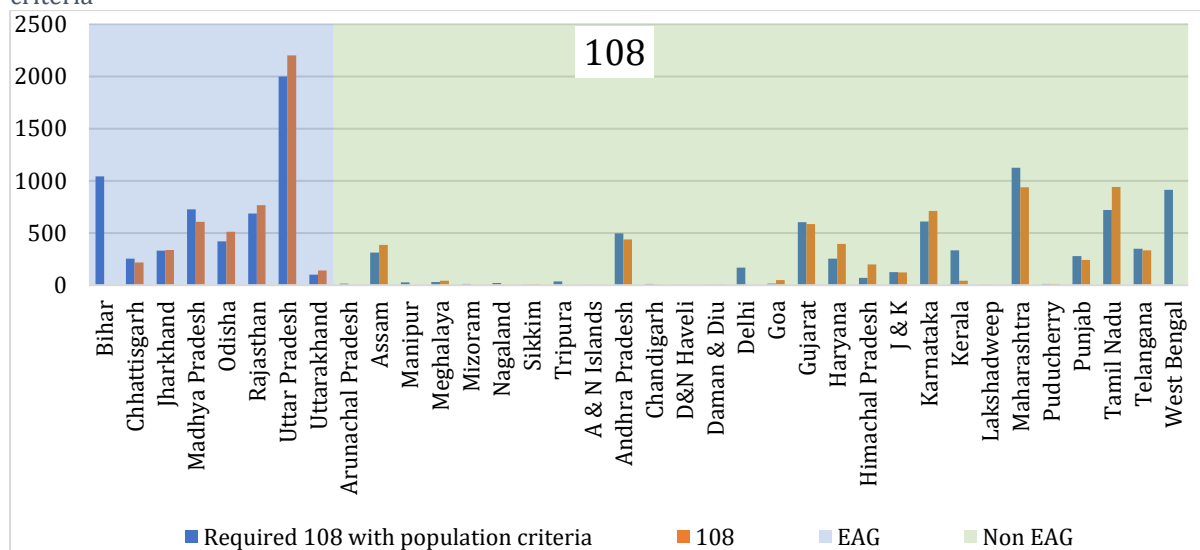
Source: NHM Quarterly MIS Report: March 2020; Projected population for 2019 from National Health Profile-2019

It has been observed that most states have optimal deployment of ERS ambulances -108 and 102 as per the required population norms with a few exceptions.

Figure 2-16: 102 ambulances operational in larger states against the required number as per population criteria
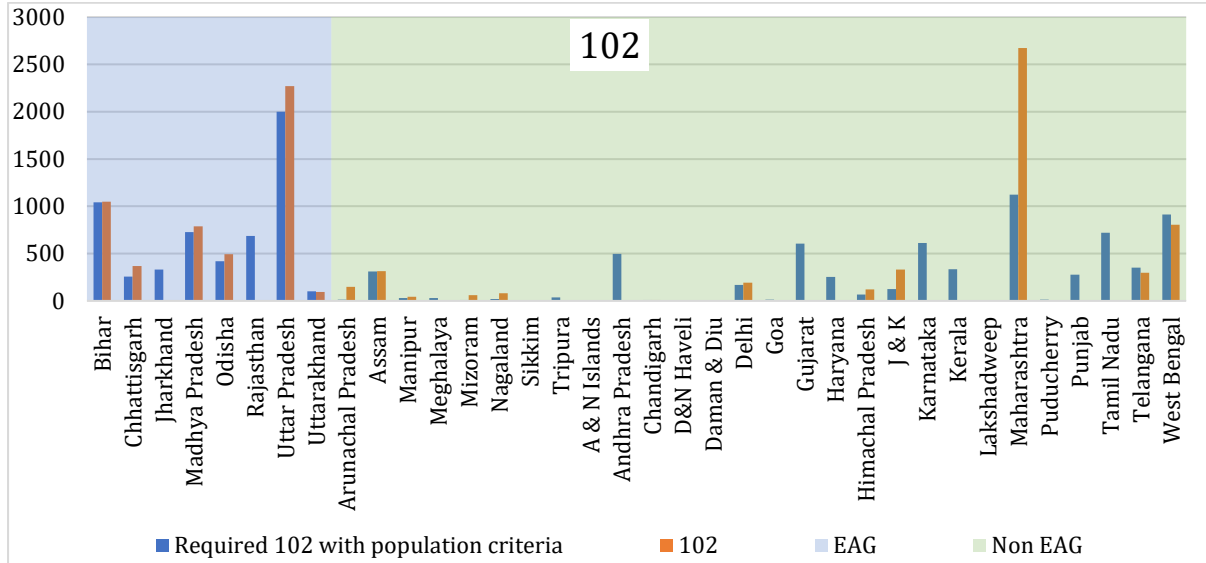
Source: NHM Quarterly MIS Report: March 2020; Projected population for 2019 from National Health Profile-2019

d. ICT:

ICT innovations are being used to promote telehealth solutions to deliver basic and specialized health care services nearest to the end-user in inaccessible and rural areas. National Telemedicine Network, SATCOM based telemedicine nodes, and National Medical College Network are the key initiatives of the Government (Ministry of Health and Family Welfare, 2019). Data reporting tools such as HMIS have been further discussed in sections 2.2.8 and 3.2.4.

e. Infrastructure

- *Health Facilities*

There has been a substantial increase in health infrastructure since the centrally sponsored schemes were launched. Although, the country has witnessed 41% more SCs, 18% more PHCs, and 7% more CHCs functioning in government buildings, the concern of slow pace of construction remains (Ministry of Health and Family Welfare, 2017) (11th CRM , 2017). Further, lack of specialists has also led to an inverse load on the health system.

Figure 2-17 : Government Beds per 1000 Population in India
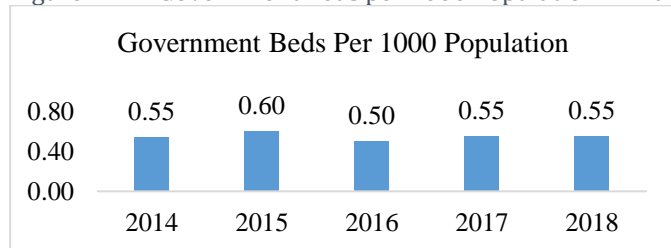
Source: National Health Profile 2015, 2016, 2017, 2018, 2019

As of 31st March 2019, 3,204 FRUs are functioning in the country. Approximately 4-6 FRUs will be needed for 20 Lakh population, for an "on time to care" approach. Out of all the PHCs and CHCs (35,960) only 8.95% facilities are functioning as FRUs.

Chapter 2: Sectoral Analysis

Figure 2-18: Increase in FRUs and 24×7 Facilities
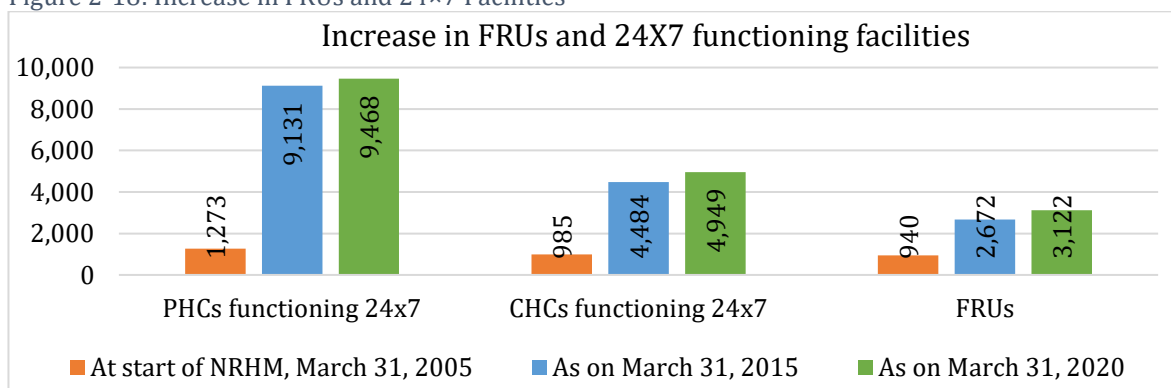
Source: NHM Quarterly MIS Report: March 2015, March 2020; Rural Health Statistics, 2019; MoHFW, 2020

From Figure 2-18 above it can be inferred that- all CHCs are required to be 24×7 functioning facilities, but still 12.7% CHCs are not functioning 24×7 (RHS, 2019). A few reasons attributing to non-functioning of all CHCs as 24×7 were reported as lack of specialist and blood storage facilities (EY Primary Data Analysis: KII, 2019). While for PHCs, out of 30,045 PHCs only 9,445 PHCs (31.43%) are functioning as 24×7 (RHS, 2019).

The new Ayushman Bharat-Health and Wellness Centres aims to address the increasing burden of diseases like NCDs (hypertension, diabetes and cancer etc.) along with the services which aim at providing screening and preventive care.

AB-HWC program strives towards comprehensive primary healthcare through transformation of existing 1,50,000 Sub- Health-Centers (SHCs), Primary Health Centers (PHCs) and Urban Primary Health Centers (UPHCs) to AB-HWCs by 2022.

The expansion of services has been planned in an incremental manner. The services envisaged under AB-HWCs are:

1. Care in pregnancy and childbrith
2. Neonatal and infant health care services
3. Childhood and adolescent health care services
4. Family planning, Contraceptive services and Other Reproductive Health Care services
5. Management of Communicable diseases: National Health Programs
6. Management of Common Communicable Diseases and General Out-patient care for acute simple illnesses and minor ailments
7. Screening, Prevention, Control and Management of Non-Communicable diseases and chronic communicable disease like TB and Leprosy
8. Basic Oral health care
9. Care for Common Ophthalmic and ENT problems
10. Elderly and Palliative health care services
11. Emergency Medical Services
12. Screening and Basic management of Mental health ailment

As on July 01, 2020 total of 40,890 HWCs have been created in the country, out of which 21,152 are SHC-HWC, 16,423 are PHC-HWC and 3,315 are UPHC-HWC[50]. It was observed that only 59% HWCs had a designated area for wellness activities and 73% HWCs had started to provide diagnostic services (EY Primary Analysis: Facility Survey, 2019).

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[50] https://ab-hwc.nhp.gov.in/ ; last accessed on 1 July 2020

- *Drugs, Diagnostics and Medical Equipment*

Considering the challenges with respect to optimal availability of drugs and diagnostic services at the health facilities, initiatives like free drugs and diagnostics were rolled out in 2013. Further, only 8% people (out of 1610 respondents) had to get their tests done outside the health facility, which shows that the free diagnostic initiative has a significant impact on public health (EY Primary Analysis: Household Survey, 2019). Detailed performance of free drugs and diagnostic is discussed under section 3.2.8.

f. Human Resources

The sector has done well to keep pace with the increasing requirements of human resources in public health facilities except for substantial shortfall of specialists (~80%) at CHCs and Health Assistant Male Workers (~60%) at PHCs. Further, a shortage in the Mid-level health providers (between doctors and ANM) has been observed. Also, the specialization for CHOs and other mid-level health providers is usually not in public health (IIPH & IIM-A, 2020).

In India, there are 0.91 doctors available for 1000 population, which is low as compared to the WHO recommendation of 1:1000 doctor-population ratio[51] (MoHFW, 2020). While, we are moving away from just 1:1000 norm of doctor: population ratio, there is a need to emphasize on the 44.5:10,000 norms of health care workforce: population ratio as achieving health care outcomes involves a multi-disciplinary approach. One of the factors for it has been the case of maldistribution in India, with dense concentration of workforce in urban areas and limited concentration in rural areas causing challenges of inequity and inaccessibility of services (MoHFW, 2020). India has a shortage of 6,00,000 doctors and 2 million nurses (Centre for Disease Dynamics, Economics and Policy , 2019).

Figure 2-19 : Doctors per 1000 population
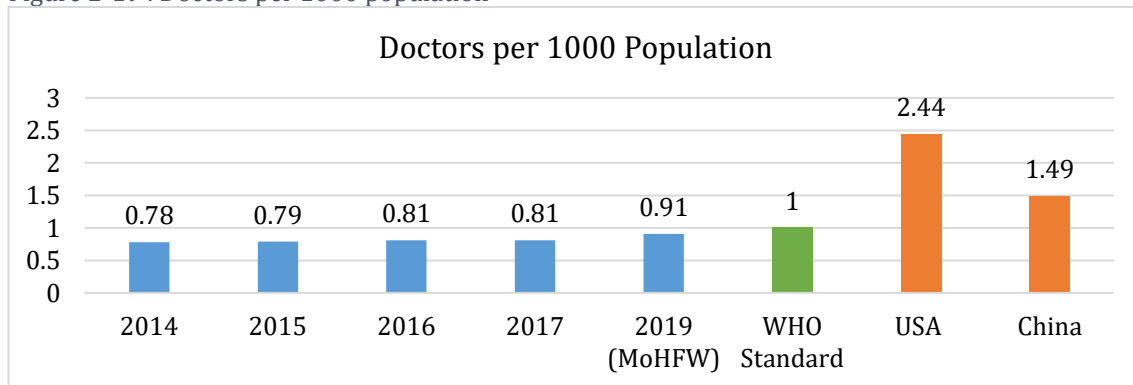
Source: National Health Profile 2018, MoHFW 2020

Lack of specialists has also led to an inverse load on the health system.

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[51] If AYUSH practitioners are also considered a part of the doctors' workforce, the desired threshold of 1 doctor per 1000 will be achieved (1.29 per 1000 population)

Chapter 2: Sectoral Analysis

Figure 2-20 : Shortage of Specialists in CHCs

Shortage of Specialists at CHC

	Surgeons	OB/GYN	Physicians	Paediatricians
2015	4,500	4,115	4,479	4,432
2016	4,626	4,225	4,585	4,416
2017	4,866	4,170	4,760	4,554
2018	4,757	4,200	4,821	4,646
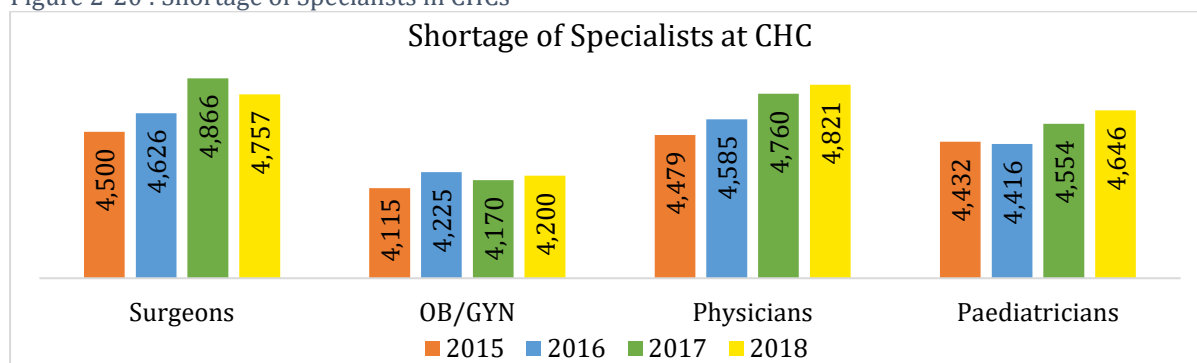
Source: Rural Health Statistics 2015-16, 2-16-17, 2017-18

CHCs face scarcity of specialists like surgeons, obstetricians/gynecologists, physicians, and paediatricians (RHS, 2018).

It is important to point out that the shortfall observed is also accentuated due to increase in the number of facilities (resulting in the requirement of more human resources). A national policy for Human Resources in Health is under discussion in the Ministry to overcome the challenges of shortfall and rational deployment of health workforce is concerned. The deployment of specialists and technical staff in administrative work may need to be managed/ addressed locally.

Case Study 2 – HR Strategies adopted in Bijapur, Chhattisgarh

Introduction

The district of Bijapur in Chhattisgarh has more than 70% tribal population with deprived basic healthcare facilities due to a shortage of doctors and allied healthcare staff, and healthcare infrastructure. Most of the deliveries till July 2016 were non-institutional due to sudden bandhs, blocked roads etc. With a revamp of the health system in the district, conditions have drastically improved and percentage vacancy of health workforce has changed from almost 100% to less than 40-50% within 2-3 years. Many tribal women have also been opting for institutional deliveries with well-equipped district hospitals, round-the-clock availability of gynaecologists, paediatricians and nurses.

Implementation of the practice

- The vision to provide comprehensive health improvement of tribal population in the district was started with the available local funds.
- The project was a joint effort by the Directorate of Health Services (DHS), Govt of Chhattisgarh (GoCG) in collaboration with UNICEF and Public Health Foundation of India (PHFI) and the main agenda was to attract and retain specialised Human Resources (HR) for health in districts of Chhattisgarh.
- Filling of vacant posts of the health workforce to meet the shortage was targeted and hiring fresh medical graduates on contract and paying them a high salary to serve in remote areas was promoted.
- Lucrative salaries and packages were offered to fill the shortage of specialist doctors and medical officers.
- The district utilises the corpus of INR 40 Crores per annum to cater to the health needs.
- The administration trained the tribal women to become ASHA workers to participate in health system strengthening.

- Provisions of incentives like jobs for spouse, education for children were the key initiatives taken to support the health workforce.

Results of practice – outputs and outcomes

- Vacancy of health workforce has reduced drastically.

	2016-17		2017-18	
	Sanctioned	Posted	Sanctioned	Posted
Doctors				
Doctors (MBBS)	44	15	33	30
Specialist	40	1	84	44
Allied Healthcare Staff				
Staff Nurse	114	16	114	108
Pharmacist	21	10	21	14
Lab Technician	30	7	30	15
ANM	176	111	176	150
MPW	92	21	92	40

- Institutional deliveries increased to an average of more than 100 institutional deliveries per month at public health facilities.
- Involvement of tribal communities in healthcare delivery has increased.
- Health indicators have improved in the district.

Lessons learnt

- With the right strategies and actions, improving health services is possible even in remote and difficult areas.
- Provisions like jobs for spouse, education for children etc., can help in attracting a health workforce even in difficult areas.

Conclusion

Retaining doctors and paramedics in the Naxal affected belt and other difficult to reach areas, addressing the shortage of human resource in healthcare with minimum cost has been a public health contribution.

Further Readings

Outsourcing of Recruitment and Management of Human Resources for Remote and Conflict areas in Chhattisgarh: A Case Study

Key Findings

- Accessibility and coverage of healthcare facilities have improved in terms of the creation of physical infrastructure, road connectivity, transportation etc. However, lack of optimal availability of human resources and reliable services lead to broken linkages of car pathways

- Average distance to government facilities has been found to be 5.8 km in rural areas and 2.7 km in urban areas (EY Primary Analysis: Household Survey, 2019).

- Average time taken in rural areas was observed to be ~25 minutes while that in urban areas was ~20 minutes (EY Primary Analysis: Household Survey, 2019).

- With the increased accessibility and limited availability of healthcare professionals especially specialists, there may be a need to study the linkage of SC, PHC, CHC, and DH to arrive at an optimal configuration.

Chapter 2: Sectoral Analysis

2.2.5 Quality and Hygiene

To maintain the quality of healthcare delivery in India, the Government introduced Indian Public Health Standards in 2007 for primary and secondary healthcare services (Wennerholm, Scheutz, Zaveri-Roy, & Wikström., 2013). These standards were last revised in 2012 (and are under the process of revision now). Quality of healthcare is also maintained through medical audits and accreditation under National Quality Assurance Standards (NQAS-MoHFW, 2017), National Accreditation Board for Hospitals and Healthcare Providers (NABH), and the National Accreditation Board for Testing and Calibration Laboratories (NABL). Other initiatives like LaQshya, Swachh Bharat Mission, Swachh Swasth Sarvatra, Kayakalp etc. have been launched by the GoI towards improving quality. Adherence to clinical practice and guidelines has increased to manifold since the launch of NHM. Every labour room has clinical protocols.

While these institutional mechanisms are in place, the adherence of public facilities and services to such standards needs to be improved. The number of health centres (SCs, PHCs, CHCs) meeting IPHS norms has been falling since 2015 (RHS, 2015-2019). As per RHS 2019, only 3.4% SCs, 8.3% PHCs and 21.8% CHCs are functioning as per IPHS norms in rural areas.

The initiatives taken towards improving quality and hygiene appear to have an impact in terms of Kayakalp and NQAS certification (EY Primary Survey: KII Analysis, 2019). Adherence to clinical practice guidelines has been low in the country (WHO, World Bank, and OECD, 2018; EY Primary Survey, 2019). There is a need for adherence to Standard Treatment Protocols (STPs) and further improvement in hospital infection surveillance (Discussed in detail in section 3.2.8.A).

In the current healthcare environment, where both private and public players work tirelessly to grow into a network of healthcare delivery networks, from tertiary to secondary, primary, home, and individual care, ensuring and improving the standard of service and patient experience is critical (EY FICCI, 2019).

An improved correlation between patient satisfaction rates, medication adherence, and treatment success has been observed (Bhattacharya, et al., 2018). Patient satisfaction as an indicator of healthcare quality has developed as an outcome metric, however, surveys of patient satisfaction are increasingly being described as assessing the performance of the operational service delivery process in hospitals (Bhattacharya, et al., 2018). Satisfaction with the service provider, i.e. the prescriber, is a vital component of the entire consultation process and ultimately dictates the patient's compliance with the prescribed treatment. Besides this, performance often varies depending on the beneficiaries' socio-demographic characteristics (Kumari, et al., 2009).

~77% of labour rooms in district hospitals were found to be clean and hygienic (EY Primary Analysis: Facility Survey, 2019). ~80% households reported functional equipment in the health facilities (EY Primary Analysis: Household Survey, 2019). It was observed that the respondents were largely satisfied with the services provided at health facilities (EY Primary Analysis: Household Survey, 2019).

There were some concerns reported around lack of privacy and confidentiality faced by the patients at health facilities (EY Primary Analysis: Household Survey, 2019). Some patients preferred private hospitals to public ones because of level of care, lesser waiting time, and availability & quality of the services in private hospitals (EY Primary Analysis: FGD, 2019).

Key Findings:

- Hospital Infection Surveillance and development and adherence to STPs is a concern in public health facilities. While adherence to clinical practice guidelines is low in the country, respondents were largely satisfied with the services (EY Primary Analysis: KIIs, 2019); (EY Primary Analysis: Household Survey, 2019).

- Uptake of NQAS, LaQshya, Kayakalp has been increasing and yielding results (EY Primary Analysis: KIIs & FGD, 2019).

- Some patients prefer private hospitals to public ones because of level of care, lesser waiting time, and availability & quality of the services in private hospitals (EY Primary Analysis: FGD, 2019).

- 77% of labour rooms in district hospitals were found to be clean and hygienic (EY Primary Analysis: Facility Survey, 2019).

- ~80% households reported functional equipment in the health facilities (EY Primary Analysis: Household Survey, 2019).

2.2.6 Increase in the share of Public Hospitals

The share of Government/public hospitals in both OPD and IPD has increased since 2014. The service providers remain fragmented in the private sector

The share of public sector in both OPD and IPD has marginally improved in the last 5 years, Figure 2-21. According to the HMIS data, the improvement has been more significantwith 27% increase in IPD from 2014-15 to 2019-20 and 26% increase in OPD during the same period.

Figure 2-21: Increase in share of public health facilities
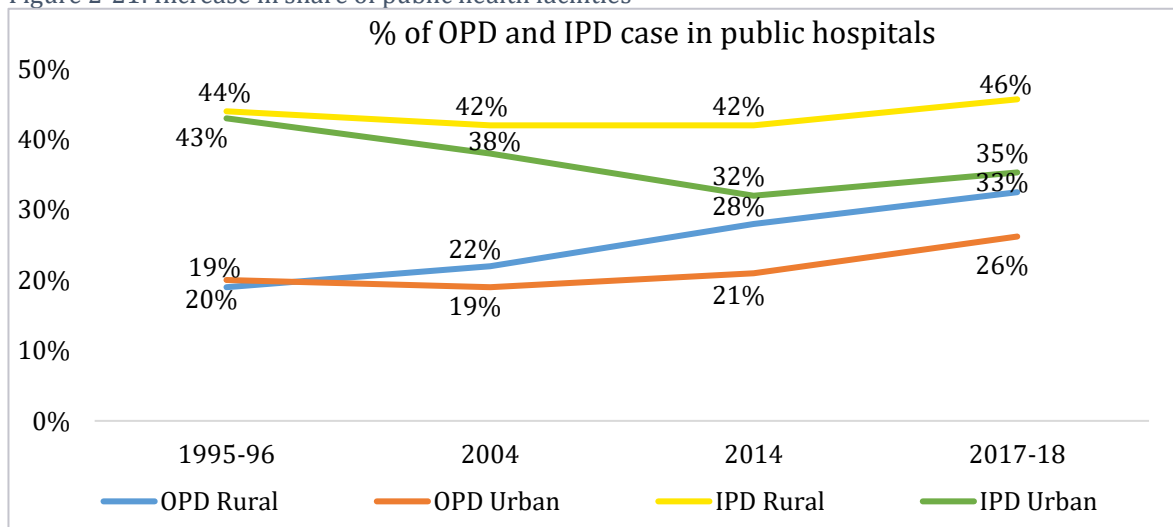
Source: NSSO 71st and 75th Round

~50% of respondent households consulted a government doctor first in case of illness (EY Primary Analysis: Household Survey, 2019). ~50% population in each social group surveyed, preferred consulting government doctors (EY Primary Analysis: Household Survey, 2019).

2.2.7 Healthcare Financing

Government's expenditure on healthcare has been 1.6% of GDP for FY 2019-20, while the NHP sets a target of 2.5% for the year 2025 (Figure 2-22). As per the current trend, the target of 2.5% is unlikely to be met. Also, the Government's expenditure on healthcare as part of GDP remains

Chapter 2: Sectoral Analysis

much lower as compared to other countries as shown in Figure 2-23.

Figure 2-22: Government expenditure as a % GDP in India
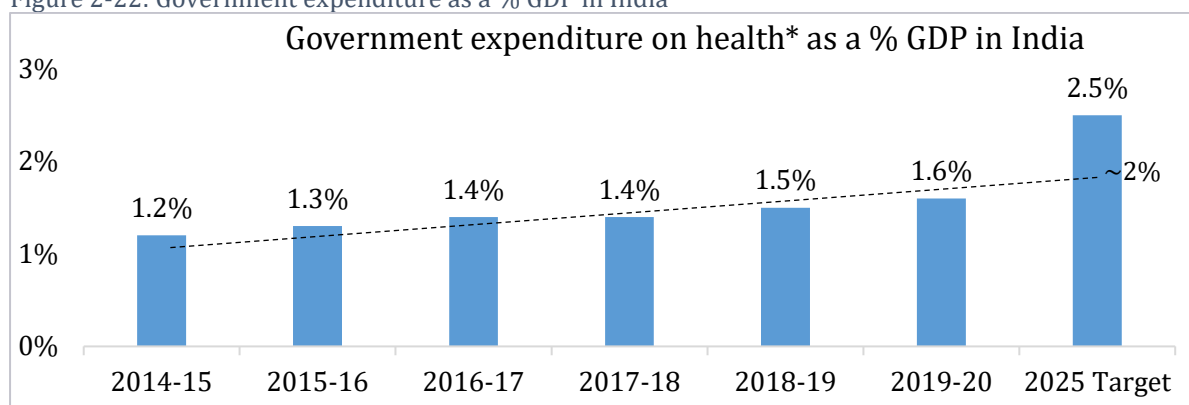
* Expenditure on 'Health' includes expenditure on 'Medical and Public Health', 'Family Welfare' and 'Water Supply and Sanitation'.
Source: Economic Survey, 2019

Figure 2-23: Domestic general government expenditure (% GDP)
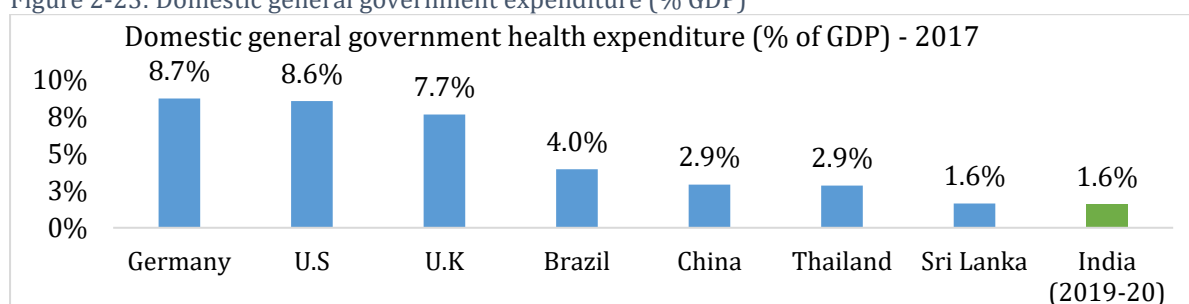
Source: World Bank data

While, the Scheme-wise allocation and utilisation of funds has been discussed in the next chapter, an aggregate level discussion is presented below.

The expenditure is largely on central sector schemes and CSS (Table 2-8 and 2-9). CSS constitutes nearly ~60% of the healthcare expenditure.

Table 2-8: Centrally Sponsored Schemes' allocations (in INR Crore)

Centrally Sponsored Schemes	RE 2016-17	RE 2017-18	RE 2018-19	RE 2019-20	
NRHM[52] (MoHFW)	19,462.00	25,458.61	25,243.05	28,783	
NUHM (MoHFW)	575.00	652.05	875.00	950.00	
Tertiary Care Schemes (MoHFW)	660.95	665.90	345.00	300.00	
HR for Health and Medical Education (MoHFW)	1,500.00	4,025.00	4,220.00	4,500.00	
AB- Pradhan Mantri Jan Arogya Yojana (MoHFW)	-	-	2,400.00	3,200.00	
NAM (Ministry of AYUSH)	399.40	439.40	503.53	500.60	
Total	**22,597.35**	**31,240.96**	**33,586.58**	**37,490.20**	

Source: Union Budget for Ministry of Health and Family Welfare; PMJAY Annual Report 2018-19; Union Budget for Ministry of AYUSH

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[52] Does not include the component of Strengthening of State Drug Regulatory System with Rs 206 Crore budget allocation which is a NHM component and not NRHM.

Apart from CSS, central sector schemes also contribute to the overall healthcare outcomes. The allocation is nearly ~15% of the total budget.

Table 2-9: Central Sector Schemes' allocations (in INR Crore)

Central Sector Schemes	RE 2016-17	RE 2017-18	RE 2018-19	RE 2019-20	
Pardhan Mantri Swasthya Suraksha Yojana	1953.24	3175.00	3825.00	4733.40	
National AIDS and STD Control Program	1753.00	2163.06	1925.00	2956.00	
Family Welfare Schemes	639.04	787.87	518.96	514.15	
Health Sector Disaster Preparedness and Management	15.00	26.13	90.00	117.28	
Other Central Sector Schemes	20.44	193.36	89.36	144.43	
Total	**4,380.72**	**6,345.42**	**6,448.32**	**8,465.26**	

Source: Union Budget for Ministry of Health and Family Welfare; PMJAY Annual Report 2018-19; Union Budget for Ministry of AYUSH

On an average approximately 40% expenditure of the scheme was incurred towards strengthening of health facilities at the level of CHC and below. Considering the status of health facilities at CHC and below, the proposed additional expenditure may be substantially spent on strengthening primary healthcare facilities.

Table 2-10: Budget allocation(2020-21) against projected demand

	Budget 2020-21			
	Projection (in INR Crore)	Allocation (in INR Crore)	Shortfall (in INR Crore)	Allocation as % of Projection
Umbrella NHM	85,158.62	39,839.00	45,319.62	46.78
Central Sector Health Scheme	32,033.20	25,172.80	6,860.40	78.58
Total	1,17,191.82	65,011.80	52,180.02	55.47

Source: Department-Related Parliamentary Standing Committee on Health And Family Welfare Report no. 118 , 2020

In BE 2020-21 for the health budget INR 65,011.80 crore has been allocated against the projected demand of INR 11,7191.82 crores leading to a shortfall of INR 52,180.02 crore. This allocation of INR 65,011.80 crore amounts to only 55.47% of the projected demand. This shortfall in allocation might result in difficulty in upscaling of various schemes and projects under the health ministry.

State Fund Allocations

Figure 2-24: Expenditure reported by States and Centre under NHM
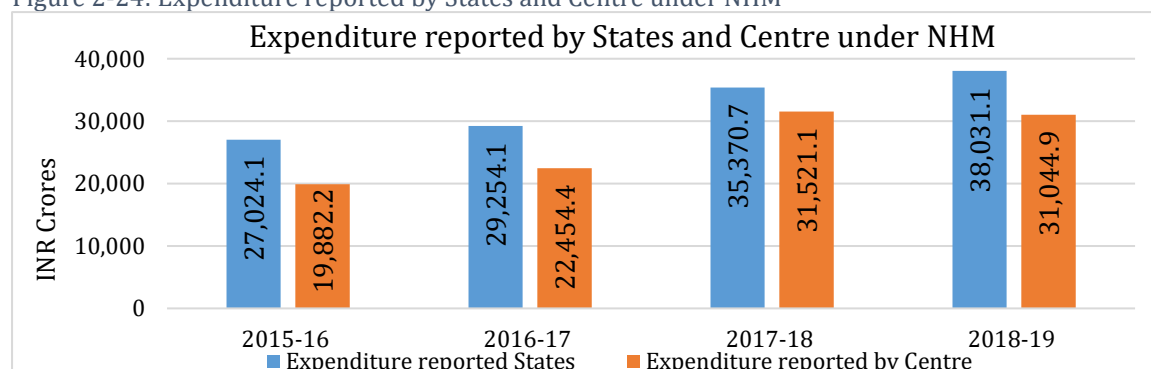
Source: Department-Related Parliamentary Standing Committee on Health And Family Welfare Report no. 118 , 2020 ; Source: Union Budget for Ministry of Health and Family Welfare

Chapter 2: Sectoral Analysis

Out of the overall health expenditure under NHM (States+Centre), the contribution of States is ~55%. The average annual rate of increment in expenditure by States is ~8.9%, while that of centre is ~11.8%. It has been observed that most states allocated less than 2% of their GSDPs (in 2017-18 and 2018-19) towards health against the NHP-17 recommendation of 8% of GSDP (MoSPI, 2020); (Department-Related Parliamentary Standing Committee on Health And Family Welfare Report no. 118 , 2020)

Figure 2-25: State fund allocation per capita under NHM 2019-20
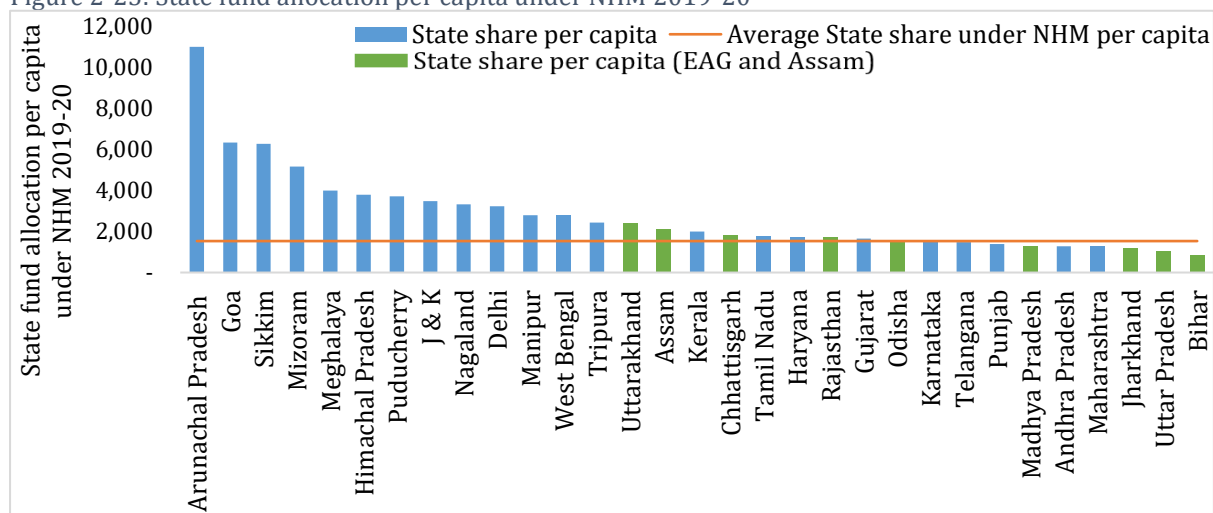
Source: Department-Related Parliamentary Standing Committee on Health And Family Welfare Report no. 118 , 2020; Projected population for 2019 from National Health Profile-2019

The average State share per capita under NHM in India (2019-20) was INR 1533.22 with highest State share per capita in Arunachal Pradesh (INR 11001.48) and lowest in Bihar (INR 853.46).

8-EAG states and Assam have the highest MMR and IMR load in the country while their state share per capita remains almost equal to or lower than the average for all the States.

While 22 out the 32 States/UTs having a state share are above the overall average with large states such as MP, UP, Bihar, Maharashtra, Jharkhand and Andhra Pradesh fall below the average.

Key Findings:

- Government's current expenditure on healthcare has been ~1.6% of GDP. With the current trend, the target of 2.5% of GDP (2025) is less likely to be achieved.

- Out of the overall health expenditure under NHM (States+Centre), the contribution of States is ~55% (EY Analysis); (Department-Related Parliamentary Standing Committee on Health And Family Welfare Report no. 118 , 2020); (Union Budget for MoHFW)

- Most states allocated less than 2% of their GSDPs (in 2017-18 and 2018-19) towards health against the NHP-17 recommendation of 8% of GSDP (MoSPI, 2020); (Department-Related Parliamentary Standing Committee on Health And Family Welfare Report no. 118 , 2020)

- 8-EAG states and Assam have the highest MMR and IMR load in the country while their state share per capita remains almost equal to or lower than the average for all the States.

- Ministry of Health & Family Welfare (MoHFW) drives the healthcare largely through Centrally Sponsored Schemes (CSS) (upwards of 70% of total healthcare expenditure is the share of CSS and Central Sector Schemes of GoI). CSS attract nearly four times the budget of central sector schemes.

2.2.8   Use of Technology and Data Reporting

Interoperable Electronic Health Records

► EHR Standards: The revised version of 2013 standards has been notified in December 2016. The EHR Standards include standards for Disease Classification, Medicine and Clinical Terminology, Laboratory Data exchange, Digital Imaging and Communication etc. for semantic inter-operability.

► Metadata & Data Standards (MDDS): To enable interoperability among healthcare applications MDDS were developed following the guidelines of Ministry of Electronics and Information Technology (MeitY) and open standards policies of GoI. The MDDS have more than 1000 data elements to be used in healthcare applications and are aligned with the global health IT standards. The approved MDDS were notified by MeitY in August 2018.

► National Identification Number (NIN) to Health Facilities in India: a unique identification number, which is essential for achieving inter-operability and creation of EHRs, is being assigned to all health facilities (both public and private). So far, almost 99% of public health facilities have been allocated NIN. The process for setting up the mechanism for allocating NIN to private facilities is underway.

► Hospital Information System (HIS): HIS is being implemented for computerized registration and capturing EHR/ EMR of patients in public health facilities upto PHC level. This will also facilitate workflow management leading to better delivery of services to patients and improvement in efficiency of processes in these facilities. So far, financial assistance has been provided to 21 States/UTs for implementation of HIS application. Current status of HIS implementation is as below:

  o eHospital (NIC): implemented in more than 320 hospitals
  o e-Sushrut (C-DAC Noida): implemented in more than 80 Hospitals in State of Maharashtra (1), Telangana (3), Rajasthan (72) and Delhi (1).

► My Health Record: provides a single online personal medical record storage platform to citizens of India to enable them to manage their own medical records in a centralized way, which greatly facilitates the storage, accessibility and sharing of personal health data.

Case Study 3 – Electronic Health Record Sharing System in Hong Kong

Introduction

The Electronic Health Record Sharing System (eHRSS) is a Hong-Kong government-led, non-compulsory program launched in March 2016 for sharing of the health records of citizens in both public and private healthcare sectors in Hong Kong. The centralized repository contains details of the patient's drug reactions, diagnosis, procedures, medications, immunisation etc. and is stored and shared across the health care providers with the patient's consent.

Chapter 2: Sectoral Analysis

Key Stakeholders

Key Stakeholders	Beneficiaries
•GovHK • Food and Health Bureau •Department of Health •Hospital Authority •Office of the Government Chief Information Officer •Office of the Privacy Commissioner for Personal Data	•Citizens of Hong-Kong •Healthcare Providers

Implementation of the practice

- The first stage of the eHR program was implemented from 2009 to 2015 as a sharing pilot called "Electronic Patient Record". In March 2016 eHRSS was launched.
- The data privacy and security of the eHRSS was given legal protection.
- An information infrastructure is provided for the healthcare providers via the eHRSS. With the consent of patients, the records can be retrieved by healthcare professionals.
- In stage one of eHRSS, they developed eHR sharing platform core infrastructure, the CMS Adaptation modules (CMS Adaptation modules are modules developed to facilitate private hospitals to connect to and interface with the eHRSS.) and CMS On-ramp application (CMS On-ramp is a clinical management software with sharing capability developed under the eHR Programme. It is a turn-key system readily usable by private clinics.), as well as the standardisation and interfacing component

Results of the practice

eHRSS has helped promote public-private collaboration, facilitate the continuity of care and improve the quality and cost-effectiveness of healthcare services. According to the Hospital Authority (2018), more than 485,000 patients and 3,500 private healthcare professionals were enrolled in the PPI-ePR pilot up to January 2016.

Lessons learnt

The predominant challenges faced on the development of eHR are concerns over data privacy and cyber security of the database. As health-related data is highly personal and sensitive, patients generally wish to keep such data sharing on a need-to-know basis. To address this issue, following measures were introduced under PPI-ePR:

- Electronic Health Record Sharing System Ordinance became effective from 2 December 2015 for the establishment of the eHRSS. It provides a legal base to protect the system, data as well as information (Privacy Commissioner for Personal Data, 2018).
- There are two options for voluntary registration- indefinite sharing consent and one-year sharing consent for patients. Consent is valid until revocation by the patient's registration is being withdrawn or cancelled.
- Only patients' data which are within the scope of sharable eHRs will be uploaded to the system and accessed by clinicians on a need-to-know basis.
- Some members have proposed the inclusion of a "safe deposit box" containing sensitive data in the system, in which patients can have control over access to data put in the box. While claiming that such functions might undermine the comprehensiveness of eHRSS, the Government is now exploring the feasibility of the proposal in the enhancement of

Conclusion

With the increasing ageing population and rising NCD burden in India, information systems like eHRSS will help in devising future health policies for the nation. Implementing electronic health records will further help in streamlining the referral and follow up processes in the country with strong gatekeeping.

Further reading

https://www.ehealth.gov.hk/en/publicity_promotion/ehealth_news_09/the_new_world_of_healthcare.html
https://www.legco.gov.hk/yr18-19/english/panels/hs/papers/hs20190520cb2-1432-3-e.pdf
https://www.legco.gov.hk/research-publications/english/essentials-1718ise09-electronic-health-record-sharing-system.htm

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Case Study 4: Digital Healthcare Solutions- South Korea

Introduction

The Korean healthcare system is run by the Ministry of Health and Welfare (MoHW) and is funded by a compulsory National Health Insurance Scheme (NHIS) that covers 97% of the population. Government of Korea has implemented various measures aimed at expanding its digital health industry, i.e., Digital healthcare for Korea. Since 2017 digital healthcare has become a top priority in the country with increased investment and deregulation where appropriate to spur innovation. Digital health is one of the four pillars of the current administration's plan for the fourth industrial revolution, with emphasis placed on areas such as healthcare related Big Data, Health IT (HIT) and artificial intelligence (AI). The Korean healthcare market majorly focuses on IT related solutions to be provided to the patients and as a result they have recently started heavily investing in AI and Block-chain implementable solutions to create a total digital healthcare system that will enable sharing of accountable patient data via secure means in real-time. Korea envisions creating more IT enables solutions and customer centric products designed and customisable for different patients according to their need basis their medical records. In South Korea, 5G coverage is already relatively widespread which severs as a backbone for the digital health infrastructures, with approximately 80% population coverage, and demand for 5G services from consumers is higher than in most other countries.

Key Stakeholders

Government Institutions

Provides regulations and developmental plan for other players

Medical Centers

Korea's Big 5 hospitals
Asan Medical Center, Severance Hospital, Samsung Medical Centre, eoul National University Hospital, Seoul St. Mary's Hospital

Large Corporations

Major Conglomerates in Digital Health
Samsung Electronics, LG Electronics, KT Corp, SK Telecom etc.

Start-ups

Notable Digital Healthcare Start-ups/Scale-up
Insung Information, H3 Systems, Biospace, Vuno etc.

Chapter 2: Sectoral Analysis

<table>
<tr><td colspan="2">**Implementation of the practice**

Most of the digital health care projects in South Korea are based on the following digital areas:</td></tr>
</table>

Digital areas	Highlights
Health IT	Wide-spread prevalence of clinical IT systems, growing investment in patient monitoring accessories, EMR/EHR, etc; Growing trend of fully digitizing the hospital operations
Big Data	Strong government support for precision medicine & genomics, AI-based health products and services, etc
Blockchain	Growing investment in Blockchain-based medical record database, disease prediction services, etc;
Telemedicine	Currently blocked by regulation, but active pilot programs in patient monitoring systems, chronic disease management systems, etc;
Consumer Health Electronics	Currently dominated by health activity monitoring applications from major smartphone companies

Image: Key Highlights of South Korea Digital Health Care

The Key Feature and services in South Korean include:

1. Korean Health Insurance Review and Assessment Service (HIRA) is a value-based purchasing system that guarantees medical service quality improvement and cost appropriateness through efficient resource distribution. HIRA system creates synergistic effects by combining various healthcare purchasing activities and roles. It is based on 3 components:
   - Rule Making - Benefit standard (Treatment, Drug, Medical material) management,
   - Monitoring & Feedback – Medical claims & review, quality assessment, drug utilisation review, on-site investigation, medical fee verification,
   - Infrastructure Management - Healthcare resources management, Korea Pharmaceutical Information Service, Patient classification system, Health Insurance System education, Healthcare big data analysis.

2. Excellence of Korean Healthcare relies on its Advanced Health Technology (HT). Health Technology (HT) translates into healthy living for all people around the world with prevention, treatment and diagnosis of diseases, promotion of health, improvement in rehabilitation, and long-term care. HT comprises of 5 components – Biotech, Material Tech,

Mechatronics, Nanotech and Information & Electronics.

3. EMR systems in Korea have sophisticated functionalities such as clinical-decision support and warnings for drug-drug contradictions and age restrictions. Focus is given on Health Information exchange (HIE) rates between external organisations. Korea utilise Digital healthcare using IT to help distribute medical resources efficiently.

4. As part of the government policy to encourage hospitals to share information across healthcare providers, the Korean government announced a three-year project in 2018 called FEEDER-NET. The projects ultimatum is to create a sustainable bio-health big data ecosystem for research, industry and policy making

5. South Korea uses Big data for medicine - The Korean Bio-Information Center (KOBIC) operates the National DNA Management System which can provide customized diagnosis and medical treatment for patients by integrating big data on various types of medical patient information. Desktop virtualisation, mobile EMR, dashboard, animation based patient education, mobile e-consent, smart patient guide, smart bedside station and some of wireless device & systems are used.

6. Paradigm shift in healthcare: Information & Communication Technology has been a game changer in healthcare, shifting the focus from treatment to prevention and management.
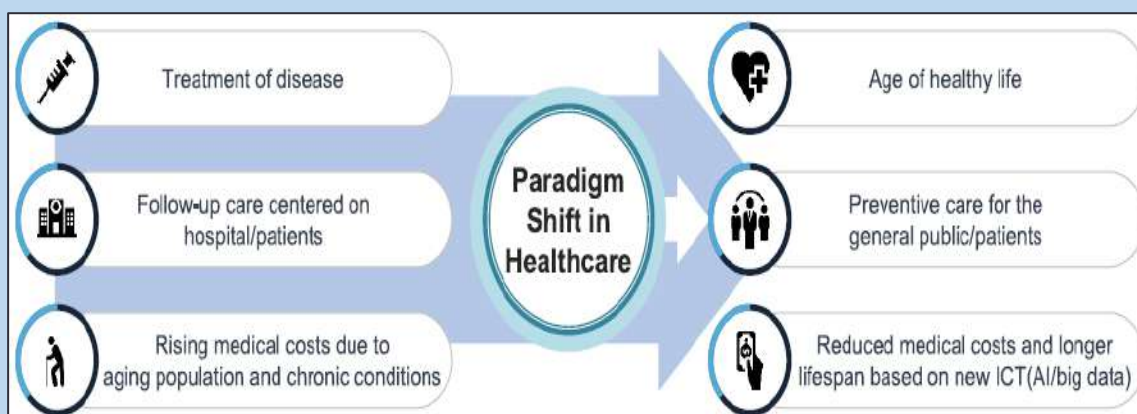
7. Korea government's direction for healthcare is supporting innovative growth in healthcare through DNA-P: Data – Network – Artificial Intelligence + Platform. Key Features:

- OUR (On-Time Universal Reference) hospital that stays with patients every step of the care pathway
- AI-powered smart emergency medical system – securing golden hour during an emergency patient and seamless integration of the emergency system. AI-based precision medicine services "Dr. Answer" where AI doctor answers all questions and offers medical diagnosis and treatments using medical big data. Targeting 8 major disease relating to cardio, cancer and brain, it provides solution like prevention, diagnosis, treatment and prognosis.
- Post, precision, personalised hospital information system (P-HIS) – balance between large and small hospitals with cloud service efficiency. P-HIS – Develop a cloud HIS for Precision medicine to apply/ deploy to primary/ secondary and tertiary hospitals across the country. Cloud HIS is integrated with extensive additional features and analytics services for P-HIS expandability.
- Intelligent SW Technology Development for medical data analysis – personalised treatment based on integrated data and activation of ICT industry (AI, Big Data)

- AI-based smart emergency medical system – develop a seamless integrated emergency medical system to secure patients' golden hour and to reduce medical expenses.

Results of the practice

South Korea is a forerunner in all the health care performance metrics and the country try to improve those metrics with technology and innovation. Most of the performance metrics are better than US and many European countries. Few metrics as follows in 2017:

- Life expectancy at birth was 82.7 years
- Colorectal cancer survival rate at 72.8% - (OECD highest)
- Cervical cancer survival rate at 76.8% - (OECD 2nd highest)
- Overall cancer survival rate at 66.9%

Lesson Learnt

Data security and privacy become major concerns for Digital Health initiatives. Several laws and acts in Korea regulate the personal and medical information required to provide medical and healthcare services. Experts describe the regulations surrounding the sharing of patient data, which is important for the development of health IT and big data (AI, deep learning)-based technologies as well as precision medicine platforms, as being both complicated and vague. The guidelines surrounding deidentified data, as well, is unclear, and therefore leaves healthcare providers and companies at risk if they were to interpret the guidelines incorrectly. The current administration has committed to removing excessive regulations on the data industry to boost the growth of the sector, especially relating to the healthcare. The major data privacy regulations act in South Korea are

- Personal Information Protection Act (PIPA): Enacted on September 30, 2011, Korea's Personal Information Protection Act (PIPA) is considered as one of the strictest data protection regimes in the world. According to the Act, any information that, if revealed, may considerably infringe on the data subject's privacy, such as information related to an individual's health or medical treatment, genetic profile, sexual orientation, criminal records, ideology and faith is considered sensitive data.
- Medical Services Act: The Medical Services Act regulates matters related to quality of medical services, requirements for hospitals and medical records as well as prohibition against disclosure of confidential patient information such as treatment options and drugs prescribed.

Conclusion

South Korea uses the vast amounts of health data to which it has access to assess the consumption of health services and improve efficiency and cost-effectiveness. When it comes to public health policy, notably a collaborative governing approach and rich data infrastructure, the country stays ways ahead than the rest of the world.

Further reading

https://www.ohdsi-europe.org/images/symposium-2019/posters/17_Seongwon_Lee.pdf
https://stlpartners.com/digital-health-telecoms/digital-health-in-south-korea-five-examples-of-digital-health-beyond-telemedicine/
https://stlpartners.com/research/5gs-healthcare-impact-1-billion-patients-with-improved-access-in-2030/
https://www.intralinkgroup.com/getmedia/3153c79b-463d-47c7-84e6-56848c98aab7/Intralink-Report_Life-Sciences_June2019

Data Reporting

RMNCH+A and a few other parameters are captured in HMIS quarterly. Information on disease control programs is available in pieces in different databases such as Nikshay (tuberculosis), Nikusht (leprosy) etc. External surveys such as Sample Registration System (SRS), District Level Household Survey (DLHS), and NFHS are available at a lag and at different periodicity excluding the possibility of a real-time triangulation. Further, there are disparities in the data reported in HMIS and NFHS for the same indicators measured across States and UTs.

Figure 2-26:Data Integrity Measure–ANC registered within 1st Trim. & Institutional Deliveries-Study States
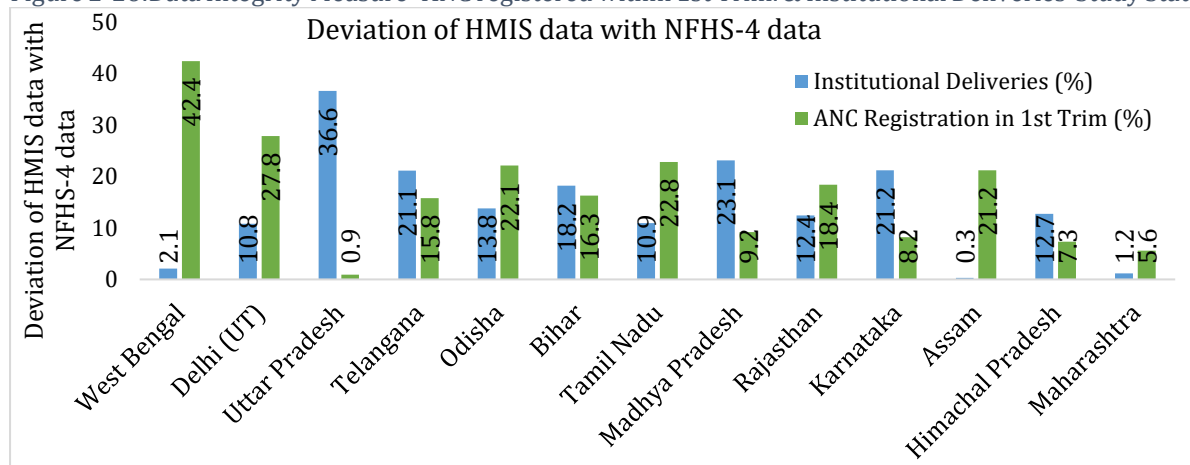
Source: Healthy States Progressive India, NITI Aayog 2019

The setting up of HRMIS and facility of e-payslip generation through HRMIS are yet to be taken up in many States (NITI Aayog, 2019). Many States are also not updating HRMIS data regularly. In absence of HRMIS in States, mismatch of infrastructure availability and human resource availability is possible, leading to sub-optimal use of facilities. Further, impact of absenteeism, posting and transfers can't be assessed on real time basis.

2.2.9 Employment Generation

Health sector is a crucial aspect of an economy and also a significant source of quality jobs. While the exact numbers for employment in health sector (especially in private sector) are difficult to estimate, the below statistics could be used as broad indicators:

- From 2015 to 2018, a total of 8,963 doctors were given employment in DHs (6,403), SDHs (2,414) and PHCs (146). 7,141 health workers (female) in SCs (2,768) and PHCs (4,373); and 30,162 allied healthcare staff in DH (21,561) and SDH (8,601) were given employment in the same period (RHS, 2015; RHS, 2018).
- With the increase in popularity of AYUSH, there has been a steady rise in total number of registered AYUSH doctors in India from 7,44,563 in 2015 to 7,99,879 in 2018 (AYUSH in India, 2018).
- Total number of ANMs in India, registered nurses and registered midwives in India are 8,60,927 and registered nurses and registered midwives in India are 2,048,979 respectively till 2017 (National Health Profile, 2019). Further, there were 56,469 lady health visitors till 2017 and 1,125,222 pharmacists till March 2019 in India (National Health Profile, 2019).
- MoHFW has proposed transformation of 1,50,000 existing sub-centres and primary health centres into HWCs to be managed by newly created post of middle-level health providers (designated as Community Health Officer). This will create job opportunities for nursing

professionals, AYUSH doctors, and other allied professionals.

- A preliminary analysis of the CBHI data of over 5. 3 lakh facilities indicates potential employment opportunities in a variety of settings from one and two person dispensaries and single clinics to free standing diagnostic laboratories and specialty hospitals. Based on the present assumptions, it is estimated that healthcare sector can be a potential employment generator in the long run, and an additional ~5.5 lakh workforce could be absorbed in various facilities over the years (MoHFW, 2020).

2.2.10 Governance

MoHFW, through NHM, has supported the States / UTs technically and financially with respect to mechanisms for governance and HR recruitments. Public Health Management Cadre and decentralized planning has been discussed below, and other governance tools and mechanisms for UCSS-NHM have been discussed in Section 3.2.2.

- *Public Health Management Cadre*

The creation of Public Health Management Cadre has been approved by the Central Council of Health and Family Welfare (CCHFW) in 2019. There is a need to accelerate the work being done to set up Public Health Management Cadres in India for pre-emptive planning for responding to potential natural disasters, pandemics etc. (IIPH & IIM-A, 2020).

Under extreme stress situations, the public health cadre in Tamil Nadu has played a crucial role (discussed in Case Study 3) (EY Primary Survey: KII Analysis, 2019).

Public Health Cadre in India is at different stages of implementation in various states:
- those with a well-established cadre, e.g. Tamil Nadu, Maharashtra
- those with some select components of the cadre in place, e.g. West Bengal, Kerala
- states actively pursuing cadre formation, e.g. Odisha, MP, Chhattisgarh
- states still in the contemplation phase; e.g. Karnataka, Haryana, some NE states (Cleak, KR, Heaslop & Tonge, 2020)
- Uttar Pradesh recently introduced guidelines for the introduction of public health cadre.

Case Study 5 - Public Health Cadre in Tamil Nadu

Introduction

Public health interventions are delivered by different bottom-top level stakeholders lacking regulatory authority and powers to systematically enforce public health in the state (Parthasarathi & Sinha, 2016). In Tamil Nadu, there is a dedicated Public Health Cadre that works in administrative and management positions and manages the primary health services. A separate, systematically trained Cadre has helped handle stressful situations like tsunami etc

Implementation of the practice
- A fresh medical graduate can join as Municipal Medical Officer (MMO)in the Cadre. Within 4 years of joining, the MMOs can also complete a diploma in public health (from Madras Medical College). MMOs with completion of diploma get regularized and depending on the vacancy can also be promoted to the Deputy Director level.
- Three categories of such posts are –
  a) district level officer to head primary health services
  b) principal of training institutes
  c) faculty in the community medicine department in medical colleges

---

Further, with an MD degree, career progression may include working in medical colleges or field services. The promotions can reach further up to the director through joint director and additional director posts (Parthasarathi & Sinha, 2016).

- There are also incentives for working in rural areas, such as:
  - Allowance for working in rural areas is INR 1000 per month.
  - Before the introduction of the NEET exam in the State, 50% preference was given to the candidate for working in rural areas for two years and, they were also provided further preference for each additional year of work experience in rural areas (EY Primary Analysis: KIIs, 2019).
  - Residential accommodation is provided to the medical officers in majority of the cases.

Results of practice

1. *Better health outcomes without high expenditure on health-* Tamil Nadu without spending more than the national average on health has been the state with one of the best health indicators. Kerala also with better health outcomes, in contrast, has public health expenditure more than the national average and private expenditure more than twice of the national average (Kumar, Bothra, & Mairembam, 2016)
2. *Disaster Management-* Cadre adopts annual pre-emptive planning for responding to potential natural disasters such as floods and cyclones. This ensures that when catastrophic disasters like the tsunami of 2004 strike, the state has the internal preparedness to deal with them (EY Primary Analysis: KIIs, 2019).

Lessons learnt

- Separate components in the public health workforce can be helpful:

S.No.	Health workforce categories
1	Public health administrative and leadership posts (to be headed by doctors with public health training)
2	Technical staff (epidemiologists, entomologists, health informatics/surveillance officers)
3	Trained public health management staff
4	Grassroot front-line public health workers (female and male multi-purpose workers)

- Doctors joining public service can be given a choice to either enter the clinical cadre (providing clinical care) or the public health cadre (with a predominant public health role).

- Doctors with pre-existing public health qualifications and/or providing in-service public health training to existing doctors should be included.

Conclusion

A public health management cadre/public health cadre maybe considered by the States for efficient management of public health system. This practice is replicable across States due to similar administrative structure and minimal restructuring at block/district/state level required.

Further Readings

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5112973/
https://apps.who.int/iris/bitstream/handle/10665/329567/seajph2018v7n1p29.pdf

Chapter 2: Sectoral Analysis

- *Decentralised Planning and role of local bodies*

While some states have involved local Governments effectively for planning and monitoring of healthcare programs, due to lack of capacity at the local Government level, other states are yet to be effectively involved.

In States like Gujarat, Andhra Pradesh and Maharashtra, PRIs have been actively involved in the monitoring of health programs (12th CRM, 2020). Few states have not been able to actively involve local Governments (PRIs and ULBs) in planning and monitoring of health programs, the major reason being the lack of capacity for active involvement (EY Primary Survey: KII Analysis, 2019).

In order for local bodies to become stakeholders for sustainable improvements in health standards a need to formalise the roles and authority of local bodies in ensuring convergence was highlighted (IIPH & IIM-A, 2020).

Decentralization of decision making to meet local and regional health priorities has been the key national health policy principle (National Health Policy, 2017). The decentralization efforts with respect to the inclusion of Urban Local Bodies (ULBs), Panchayati Raj Institutions (PRIs) and community participation has been observed in a few States. However, instances of no support received from the local Government representatives were also reported in few states (EY Primary Analysis: KII Analysis & FGDs, 2019).

> ### *Case Study 6 – Kerala Institute of Local Administration (KILA)*
>
> **Introduction**
>
> Kerala Institute of Local Administration (KILA) was established in 1990 as an autonomous institution at Thrissur with several campuses in Kerala. KILA is registered under the Travancore-Cochin Literary, scientific and charitable society Act 1995 and supported by the Government of Kerala. The main objective of the institute includes strengthening decentralization and local governance, establishment of training and research centres, conducting training programs for the local government officials. KILA provides support in training, research and consultancy for local self-governing institutions (LSGIs). The institute accelerates the socio-economic development of the State through the strengthening of LSGIs.
>
> **Key Stakeholders**
>
> - Government of Kerala
> - Organizational Structure of KILA- The institute has been headed by the Director and supported by staff who together form part of different organizational committees.
>
> **Implementation of the practice**
>
> - KILA functions for promoting decentralized governance in both rural and urban areas.
> - The organizational committees are:
>   - Training Planning & Monitoring Committee
>   - Journal Committee
>   - Research and Internship Committee
>   - Grievance Redressal Committee
>   - Help Desk Advisory Committee

- KILA focuses on the following core areas to strengthen the LSGIs:

Participatory planning	Local & Urban Governance and Development	Gender Development
Local Economic Development and Livelihood Promotion	Public Health	Child Rights Governance
Natural Resource Management and Watershed Development	Financial Management	Food Security and Sustainable Agricultural Development
Good Governance and Social Accountability	Human Development	Poverty Management

- KILA has been actively engaged in capacity building programs on local governance and decentralization. Training programs offered by KILA are:
  - o Trainers Training Program
  - o Panchayat to Panchayat Program
  - o Certificate Course for Elected Representatives
  - o National Level Course on Decentralized Governance
  - o International Course on Decentralization
  - o Decentralized Training for Local Government Functionaries
- Off-Campus Training Program-The institute also conducts research studies and publishes reports and working papers on decentralization and local governance. The institute disseminates information to the public mainly through its publications.
- KILA also promotes training of interns on video documentation using smart phones. The training aims to train interns who can further train panchayats using these video documentations.

Results of the practice

- Involving all stakeholders in the discussion including the elected heads, district-level officials, representatives of major educational/research institutions, NGOs etc.
- Training support provided in development sectors like health, education, agriculture etc.
- 1,041 trainings conducted in 2019-20 with ~40,300 participants.

Lessons Learnt

- Robust training and dissemination of information for decentralised local planning contributes towards smooth and efficient functioning
- Similar curriculum maybe developed for PRI members and other LSGIs by centre to be taken up by States
- Handholding support should be provided wherever required

Conclusion

Kerala has succeeded to a great extent in achieving local development through decentralized planning. With the trainings and support provided through KILA, the implementation of health programs has been found to be better in the State which is reflected in the overall health outcomes. The LSGIs using these trainings are further developing innovative models to address problems like waste disposal, solid waste management, employment generation etc.

Further Readings

http://www.dspace.kila.ac.in/bitstream/123456789/98/1/Development%20Interface%20Between%20Local%20Governments%20and%20MLAs%20-%20Hand%20Book.pdf
http://dspace.kila.ac.in/bitstream/123456789/228/1/Local%20Governance%20-%20Book%206%20Institutions%20and%20Services.pdf
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5294441/

Chapter 2: Sectoral Analysis

2.2.11 IEC, Outreach Activities and Community-based interventions

The initiatives taken by the Government in the field of IEC include: awareness about National Health Policy, 2017, various national schemes and programs and National Mental Healthcare Act, 2017 through print, outdoor and social media (National Health Policy, 2017).

The Health Ministry has also partnered with Directorate of Field Publicity (DFP) to spread information about promotive and preventive healthcare of newborns and children, adolescents, expectant mothers, feeding mothers, newly married couples, NCDs etc.

Some of the other IEC initiatives are as follows (Ministry of Health and Family Welfare, 2019):

1. Approval of INR 25 Crore has been received by the ministry to radio broadcast on all health issues, especially Dengue and Chikungunya.
2. Outdoor publicity has been used as a part of 360-degree approach for creating awareness.
3. Department of Audio Visual and Publicity (DAVP) has been partnered with to create awareness about RCH/non-RCH issues within guidelines approved by the Ministry of Information and Broadcasting.
4. Social Media platforms like YouTube, Facebook and Twitter are used to upload videos, short films and speeches on health.
5. 9th Vibrant Gujarat Global Trade Show, 2019 was the platform to display components of Ayushman Bharat.

Information regarding facts and proper hygiene practices are also promoted and achieved through IEC activities such as compulsory sex education in schools, educational programs, television and interaction of adolescent girls with sociologists, health personnel, teachers & parents (Kamaljit, Arora, Singh, & Neki, 2012).

IEC activities are also conducted for programs like National Leprosy Eradication Program (NLEP) for creating awareness amongst the population and especially reducing the stigma against leprosy affected people. These activities are usually carried through outdoor and rural media, mass media, advocacy meetings and special focus is given on inter personnel communication (DGHS, 2019). Initiatives like celebration of Rakhi festival with leprosy patients are undertaken.

Maharashtra has initiated "IEC Wall", where Gram Sabha building is used to document and spread awareness about various schemes. Uttarakhand has shown an improvement in the awareness on JSY, JSSK and emergency transport services due to efficient IEC practices (Ministry of Health and Family Welfare, 2017).

However, targeted IEC interventions are required to increase public awareness on healthy lifestyles and on availability of services for curbing Non-communicable diseases. Most IEC activities are skewed towards RMNCH+A programs. Interpersonal Communication (IPC) is rarely used to increase awareness. "Know your health facility", a web portal aiming to locate the nearest health centre in Uttar Pradesh, was observed to be non-functional. There is a need of targeted IEC addressing local myths, misconceptions, and stigma related to disease conditions (Ministry of Health and Family Welfare, 2017).

2.2.12 Key Legislative Changes and Regulatory Reforms

To meet the current challenges, many legislative changes and regulatory reforms have been taken up. The Epidemic Diseases (Amendment) Ordinance, 2020 was promulgated to amend the Epidemic Diseases Act, 1897. The Ordinance amends the Act to include protections for healthcare personnel combatting epidemic diseases and expands the powers of the central government to

prevent the spread of such diseases. The National Medical Commission Act, 2019 repeals the Indian Medical Council Act, 1956 and replaces the Medical Council of India with the National Medical Commission. The Mental Healthcare Act, 2017 aims to provide mental healthcare and services for persons with mental illness and to protect, promote and fulfil the rights of such persons. The Act does not apply to all mentally disturbed persons[53] (Math, Basavaraju, Harihara, Gowda, Manjunatha & Kumar, 2019) and mental conditions associated with the abuse of alcohol and drugs (Duffy & Kelly, 2017).

The Human Immunodeficiency Virus and Acquired Immune Deficiency Syndrome (Prevention and Control) Act, 2017 provides for the prevention and control of the spread HIV and prohibits discrimination against persons with HIV. Bio Medical Waste Management Rules, 2016 in supersession of 1998 Rules aims to improve the collection, segregation, processing, treatment and disposal of biomedical wastes in an environmentally sound manner.

The Medical Termination of Pregnancy (Amendment) Bill, 2020 has added the definition of termination of pregnancy to mean a procedure undertaken to terminate a pregnancy by using medical or surgical methods. Allied and Healthcare Professions Bill, 2018 recommends regulating and standardising the education and practice of allied and healthcare professionals. Digital Information Security Healthcare Act, 2018 seeks to establish National Digital Health Authority to enforce privacy and security measures for electronic health data. Public Health Bill, 2017 provides for the prevention, control and management of epidemics, public health consequences of disasters, acts of bio terrorism.

Many legislative and regulatory changes have been carried out during the study period including regulating the prices of medical devices such as pricing control of stents in 2017 (Bhat and John, 2017).

Over the Counter (OTC) drug is not a defined term and has been available at the counter freely including online sales (Marathe et. al., 2020). With the increasing usage of teleconsultation,[54] the availability of drugs including the Schedule H drugs[55] needs to be revisited. Further, there is higher risk of antibiotic resistance.

A detailed discussion is provided in Appendix 4.

2.2.13 Research and Development

Department of Health Research (DHR) under MoHFW aims to translate modern technologies and innovations into public health systems through research and development relating to diagnosis and treatment methods, and transforming the same into products.

The Central Sector Schemes rolled out in 2013-14 to achieve this DHR objective are:

- *Establishment of a network of Laboratories for managing epidemics and Natural Calamities (VRDL)*- Viral Research & Diagnostic Laboratories (VRDLs) were set up to enhance early identification and diagnosis capacity of all viral infections.

---

[53] The Mental Healthcare Act is applicable only to those who have "substantial" impairment in thinking, mood, perception, orientation or memory that grossly impairs judgment, behaviour, capacity to recognize reality, or ability to meet the ordinary demands of life
[54] Telemedicine Practice Guidelines, 2020
[55] Schedule H, Drugs and Cosmetics Act 1940

Chapter 2: Sectoral Analysis

- *Establishment of Multi-Disciplinary Research Units (MRU) in Government Medical colleges - Research Institutions* - To promote and encourage quality medical research in the country and provide assistance to medical colleges to set up appropriate research facilities.

Table 2-11: Physical performance of VRDLs and MRUs

	Scheme Target	Achieved upto 2018-19	Target for 2019-20	Achieved 2019-20[56]	Shortfall
VRDLs	125	95	30	11	9
MRUs	90	79	11	1	10

Source: Rajya Sabha, 2020

The reasons for shortfall for achieving the 2019-20 target for VRDLs and MRUs were observed as- delays by the State Governments to submit proposals, time taken to identify required space by the medical colleges/institutes etc. (Rajya Sabha, 2020).

- *Establishment of Model Rural Health Research Units (MRHRU) in the States-* The MRHRU acts as an interface between patients, health providers, and health researchers to provide the latest technology for diagnosis and management of disease in rural areas. 25 MRHRUs are to be established during the 14th Finance Commission period. Each MRHRU will be linked to the nearest ICMR institute to mentor the research activities of MRHRU relevant to local needs (Rajya Sabha, 2020).

- *Human Resource Development for Health Research (HRD)* - To create talented health research personnel by upgrading skills of faculty of Medical Colleges/Institutes, mid-career scientists, medical students, and others by specialized training in priority areas of health research.

- *Grant-in-aid (GIA) Scheme for Inter -Sectoral Convergence & Coordination for Promotion and Guidance on Health Research-* Provides support in the form of grant-in-aid for carrying out research studies to identify the existing knowledge gap and to translate the existing health leads to into deliverable products.

Other new initiatives of DHR includes preparation of standard treatment workflow for 53 common and serious medical and surgical conditions, a national list of essential medicines, India-TB Research Consortium, etc.

Budgetary Allocation and Utilization

- A marginal increase in budgetary allocation to DHR in last 2 years

Table 2-12: Budgetary allocations and utilisations – Department of Health Research

	BE	RE	AE	Utilization % (in respect of BE)
	(in INR Crore)			
2016-17	1,144.8	1,344.8	1,323.6	116
2017-18	1,500.0	1,743.4	1,731.7	115
2018-19	1,800.0	1,742.7	1,727.9	96
2019-20	1,900.0	1,950.0	1,801.6[57]	95

Source: Ministry of Health and Family Welfare Union Budget, 2016-2020

- The parliamentary standing committee on Health and Family Welfare, in Demands for Grants for the year 2020-21 has also highlighted a lower marginal increase in budgetary allocations to DHR given the magnitude and incidence of the diseases in the country (Rajya Sabha, 2020).

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[56] upto January, 2020
[57] Upto February 10, 2020

- The projected demand for the year 2020-21 was INR 2,812.72 Crore while the allocation in BE has been INR 2,100 Crore with a shortfall of INR 712.72 Crore. This shortfall is expected to affect the establishment of VRDLs, MRUs, and MRHRUs in States (Rajya Sabha, 2020).

- The allocations for health research have been the lowest as compared to the allocations for other departments engaged in R&D activities.

Figure 2-27: Allocations in BE 2019-20 (DHR viz-a-viz other Scientific Departments)
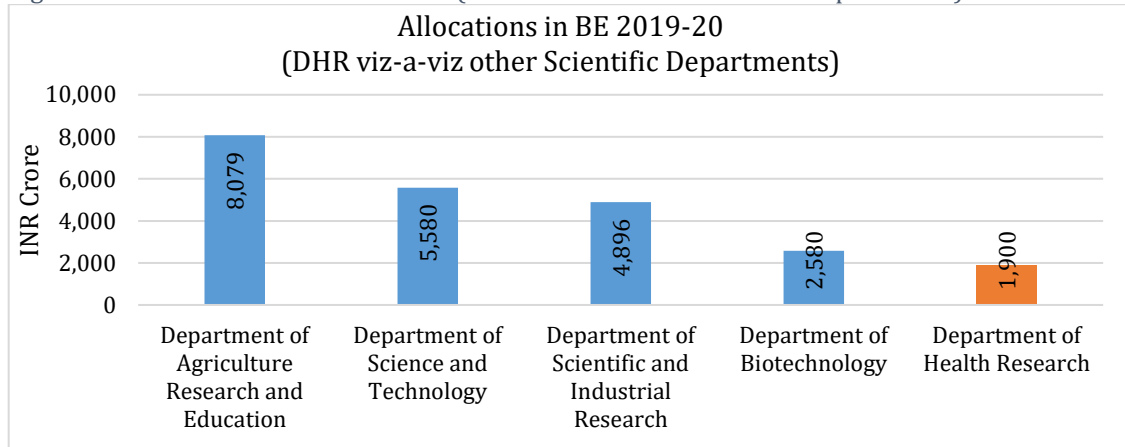
Source: Union Budget, 2020

- NITI Aayog has also suggested the need for an increase in Central outlay on health research for meeting national health priorities, and the development of new technologies, diagnostics, and treatments including the development of new vaccines (Rajya Sabha, 2020).

- Under-utilization of funds during 2019-20 for projects like establishment of a network of VDRLs for managing epidemics (74% of BE), the establishment of MRUs (72.50% of BE), Establishment of MRHRUs (63% of BE) (Ministry of Health and Family Welfare Union Budget, 2016-2020). The under-utilization reflects the weakened absorption capacity of implementing agencies of the Schemes and the need for improving the monitoring mechanism for the timely execution of the DHR Schemes (Rajya Sabha, 2020).

2.3   Inter Sectoral Convergence

Health is impacted and influenced by factors not limiting to the traditional scope of public health and healthcare interventions. The importance of collaboration across organizational and sectoral boundaries for improvement of health and development outcomes has been recognized (Glandon, 2019). The introduction of the SDGs and increasing commitment of governments to achieve Universal Health Coverage has renewed interest in multi sector collaboration (Glandon, 2019).

Figure 2-28: Inter-sectoral convergence of MoHFW with other ministries[58]
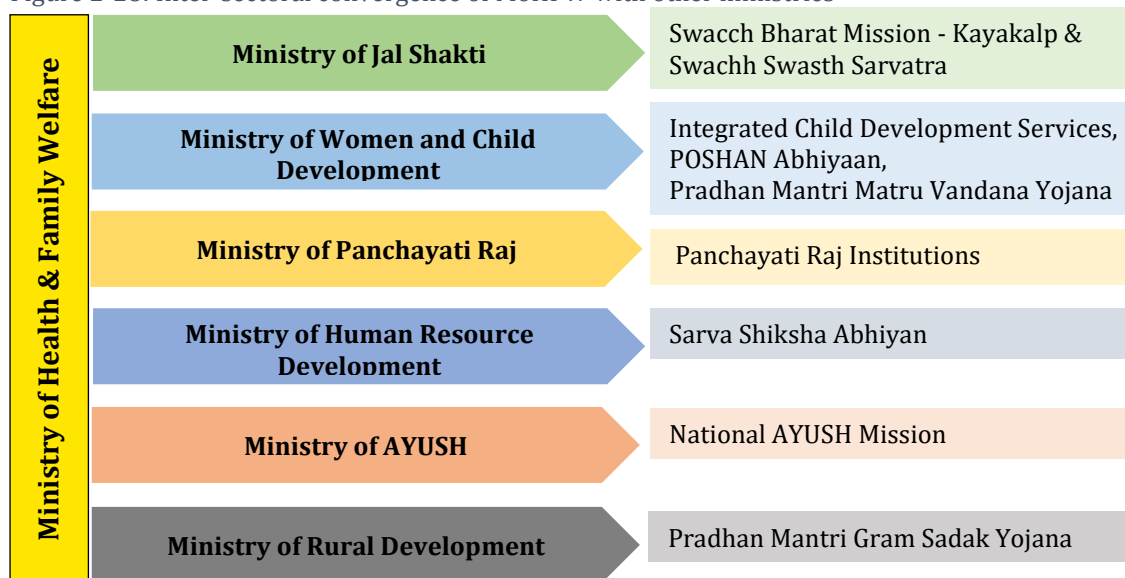
Ministry of Jal Shakti - Department of Drinking Water and Sanitation

- *Swacch Bharat Mission (2014)*

The public health requirement of sanitation and cleanliness programs is to terminate the open transmission of pathogens and prevent harmful germs from entering human bodies (Raman & Muralidharan, 2019). Swachh Bharat Mission acted as key preventive tool and barrier to open defecation through toilet construction and promotion of toilet use. The widespread sanitation coverage in India through Swachh Bharat Mission is estimated to significantly improve health and nutrition benefits for children and reduce household health-care costs (Raman & Muralidharan, 2019).

The impact of Swachh Bharat Mission is not restricted to sanitation coverage only as it influences public health, the environment and economy of the country. As per WHO[59], the Swachh Bharat Mission is estimated to have potentially averted 300,000 deaths in 2019, preventing nearly 200 million cases of diarrhoea occurring annually (WHO, 2018). Children and mothers residing in Open Defecation Free (ODF) areas are likely to be healthier, with a 15% decrease in stunted growth rate, and a 32% reduction in the number of mothers with low BMI (Bill and Melinda Gates Foundation, 2017). UNICEF estimates significant economic benefits of the mission calculated as approximately INR 50,000 a year on account of financial savings due to lower likelihood of disease from using a toilet and practicing and washing and the value of time saved due to a closer toilet for a family living in an ODF environment (UNICEF, 2017).

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[58] Not exhaustive
[59] http://www.searo.who.int/india/news/detail/27-07-2018-health-gains-from-the-swachh-bharat-initiative; last accessed on November 17, 2019.

In the household survey conducted by EY, it was observed that 78% villagers were aware of Swachh Bharat Abhiyan (EY Primary Analysis: KII, 2019). Villagers believe that as much as 95% ODF has been achieved while some people still choose open defecation. The mission has led to an improvement in cleanliness and encouraged people to avoid littering, usage of plastic, and to plant trees (EY Primary Analysis: FGDs 2019).

- *Kayakalp: Assuring Quality across Health Systems for Improving Outcomes (2015)*

The lack of protocols for cleanliness and sanitation in healthcare facilities in India can lead to spreading various infections and diseases. To address this threat under the National Quality Assurance Program, Kayakalp: Clean Hospital Initiative was launched in 2015. Kayakalp is an addition to the Swachh Bharat Abhiyan in the public health system (Ministry of Finance, 2019). The Kayakalp initiative aims to promote and improve the state of sanitation and hygiene in public healthcare facilities in the country. The facilities are assessed objectively using a checklist covering 7 domains- (a) Hospital upkeep (b) Sanitation & Hygiene (c) Waste Management (d) Infection control (e)Support Services (f)Hygiene Promotion (g)Beyond the hospital boundary (Ministry of Health and Family Welfare, 2015).

Initially in 2015-16 only district hospitals were involved in the program, later other facilities like SDH/CHC, PHC, UPHC, and UCHC were also involved in the program (Ministry of Finance, 2019). 9 Central Government hospitals, 395 district hospitals, 1,140 Community Health Centres/ Sub-district hospitals, 2,723 Primary Health Centres, 556 Urban Primary Health Centres, 6 Urban Community Health Centres have scored more than 70%. Total of-4829 facilities have been awarded. This is for the first time, private hospitals have also been included this year and Kayakalp Certificates were given to 635 private health care facilities (Ministry of Health and Family Welfare, 2020).

Figure 2-29: Percentage of facilities scoring more than 70% in external assessment
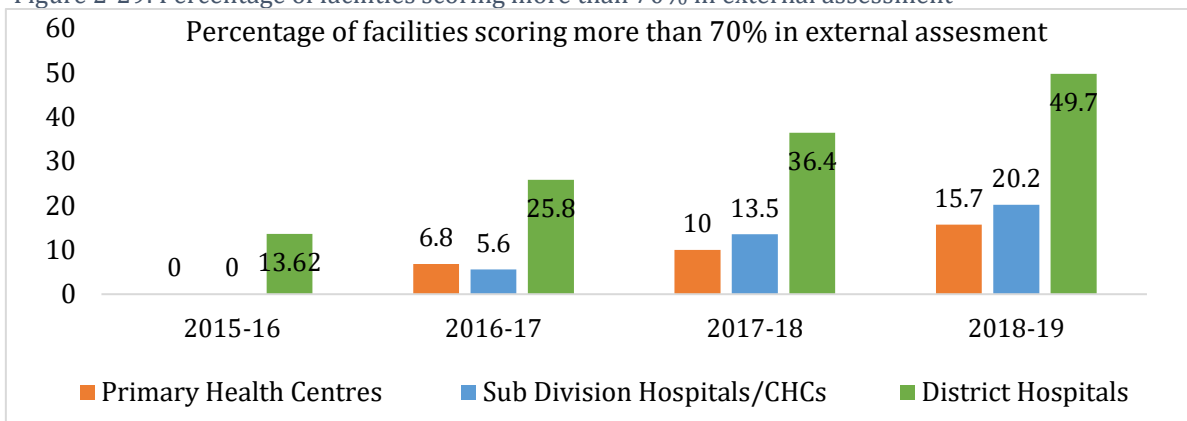
Source: NHSRC, 2020

Case Study 7 - Integrated Hospital Sanitation Monitoring System Dashboard – Andhra Pradesh

Introduction

In this project Government of AP has developed a web-based Hospital Sanitation Monitoring System Dashboard (http://aphospitalsanitation.com). This application tracks sanitation, security and pest & rodent control services outsourced to different vendors on daily basis with scientific check points. As a result of this tracking system, patient satisfaction at public health facilities has increased.

Key Stakeholders

- Ministry of Health and Family Welfare (AP)
- Vendors for Sanitation, Security, Pest control
- Andhra Pradesh Quality Assurance Division
- Hospital Administrators and Superintendents
- Patients

Implementation of the practice

Government of AP has formulated and approved the New Scientific Sanitation Policy-2015 largely based on 'Swachhata guidelines for public health facilities' for better implementation of sanitation in government hospitals wherein sanitation, security, pest & rodent control services would be implemented by different service providers for better implementation of the services to create a visible impact in maintaining health facilities up to the satisfaction of the patients. In order to manage, track and monitor three different service providers, a web-based application has been developed, reviving the monitoring process.

- HSMS Application developed by Andhra Pradesh Quality Assurance Division is meant for improving efficiency and efficacy by creating a real time monitoring tool. The monitoring items have been grouped within the ten parameters according to the weightage.

- Each monitoring items further has specific measurable elements. These measurable elements are checked in each department of a health facility through specific checkpoints.

- All Checkpoints for monitoring items are collated, and together they form an assessment tool called 'Checklist'. Scored/ filled-in Checklists would generate scores reflecting the percentage of performance along with hospital average score (Sanitation, Security, P&R control)

- Each facility under Scientific Sanitation Policy-2015 should perform online assessment thrice a day in different shifts by
  - Medical Superintendent
  - RMO
  - Hospital Administrator /Nursing Superintendent /Head Nurse.

- Scores will be reflected only after a minimum of 2 Assessments of each service

- Scores entered by Facilities will be reflected on the CM COREDASH BOARD along with the facility photographs.
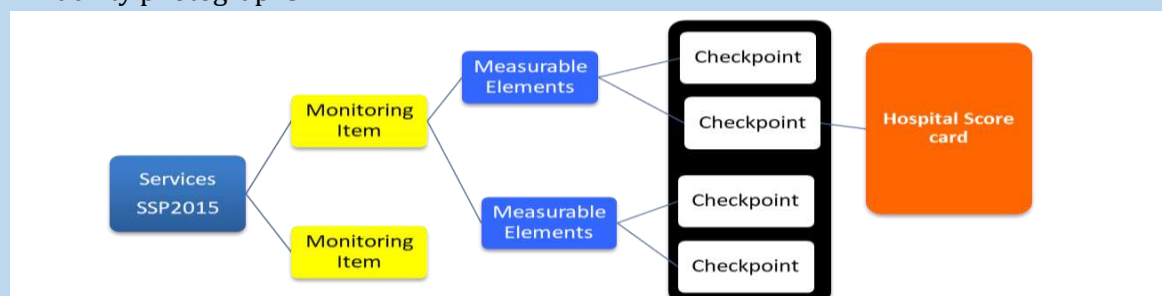
Measuring Metrics:

- Monitoring items identified for the three different services as follows:

Sanitation		
S.No	Monitoring Item	Weightage
1	Cleanliness of Toilets / Urinals / Wash basins	10
2	Cleanliness of Wards	10
3	Cleanliness of Labour Room / OT / Emergency / OP/ Lab	10
4	Cleanliness of Other Areas	10
5	Cleanliness of Drainage and Sewerage	10
6	Garbage Disposal	10
7	Cleanliness of open areas	10
8	Attendance and Uniform	20
9	Consumables	10
Grand Total		**100**

Security		
S.No	Monitoring Item	Weightage
1	Attendance of the Staff	25
2	Uniform of the Staff	10
3	Control of Stray Animals	20
4	Crowd Control and Systematic Parking of Vehicles	20
5	Complaints from Public	10
6	Regular Trainings to Staff	15
Grand Total		**100**

Pest & Rodent Control		
S.No	Monitoring Item	Weightage
1	Attendance & Uniform of the Staff	10
2	Control of Pest & Rodents	30
3	Dis-infestation Treatment as per periodicity	10
4	Recommended Preventive measure for re-infestation	10
5	Usage of Reputed Chemical/ Pesticides Reports	10
6	Evidence of any pest and knowledge of infestation associated with the neighboring premises which may affect the hospital.(complaints from public)	20
7	Regular Trainings to Staff	10
Grand Total		**100**

- Data is collected on a daily basis on the assessment scorecard for the above-mentioned monitoring items through the web-based application.

Results of the practice

- Public Perception and Patient satisfaction towards Hospital sanitation, security services have increased. (as per Patient satisfaction Survey in Likert Scale).

65 Hospitals	23400 Patients Feed Back	2% Poor	4% Fair	18% Good	68% Very Good	8% Excellent

- Reduced hospital acquired infection rate.
- Increased footfalls (Increased No. of public utilising Public Health Services).
- Hospital scores are kept in the public domain in order to maintain transparency accountability and to maintain the integrity of the program.

Lesson Learnt:

Healthcare workers adapting this new monitoring application was the major hurdle in this project. The resistance to adapt technology was reduced through training programs for healthcare workers.

Conclusion:

HSMS is implemented in 33 District Medical Education (DME), 11 Teaching Hospitals, 11 Specialty Hospitals, 11 Medical Colleges & Hostels, 7 DH, (District Hospital), 33 AH, (Area Hospital), 3MCH (Mother & Child Hospital) and 2CHCs (Community Health Centres) to improve the hospital sanitation and reduce hospital acquired infection rate.

Further reading

http://www.nhmmp.gov.in/WebContent/IndoreSummit/Day%203/11%20Core%20dashB oard%20Integrated%20Hospital%20%20sanitation%20Monitoring%20System%20in%20 Andhra%20Pradesh%20Final.pptx

Chapter 2: Sectoral Analysis

- *Swachh Swasth Sarvatra (2016)*

Swachh Swasth Sarvatra, an inter-ministerial joint initiative between the Ministry of Drinking Water and Sanitation and the Ministry of Health and Family Welfare was launched in December 2016 (Ministry of Drinking Water & Sanitation, 2016). This initiative was designed to build on and leverage the achievements of the two programs – Swachh Bharat Mission (SBM) and Kayakalp – of the Ministry of Drinking Water and Sanitation and Ministry of Health and Family Welfare, respectively. This scheme aims to strengthen Community Health Centres in ODF blocks across the country along with the behavioural change to enable them to achieve higher levels of cleanliness and hygiene to make India free of open defecation (Ministry of Drinking Water & Sanitation, 2016). Three broad objectives of this scheme are (Ministry of Health and Family Welfare and Ministry of Drinking Water and Sanitation , 2018):
   a) Enabling Gram Panchayats where Kayakalp awarded PHCs are located to become ODF;
   b) Strengthening Community Health Centres (CHCs) in ODF blocks to achieve a higher level of cleanliness to meet Kayakalp standards through support of INR 10 Lakh under NHM;
   c) Building capacity through training in Water, Sanitation, and Hygiene (WASH) of nominees from covered PHCs and CHCs.

Based on its success in rural India, 'Swachh Swasth Sarvatra' was extended to urban areas in the year 2019, as a joint initiative of the Ministry of Housing and Urban Affairs and the Ministry of Health and Family Welfare.

Frequency of sickness in households was found to be less in households using tap water as compared to those using tube well/hand pumps (EY Primary Analysis: Household Survey, 2019).

Ministry of Women and Child Development

- *Integrated Child Development Services (ICDS) (1975)*

ICDS was launched in 1975 to provide a well-integrated package of services through community level Aanganwadi centres to children, and women. ICDS scheme is a multi-sectoral initiative led by the Ministry of Women and Child Development (MWCD) in collaboration with NRHM of MoHFW, to deliver services essential to maternal and child healthcare, along with early childhood education, in around 1 million villages across rural India (Glandon, 2019).

There has been widespread national coverage through community-based Anganwadi centres and frontline worker staffing (AWWs, ASHA, and others) (Glandon, 2019). In order to create convergence of schemes at the village level the AWWs, ASHAs, and ANMs, representing both ministries work together, to deliver health services to the population (Glandon, 2019). Convergence through common use of infrastructure- Panchayat buildings or community centres are used for conducting joint meetings of field functionaries under different programs related to health and nutrition.

ICDS has a positive impact on cognitive achievement, primarily for girls and children in low-income families. Since the influence of ICDS intervention is observed for these groups, it can be said that the ICDS plays a critical role in reducing gender and income-related gaps in cognitive achievement in India (Vikram & Chindarkar, 2019). Mixed results have been observed: some evaluations have reported reduced stunting among individual children receiving services under ICDS program, while other evaluations do not show any village- or population-level impact, owing to gaps in implementation and funding issues (Jain, 2015). Need for improvement of scheme's convergence across sectors at the village level has been identified (Glandon, 2019).

- *Pradhan Mantri Matru Vandana Yojana (PMMVY) (2010)*

PMMVY is a Direct Benefit Transfer (DBT) scheme under which cash benefits are provided to pregnant women in their bank accounts directly to meet enhanced nutritional needs and partially compensate for wage loss. Implementation of the scheme started with effect from January 01, 2017 (Ministry of Women and Child Development, 2019). Under this scheme, Pregnant Women and Lactating Mothers (PW&LM) receive a cash benefit of INR 5,000 in three installments on fulfilling the respective conditionality, viz. early registration of pregnancy, ante-natal check-ups and registration of the child birth and completion of the first cycle of vaccination for the first living child of the family. The eligible beneficiaries also receive cash incentives under Janani Suraksha Yojana (JSY). Thus, on average, a woman gets INR 6,000.

PMMVY, a flagship scheme of the Government for pregnant women and lactating mothers has achieved a significant milestone by crossing one Crore beneficiaries by reaching a total of 1,00,11,200 beneficiaries as on September 19, 2019 (Ministry of Women and Child Development, 2019) The total amount disbursed to the beneficiaries under the scheme has crossed INR 4,000 Crore so far (Ministry of Women and Child Development, 2019).

- *Prime Minister's Overarching Scheme for Holistic Nutrition (POSHAN) Abhiyaan (2018)*

The National Nutrition Mission now recognised as the POSHAN Abhiyaan aims at reducing malnutrition adopting a convergent, life-cycle, and result-oriented approach. The focus is on adolescent girls, pregnant women, lactating mothers, and children from 0 to 6 years of age (Ministry of Women and Child Development, 2018). The first 1000 days of a child are the most critical in addressing undernutrition, which includes the nine months of pregnancy, six months of exclusive breastfeeding, and the period from 6 to 24 months (Ministry of Women and Child Development, 2018). Timely interventions during the first 1000 days of child care (9 months of pregnancy and up to 2 years) contribute to improvements in birth weight and reduction in both IMR and MMR (Ministry of Women and Child Development, 2018).

The focus of the Abhiyaan on making Nutrition a 'Jan Andolan' has led to a large scale, multi-sectoral and convergent behaviour change campaign that has resulted in greater awareness on the importance of, and the key behaviours to be practised in the first 1,000 days.

The Abhiyaan calls for cross-sectoral convergence, as given in the guidelines and blueprint of its implementation strategy (Paul, Singh, & Palit, 2018). Planning and implementation of POSHAN Abhiyaan is decentralised by creating Convergence Committees across block, district and state levels. The National Council on India's Nutrition Challenges has been created to drive this Abhiyaan, review its implementation, and facilitate convergent action at the highest levels (Paul, Singh, & Palit, 2018). At the micro-level, the Village Health, Sanitation and Nutrition Days (VHSND) have been identified as the platform for convergent action. A series of activities are being lined up under the Community-Based Events (CBEs) components (Paul, Singh, & Palit, 2018). These will serve the dual purpose of driving behavioural change and engaging the community at the grassroot level. The VHSNDs are being visualized as the platform for these events. They can also be used for service delivery (growth monitoring, immunization, distribution of Take-Home-Rations (THR) and Iron and Folic Acid (IFA) tablets) as well as for IEC and SBCC (Paul, Singh, & Palit, 2018).

Chapter 2: Sectoral Analysis

Table 2-13: Participation under POSHAN Abhiyaan[60]

Participation	Male	Female	Total
Adult	51,69,02,008	77,87,07,002	1,29,56,09,010
Child	43,81,06,107	47,10,28,494	90,91,34,601
Total	95,50,08,115	1,24,97,35,496	2,20,47,43,611

POSHAN Abhiyaan focuses on convergence with NHM on various services and interventions such as- immunization, vitamin A and IFA supplementation, iron supplementation for children, deworming, ANC check-ups, management of acute malnutrition, diarrhea management (ORS+Zn) (Ministry of Women and Child Development, 2018).

Ministry of Panchayati Raj

Panchayati Raj Institutions (PRI)

Panchayats in India is an age-old institution for governance at the village level. Panchayati Raj Institutions (PRI) have been assigned several development activities including health and population stabilization. The Gram Sabha acts as a community level accountability mechanism to ensure that the functions of the PRI respond to people's needs (National Health Mission, 2016). Initiatives by MOHFW and donors in various states have focused on engaging PRIs in health programs. MOHFW has supported the development of a training module for community and women's health, which deals with Panchayat engagement. MOHFW has also implemented the community needs assessment, the National Maternity Benefit Scheme and the Referral Transport Scheme through PRI in various states. Most experiences have been positive but recognize that the capacity of PRI members and enabling environment for panchayats to function need further strengthening (National Health Mission, 2016).

The preparation of Gram Panchayat Development Plan (GPDP) had been mandated for economic development and social justice utilizing the resources available to the Gram Panchayats through convergence between Panchayati Raj Institutions (PRIs) and concerned Line Departments of the State. Ministry of Health and Family Welfare has been engaged with for 2 out of 29 subjects of the Eleventh Schedule of Constitution of India namely 1) Health and sanitation including hospitals, primary health centres and dispensaries and 2) Family Welfare (Kathiresan, 2019). GPDP focuses on multiple services like infrastructure development which includes physical connectivity and maintenance of public assets, skill building, development of localised SDG framework, e-Enablement of Panchayat etc.

Several challenges are arising from PRIs involvement, such as prioritisation of service providers and users, lack of communication and coercive unethical work (Kumar, Mishra and Anindya, 2016). However, there are some benefits associated with the involvement of the PRIs in service provisioning, including improved availability and regularity of healthcare providers at the health centres. Overall, the PRIs play an important role in healthcare provisioning, but their involvement is ineffective due to their partial capabilities and approach, which creates a non-conducive environment (Kumar, Mishra and Anindya, 2016).

The Kerala experience in strengthening PRIs, while not immediately and completely replicable, offers useful insights and lessons. Several factors influence the progress of decentralized planning and implementation such as political will and people's readiness to engage with decentralization (National Health Mission, 2016). PRIs in Kerala also have very strong institutional support in terms of the Kerala Institute of Local Administration (KILA). A case

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[60] http://dashboard.poshanabhiyaan.gov.in/aa/#/ ; last accessed on 20 August 2020

study has been presented in section 2.2.10.

Ministry of Human Resource Development

Sarva Shiksha Abhiyan (SSA)

Sarva Shiksha Abhiyan (SSA), a flagship program of the GoI under the MHRD aims at achieving Universalization of Elementary Education (UEE) in a time bound manner, as mandated by the 86th amendment to the Constitution of India making education free and compulsory for children in the age group of 6-14 years age group, a fundamental right (All India Council for Technical Education, 2019). It has been operational since 2000-2001.

SSA has a special focus on children of weaker sections. Various initiatives such as mid-day meal, free health check-ups etc have been undertaken in SSA to target these children. As per research studies, mid-day meal scheme has contributed towards the improvement of the health status (Deepti Singh, 2016). SSA supports health and physical education at the upper primary level. Under SSA, programs under the NRHM are mandated to undertake school health programs, including de-worming and micronutrient supplementation with special attention to vulnerable groups and girls approaching adolescence (Ministry of Human Resource Development, 2011).

Health plays an important role when it comes to girls' education. Malnutrition and lower family priority affect the capacity to learn for the girls (Ministry of Human Resource Development, 2011). Under SSA, school is involved general health check-up with follow up for girls.

Ministry of AYUSH

National AYUSH Mission (2014)

Mainstreaming of AYUSH was introduced via MoHFW to revitalize local health traditions and mainstream AYUSH into the public health system by increasing and improving availability of human resources in rural areas by convergence with AYUSH. The convergence initiatives included:

- Setting up of AYUSH units in CHCs/PHCs
- Strengthening through posting/appointment on contract of AYUSH doctors, over and above the Medical Officers posted
- Providing a choice to the States about integration of AYUSH human resources either through PHC or by new contractual appointment

Ministry of Rural Development

Pradhan Mantri Gram Sadak Yojana (2000)

The scheme aims to provide connectivity by way of all-weather roads to unconnected habitations for access to necessary services , education, health, markets, etc. (Wagale, Singh, & Sarkar, 2019).

Key Observations

Ministry of Health and Family welfare has multisectoral convergence approach involving different sectors and stakeholders to work towards achieving policy outcomes. Various convergence mechanisms exist at all levels for implementing national health programs:

Central Level – Mission Steering Group ; State Level – State Health Mission; District Level-District Health Mission; Village Level – Village Health Sanitation and Nutrition Committees, ASHAs.

Chapter 2: Sectoral Analysis

Across the study states we have observed that District Health Mission meetings are happening and helping the mission in coordination with other departments (EY Primary Analysis: KIIs, 2019). It was also observed that participation of senior officials from various departments was sub-optimal (EY Primary Analysis: KIIs, 2019). Planning in isolation of various department in relation to health departments which may lead to conflicts and duplication of efforts (Salunke & Lal, 2017).

Multisectoral convergence can be improved by - Joint formulation of BCC strategies and IEC material; Joint Planning at village, block and district level; Join management information system including common indicators; Joint training of key functionaries (Salunke & Lal, 2017).

Case Study 8- Patient Safety & Quality Improvement through Inter-Departmental Convergence under Swachh Bharat Abhiyan – Uttar Pradesh

Introduction:

The safety and quality of services provided by the public health facilities are interconnected with many other departmental activities apart from the health department. It is crucial to identify the critical bottlenecks that hinder collaboration. It is essential to streamline those processes and make the interdepartmental process self-driven and sustainable.

Key Stakeholders
- Health and Family Welfare Department UP
- Police
- Department of Excise
- Ministry of Urban Department
- Municipal corporation
- Disaster management department
- Police and Fire services
- Department of Medical education
- Public Works department
- Horticulture department
- Panchayati Raj institutions

Implementation of the practice

The key strategies followed on the initiative are as follows:

Identify the concerned departments for collaborative efforts	→	Identify the bottlenecks with each concerned department	→	Create ownership of responsibilities among stakeholder departments to encourage a proactive role
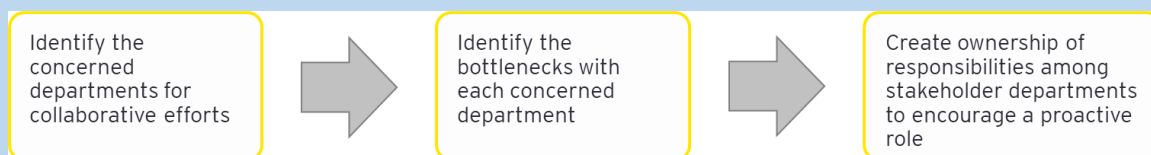
Bottlenecks with concerned departments found are listed below:

- Police and Fire services– Infrequent on-site hands-on trainings provided in a hospital
- Disaster Management department – Trainings not provided in health facilities
- Municipal corporations– Infrequent audits and check-ups
- Panchayati Raj institutions– Poor engagements with health-related issues. Social audits not done

- Horticulture department– No plans for maintenance of planted trees and gardens and long processing time for the request
- Public Works departments– Delayed response to requests for budgetary estimates
- Police – Inadequate support from home guards in facilities and inadequate crowd management support during emergencies and disaster.
- Ministry of Urban Department– Lack of awareness for compost pit for biodegradable waste
- Department of Excise– Delay in issue of licence for storage of spirit
- Department of Medical education– Poor emphasis on preventive aspects of medicine

Meeting convened by PS Health with secretaries of all concerned departments and commitment to change is secured from senior officials. Directives to eliminate bottlenecks were issued to district officials. Process improvements were monitored continuously.

Results

This project is considered as a first step for improving inter-departmental convergence. This convergence initiative enables the departments to share resources, such as finances, knowledge, and people. Also, collaborative effort creates mutual benefits for both departments like reduced cost, optimization processes, improved time efficiency, elimination of redundant activities etc.

Lessons Learnt

Involvement of many stakeholders makes the monitoring process and accountability of the initiative very complicated. Meetings have been held only at senior official level; all major stakeholders of the departments must be included to identify impediments in inter-departmental process. Conflicts between the departments might arise while defining the responsibility of the activities will fail to deliver to their full potential of the initiative.

Conclusion

The Standard Operating Procedures with the assurance of concerned departments will help in further improving the inter-departmental collaborative activities. Detailed sequence activities with clear roles and responsibilities, including time timeline for completion, will aid the process more self-driven and sustainable.

2.4   Upcoming Trends

Double burden of NCDs and CDs coupled with rapid urbanisation

India is facing a double burden of disease - with rising NCDs burden along with persistent communicable diseases. NCDs will dominate the future of healthcare in India.

The challenge is deeper with the pace of urbanization, in terms of air-pollution, vector borne disease outbreaks, lifestyle diseases, substance abuse and lack of basic civic amenities in growing slum population

Increased awareness for preventive care & AYUSH

Preventive healthcare lifestyle and treatment have been on the rise. It is estimated that India is home to 90 million health conscious individuals, and this is expected to rise to 130 million by 2022 (RedSeer Consulting, 2018). Preventive healthcare focusing on heart diseases, diabetes, hypertension, obesity, immunity enhancement, and depression are expected to be in demand.

Further, since 2014, there has been a focus on AYUSH and the demand for these treatments have also increased. It is expected that this demand shall increase further for the promotive, preventive and primary care

Technology Penetration

A paradigm shift is expected in the healthcare with current developments like AI, IoT, Drones, robotics, telemedicine, teleradiology, blockchain etc. Major challenges in the coming years are inter-operability and protection of patient privacy

Upcoming Trends

Medical Value Travel (MVT)

MVT involves activities relating to travel and hosting of a foreign tourist for the purpose of restoring, improving, maintaining health though medical interventions. India faces a challenge of unregulated facilitators

Ageing Population & Home-based Care

With increasing life expectancy in the country, the elderly population is expected to rise. Demand for health services like home-based care and palliative care will increase.

Further, Post COVID-19 pandemic, it is expected that home-based care might not only be restricted to elderly people. A shift towards increased home-based care might emerge as a preferred option for primary healthcare services

Focus on Atmanirbhar Bharat

India among the top-20 markets for medical devices in the world, which is expected to reach $ 50 bn by 2025. The number of ventilators manufacturers has grown to over 50 (around 1,000 ventilators daily) from eight before February 2020. Similarly, number of PPE manufacturers have increased to over 600 with an estimated 6 lakh personal protective equipment (PPE) kits.

Pharma is also expected to experience a domestic growth

Adequate regulation and facilitation would be required

2.5 Issues and Challenges

Affordability

- Share of OOPE in total household expenditure on healthcare in India is amongst the highest in the world (Salvaraj, 2018), with the highest spending on medicines of the total OOPE (National Health Accounts, 2019); (NSSO 75th Round, 2018).

- WHO's health financing profile for 2017 shows 67.78% of total expenditure on health in India was paid out of pocket, while the world average is 18.2%. As per National Health Accounts Estimates 2018, the OOPE as a % of total health expenditure has reduced from 69.4% in 2004-05 to 58.70% in 2016-17.

- 7% of population fall below the poverty line due to indebtedness for health expenditure (Shamika, Ahluwalia, & Bergkvist, 2016)[61].

- With limited resources available for the public healthcare services and partial insurance coverage, the average cost for healthcare and increasing catastrophic health expenditure is pushing more people below the poverty line (Kumar et al., 2015); (EY Primary Analysis: KIIs, 2019).

- Initiatives like free drugs, free diagnostics, free dialysis, free transport services (108, 102 ambulances) etc have been started by the Government. The impact for them is yet to be studied and can be carried out in future studies. Positive early signals of the initiatives have been observed, 51% of the households reported either decrease or no increase in OOPE on healthcare services during the last 5 years (EY Primary Analysis: Household Survey, 2019).

Equity

- Inadequate data reporting for health outcomes of tribal population and budget utilisation for TSP and SCSP observed.

- Gender budgeting under health programs across the sector has been observed to be missing.

Accessibility

- While considerable progress has been made in the last few years in improving access to health facilities and services in India, there remains a need to focus on infrastructure (both physical and human resource) as per the prescribed norms (both Indian and International standards).

- The average radial distance from the community for Sub Centres, Primary Health Centres and Community Health Centres has been 2.44 km, 6.04 km and 12.93 km respectively (RHS, 2019). While the difficulty in physical reach to the health infrastructure has been decreasing, India is behind in terms of population-based requirement of sub-centres, PHCs and CHCs. Lack of specialists at CHC leads to disproportionate pressure on higher level of health facilities.

- There has been an asymmetry in access to health facilities between the rural and urban population (RHS, 2019).

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[61] The study period of the paper is from 2004-2014.

Chapter 2: Sectoral Analysis

- The National Ambulance Services of 102 and 108 are not optimally available in all the states as per the standard population norms. Adequate availability of ambulances will increase the accessibility of health facilities (NHM Quarterly MIS Report March 2020).

Human Resources

- While an increasing trend in filling-up vacant posts for health workers is observed, shortage of specialists and mid-level health providers remains a concern towards delivering quality and continuum of services (RHS 2019, EY Analysis, 2019).

Quality and Hygiene

- Expansion of infrastructure supplies and human resources for health in our country over the period of time has extended the outreach of health care services in quantitative terms but much leaves to be desired in terms of quality and contents of care. This is also evident by the fact that steady improvement in institutional delivery coverage (78.9% as per NFHS-4) is not accompanied by a proportionate decline in maternal and neonatal mortalities (WHO, World Bank and OECD, 2018).

- Adherence to clinical practice guidelines in eight low and middle-income countries was below 50% in several instances resulting in low quality antenatal and child care and deficient family planning (WHO, World Bank and OECD, 2018).

Healthcare Financing

- India spends only 1.6% of its GDP, as public expenditure on health (Economic Survey, 2019). Substantial increase in allocation is required to achieve the target of 2.5% by 2025 (as set in NHP 2017).

Data Reporting

- External surveys such as Sample Registration System (SRS), District Level Household Survey (DLHS), and NFHS are available at a lag and different periodicity excluding the possibility of a real-time triangulation.

- There are disparities in the data reported in HMIS and NFHS for the same indicators measured across States and UTs.

- The setting up of HRMIS and facility of e-payslip generation through HRMIS are yet to be taken up in many States (NITI Aayog, 2019).

- Many States are also not updating HRMIS data regularly.

Governance

- Meetings held for the preparation of District Health Action Plans have been sub-optimal due to lack of stakeholders' involvement and participation at the senior level.

- Lack of coordination between State Health Mission and Directorate of Health Services has been observed in some states except for a few like Maharashtra, Tamil Nadu and Karnataka (EY Primary Analysis: KIIs, 2019).

- HRMIS database is not maintained/updated in most of the states. There is a need for a common data-sharing platform amongst different stakeholders (Directorate of Health Services, State Health Mission, State Health Society, Directorate of AYUSH) for information relating to recruitment, transfers, and postings of health officials.

Public health management cadre

- States like Tamil Nadu have established Public Health Cadre, while other states like Maharashtra and Madhya Pradesh have recognized the need to have public health cadre/ public health management cadre.

- Development of public health management cadre has been a discussion point amongst policymakers however, there has been limited efforts to establish a Public health management cadre in many states.

Local Government

- In States like Gujarat, Andhra Pradesh and Maharashtra, PRIs have been actively involved in monitoring of health programs (12th CRM, 2020).

- In a few states, lack of capacity for the active involvement of Local Government remains one of the major hindrances (EY Primary Analysis: KIIs, 2019)

- Local Government- Panchayati Raj Institutions (PRI) and urban local bodies have not been actively engaged in planning and monitoring of public health programs (Sukumar, Lal, & Mishra, 2019).

Sectoral recommendations have been discussed in Chapter 8.

Chapter 3: CSS- National Rural Health Mission

Umbrella Centrally Sponsored Scheme (UCSS)- National Health Mission (NHM)

Different CSS were introduced and listed under the UCSS NHM based on evolving needs. The Umbrella Centrally Sponsored Scheme NHM covers the following CSS:

CSS List	Year of launch
National Rural Health Mission	2005
National Urban Health Mission	2013
Tertiary Care Programme	2017[62]
Human Resources for Health and Medical Education	2009-12[63]
National AYUSH Mission	2015

The above-mentioned CSS are discussed in detail in the following chapters – 3 to 7.

The National Health Mission (NHM) encompasses two sub-missions: National Rural Health Mission (NRHM) and National Urban Health Mission (NUHM). The main program components include Health System Strengthening in rural and urban areas; Reproductive-Maternal-Neonatal-Child and Adolescent Health (RMNCH+A) and Communicable and Non-Communicable disease control program. NHM[64] envisions attainment of universal access to equitable, affordable, accountable and quality health care services, with effective inter-sectoral convergent action to address the wider social determinants of health.

3. National Rural Health Mission

Section 3.1 provides background of the CSS-National Rural Health Mission (NHM) detailing goals, objective, targets and other details of the CSS. Section 3.2 discusses the performance of NRHM (NHM). Section 3.3 highlights the issues and challenges of the CSS followed by recommendations for the CSS in section 3.4.

3.1 Background

National Rural Health Mission (NRHM) was launched in 2005 to undertake a shift in the public health system and to provide accessible, affordable and accountable primary healthcare services to poor households in remote parts of rural India. In 2013, the Government launched the National Urban Health Mission, targeting urban poor, which was then integrated with NRHM into a single **National Health Mission** or NHM (Ministry of Health and Family Welfare, 2013). NRHM and NUHM are two sub-missions of an over-arching **National Health Mission (NHM).**

The thrust of the Mission has been on establishing a fully functional, community owned, decentralized health delivery system with inter-sectoral convergence at all levels, to ensure simultaneous action on a wide range of determinants of health such as water, sanitation, education, nutrition, social and gender equality (Ministry of Health and Family Welfare, 2020). Institutional integration within the fragmented health sector was expected to provide a focus on outcomes, measured against Indian Public Health Standards for all health facilities. The long-term objectives and goals of NHM include the following (Ministry of Health and Family Welfare, 2017):

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[62] In 2017, seven schemes were clubbed together as Tertiary Care Schemes
[63] Programs under HRH & ME were launched between 2009-2012
[64] Due to common goals and objectives NHM and NRHM have been used interchangeably, in chapter 3

3.1.1 Objectives[65]

► Reduction in child and maternal mortality;

► Prevention and control of communicable and non-communicable diseases, including locally endemic diseases;

► Increase in access to integrated comprehensive primary health care;

► Population stabilisation, gender and demographic balance;

► Revitalization of local health traditions and mainstreaming of AYUSH;

► Universal access to public services for food and nutrition, sanitation and hygiene and universal access to public health care services with emphasis on services addressing women's and children's health and universal immunisation; and

► Promotion of healthy lifestyles.

3.1.2 Goals[66]

► Reduce MMR to 1/1000 live births

► Reduce IMR to 25/1000 live births

► Reduce TFR to 2.1

► Prevention and reduction of anaemia in women aged 15–49 years

► Prevent and reduce mortality & morbidity from communicable, non- communicable; injuries and emerging diseases

► Reduce household out-of-pocket expenditure on total health care expenditure

► Reduce annual incidence and mortality from Tuberculosis by half

► Reduce prevalence of Leprosy to <1/10000 population and incidence to zero in all districts

► Annual Malaria Incidence to be <1/1000

► Less than 1 per cent microfilaria prevalence in all districts

► Kala-azar Elimination by 2015, <1 case per 10000 population in all blocks

3.1.3 NHM Components

Under NHM, support to States/UTs is provided for five key programmatic components ((Minsitry of Health and Family Welfare, 2020):

► Health Systems Strengthening including infrastructure, human resource, drugs & equipment, ambulances, MMUs, ASHAs etc. under National Rural Health Mission (NRHM) and National Urban Health Mission (NUHM)

► Reproductive, Maternal, Newborn, Child and Adolescent Health Services (RMNCH + A)

► Communicable Diseases Control Programs

► Non-Communicable Diseases Control Program interventions up to District Hospital level

► Infrastructure Maintenance - to support salary of ANMs and LHVs etc

3.2 Performance

The performance of NHM[67] is mapped on the following discussion points in accordance to the achievement of objectives, targets and other contributions so far:

- Scheme Performance on key parameters (Core Health Outcome, Governance and Accountability, Community Processes, Technology, IEC, Equity)

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[65]https://pib.gov.in/newsite/PrintRelease.aspx?relid=159404#:~:text=The%20National%20Health%20Mission%20(NHM,wider%20social%20determinants%20of%20health. , last accessed on 14 August 2020
[66] https://nhm.gov.in/images/pdf/NHM/NHM_more_information.pdf; last accessed on 14 August 2020
[67] NRHM has majorly been discussed as NHM because it's difficult to severe the both for analysis. NUHM has also been separately discussed as a CSS in the next section

Chapter 3: National Rural Health Mission

- Financial Performance
- Output-Outcome Performance (Program Level)
- RESSI+E & Fischer Framework Analysis
- Cross Sectional Themes

3.2.1 Core Health Outcomes

NHM has led to substantial contribution towards reduction of mortality rates and fertility rates since its inception. The trends in reduction of mortality rates and fertility rate show a steady decline. India is moving towards meeting the NHP-2017 targets expect for a few indicators.

The long-term objectives of NHM include reduction of maternal and child mortality, population stabilisation, gender and demographic balance. The National Health Policy, 2017 aims at reduction of U5MR to 23 by 2025, IMR to 28 by 2019, MMR from current levels to 100 by 2020 and TFR to 2.1 or less by 2025.

Latest available data for India indicates the following progress: the TFR has been reduced from 2.9 in 2005 to 2.2 in 2018, IMR from 58 in 2005 to 32 in 2018 and the MMR was estimated at 113 in 2016-18 (SRS, 2006); (SRS, 2018-2020).

A. Population Stabilization

- *Total Fertility Rate*

12 large states out of 20, for which data is available, have reached the target replacement rate of 2.1 (2018) (Table 3-1). 2 more sates- Assam and Gujarat at 2.2 are likely to reach the target soon. 6 states have recorded a higher TFR than the national average of 2.2 — Uttar Pradesh (2.9), Bihar (3.2), Madhya Pradesh (2.7), Rajasthan (2.5), Chhattisgarh (2.4) and Jharkhand (2.5)- these accounted for more than 40% of the total population in 2011 Census.

Table 3-1: Total Fertility Rate

Category	States	2005[68]	2015	2018	2018 over 2005	2018 over 2015
	India	**2.9**	**2.3**	**2.2**	**-0.7**	**-0.1**
States with TFR ≥2.1	Bihar	4.3	3.2	3.2	-1.1	0
	Uttar Pradesh	4.2	3.1	2.9	-1.3	-0.2
	Madhya Pradesh	3.6	2.8	2.7	-0.9	-0.1
	Rajasthan	3.7	2.7	2.5	-1.2	-0.2
	Jharkhand	3.5	2.7	2.5	-1	-0.2
	Chhattisgarh	3.4	2.5	2.4	-1	-0.1
	Assam	2.9	2.3	2.2	-0.7	-0.1
	Gujarat	2.8	2.2	2.2	-0.6	0
	Haryana	2.8	2.2	2.1	-0.7	-0.1
States with TFR < 2.1	Odisha	2.6	2	1.9	-0.7	-0.1
	Karnataka	2.2	1.8	1.7	-0.5	-0.1
	Kerala	1.7	1.8	1.7	0	-0.1
	Maharashtra	2.2	1.8	1.7	-0.5	-0.1
	Andhra Pradesh	2	1.7	1.6	-0.4	-0.1
	Punjab	2.1	1.7	1.6	-0.5	-0.1
	Tamil Nadu	1.7	1.6	1.6	-0.1	0
	West Bengal	2.1	1.6	1.6	-0.8	0
	Himachal Pradesh	2.2	1.7	1.6	-0.6	-0.1
	J & K	2.4	1.6	1.5	-0.6	-0.1
	Delhi	2.2	1.7	1.5	-0.7	-0.2

Source: Sample Registration Systems Bulletin, 2018

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[68] The years for analysis have been selected on the following reasons: a) 2005- launch of the Scheme, b) 2015 -study period of this study (2015- 2020), c) 2018- year for latest available data

Trends vary along the rural-urban divide as well as the literacy levels of women. An "illiterate" woman is likely to give birth to 2.9 children on average in contrast to a "literate" woman having 2.1 children. The TFR for a woman with education levels of graduation or above is 1.4 children.

Figure 3-1 : Social Determinants (literacy) and TFR
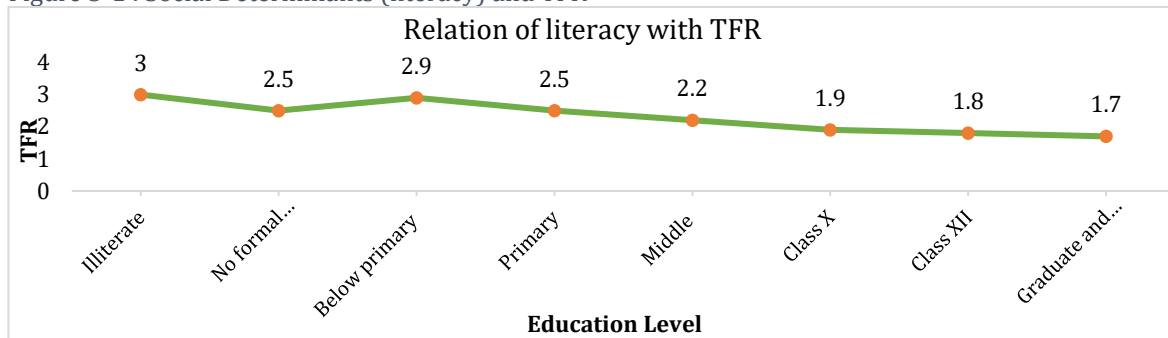
Source: Sample Registration Systems Bulletin 2018

Likewise, urban areas have been usually found to have a lower TFR than rural areas.

- *Crude Birth Rate*

8 States in the country have a crude birth rate of more than 20 (national average) – Assam, Bihar, Chhattisgarh, Haryana, Jharkhand, Rajasthan and Uttar Pradesh.

Table 3-2: Crude Birth Rate

States	2005	2015	2018	2018 over 2005	2018 over 2015
ALL INDIA	**23.8**	**20.8**	**20**	**-3.8**	**-0.8**
Andhra Pradesh	19.1	16.8	16	-3.1	-0.8
Assam	25	22	21.1	-3.9	-0.9
Bihar	30.4	26.3	26.2	-4.2	-0.1
Chhattisgarh	27.2	23.2	22.5	-4.7	-0.7
Gujarat	23.7	20.4	19.7	-4	-0.7
Haryana	24.3	20.9	20.3	-4	-0.6
Jharkhand	26.8	23.5	22.6	-4.2	-0.9
Karnataka	20.6	17.9	17.2	-3.4	-0.7
Kerala	15	14.8	13.9	-1.1	-0.9
Madhya Pradesh	29.4	25.5	24.6	-4.8	-0.9
Maharashtra	19	16.3	15.6	-3.4	-0.7
Odisha	22.3	19.2	18.2	-4.1	-1
Punjab	18.1	15.2	14.8	-3.3	-0.4
Rajasthan	28.6	24.8	24	-4.6	-0.8
Tamil Nadu	16.5	15.2	14.7	-1.8	-0.5
Telangana	-	17.8	16.9	-	-0.9
Uttar Pradesh	30.4	26.7	25.6	-4.8	-1.1
W. Bengal	18.8	15.5	15	-3.8	-0.5
Delhi	18.6	16.4	14.7	-3.9	-1.7
Himachal Pradesh	20	16.3	15.7	-4.3	-0.6
J & K	18.9	16.2	15.4	-3.5	-0.8
Uttarakhand	20.9	17.8	16.7	-4.2	-1.1

Source: Sample Registration Systems Bulletin 2018

Chapter 3: National Rural Health Mission

- *Spacing between Births*

The percentage distribution of second and higher order live births by the interval between current and previous live birth over the period of 2016-2018. It is reported that a gap of 3 years between second and higher order live births enhances the chances of survival of infants and aids in reducing the impact of population momentum on population growth (Ministry of Health and Family Welfare, 2020).

The Figure 3-2 shows that in India (2018) birth interval is less than the recommended period of 36 months in 50.4% of births. The percentage of births with birth interval between 24-36 months has been increasing since 2016, especially in rural population. This shows that there is a need for raising awareness and strengthening family planning programs to increase the percentage of second order births having an interval of more than the recommended period of 3 years. Male participation in family planning remains very low due to factors such as education, economic condition, social stigma, religious practices, gender roles and patriarchal notions. Combined with these factors, inefficient family planning programs have also been a key factor (Joshi, 2016).

Figure 3-2: Percentage distribution of second and higher order live births by interval
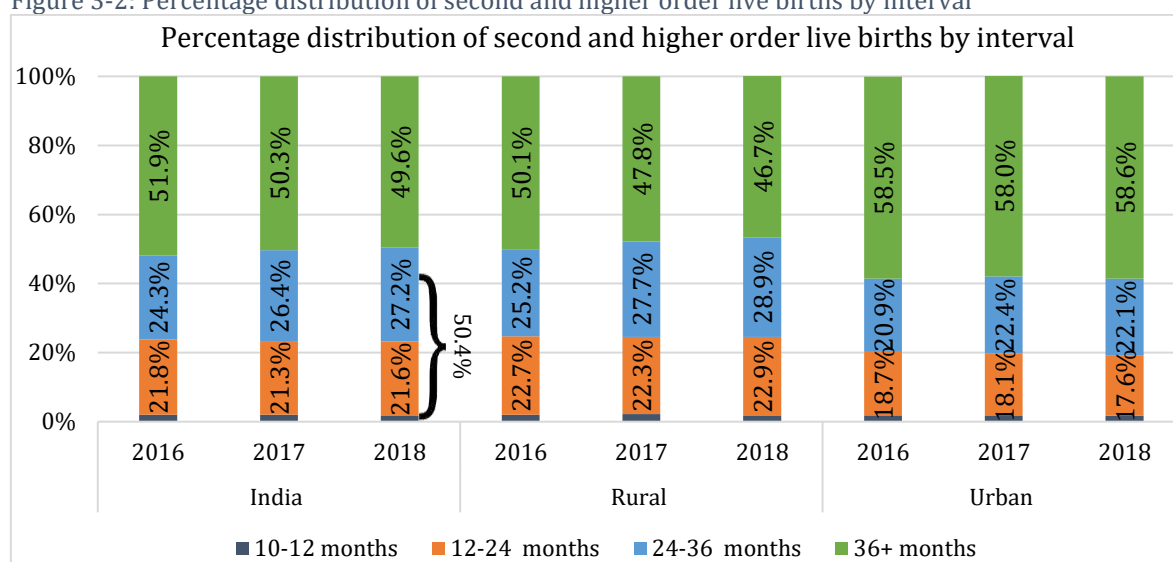
Source: SRS – 2016, 2017, 2018

The Government also launched Mission Parivar Vikas in 2016 to increase access to contraceptives and family planning services throughout 146 high priority districts across 7 high focus states (Assam, Bihar, Chhattisgarh, Jharkhand, Rajasthan, Madhya Pradesh and Uttar Pradesh) which recorded a TFR of 3 and above. Under family planning, Saarthi vans that have been used in counselling ~11.41 Lakh beneficiaries on family planning and distributed 203.89 Lakh pieces of condoms and 21.83 Lakh oral pill cycles in Mission Parivar Vikas districts in 2018-19 (Ministry of Health and Family Welfare, 2019). Total unmet need for Family Planning has decreased from 13.9 in 2005-06 to 12.1 in 2015-16 in the country (Ministry of Health and Family Welfare , 2015-16).

B. Infant Mortality

Accelerated decline in IMR and U5MR is one of the most NHM objectives. At the National level, IMR is reported to be 32 and varies from 36 in rural areas to 23 in urban areas in 2018 (SRS, 2018). Twenty states and union territories have attained the NHM goal of an IMR of 25 per 1,000 live births or less (SRS, 2017), as shown in Figure 3-3. As per the rate of decline from 2003 to 2017 it can be anticipated that India will achieve the target IMR of 28 per 1,000 live births set by

the National Health Policy. While the majority of large states have IMR of more than 25, data reveals an accelerated rate of decline, likely attributable to the improved access to healthcare that resulted from NHM. The IMR for India has been decreasing by an average of 2 point annually with an average annual rate of decline of 3.2% from 2005 to 2018.

While IMR has declined, the neonatal mortality as a proportion of infant mortality has been increasing over the past few years. This calls for further strengthening of interventions targeted towards improving new-born survival. The number of SNCUs, NBSUs and NBCCs has grown but the linkages of SNCUs with NBSUs and NBCCs are weak leading to weak the continuum of new-born care. Common challenges have been shortage of doctors and beds, and absence of mechanisms for timely repair of equipment (Neogi, et al., 2016).

Figure 3-3 :IMR and U5MR for India-Large States
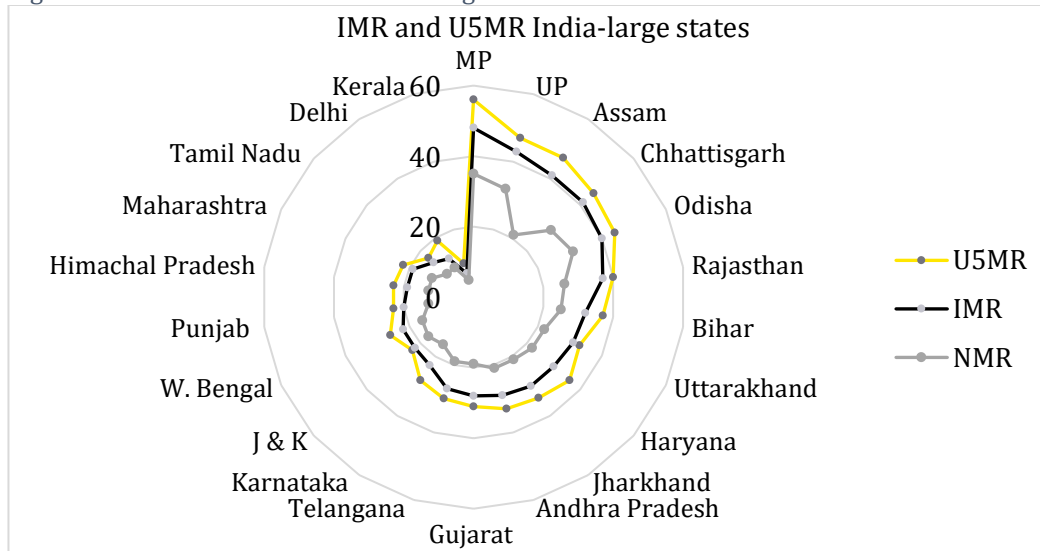
Source- Sample Registration Systems Bulletin, 2018

Despite these overall encouraging trends, and sustaining the current accelerated rate of decline, national IMR is still be more than the target of 25 per 1000 live births and the target seems achievable in 2022. This will only be possible with sustaining the progress and efforts made to ensure better new-born care.

Case Study 9 – Hridayam in Kerala

Introduction

HRIDYAM is a web-based solution for system management of care of children with Congenital Heart Disease (CHD). The website can be used as web-based registry for CHD cases across Kerala, monitoring the progress of program envisaged for management of children with CHD, identify the bottlenecks for implementing the protocols established at any point, understand the case status and response time for systems in place and ultimately the outcome of the program is one of the major reasons for the fall in Kerala's IMR to 5.6.

To reduce the IMR level which has been stagnated at 12 for the past few years, Government of Kerala came with a state-of-the-art initiative to reduce the response time to treat children with CHD.

Key stakeholders
- Government of Kerala
- NHM

- Empanelled Private Hospitals
- Beneficiaries: All the children of Kerala with CHD

Implementation of the practice

- Hridyam.in website is a liaison to do case registration for public, Hospitals and (District Early Intervention Centre) DEIC. The case can be registered for babies after birth, during foetal development and any kid in Kerala under the age of 18.
- Foetal heart registration is also provided in case if CHD is detected before birth. This helps to plan the child delivery and paediatric heart surgery of the child.
- Once the case is registered by any target beneficiary. The case will be notified to concerned DEIC of the district where the child lives. During case registration immediately on filling in the basic information, the child will get an automatically generated unique registration number which will be used as Case Number for the case.
- On getting alert on case registration DEIC will check whether all forms are filled. On completion of registration (completing all five steps of registration and verification by DEIC) the case will be categorised primarily into categories 1,2 or 3 and will be reflected on the table put in the dashboard.
- Five Paediatric Cardiologists are identified across Kerala who will give the opinion on cases online reviewing the case findings, investigation reports including ECHO findings as video and seeing the patients directly in case if the forwarded information is not enough.
- Paediatric Cardiologist will categorise cases based on the diagnosis, clinical condition and urgency to do the case as per the predefined categories. Category 1 (a-g), Category 2 A (1-3) primary and category 2B (1-3) staged procedures and category 3 Medical Follow up, so that surgery dates may be fixed by the institutions.
- Paediatric cardiologists will give opinion on individual cases and forward the same to SCTIMST or MCH Kottayam. These institutions will give surgery dates to individual cases as per the set protocol for each category.
- In case if the paediatric cardiologist is unable to reach a conclusion based on the available data, the child will be called for a review and the DEIC concerned will facilitate the same.
- Those cases clinically sick and severe will be put in the category 1a class automatically and this will be done by capturing six current clinical parameters. After categorising these cases, Paediatric cardiologist will forward all cases to SCTIMST or MCH Kottayam to get dates for surgery. They will review the cases, Diagnosis put by paediatric cardiologists, documents available, and will give dates which is the earliest for them. The system is set in such a way that these institutions can give dates that are within the timeline specified under the categorisation and the dates start from the date of birth.
- If the allotted dates are beyond the permitted dates, cases will be automatically referred to empanelled hospitals. All empanelled hospitals have individual login ids and they can see all the documents and reports so that they can allot the slots which are the earliest for them. All the empanelled hospitals will provide dates for any single case and the selection of facility will be based on the choice of the family.
- This process will be visible to DEICs and State level admin. DEICs will facilitate the process of referral to Empanelled hospitals by coordinating with the family that includes getting the choice of family to go to which facility. Based on all these procedures state level admin will give a preauthorisation to the empanelled hospitals to take up the case with them.
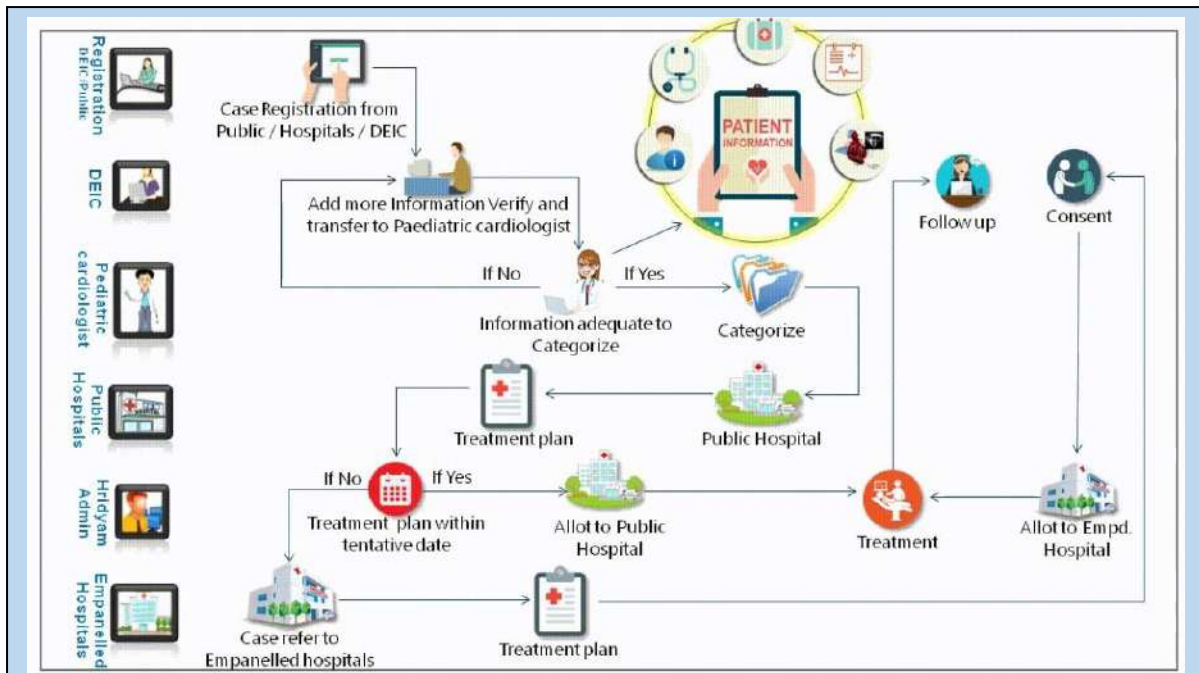
Resource utilization: This project requires a website and electronic health record management system have been developed. The rest of the project uses Information Communication Technology (ICT) to eliminate the bottleneck in the administration and to provide faster and timely treatment for the children with CHD. Empanelling Private Hospitals using PPP model enables increase in the capacity whenever required.

Results of the practice

Kerala being one of the forerunners in public health care registered a new record of infant mortality rate to 5.6 (according to NFHS-4 report) from 12. This program is one of the major interventions for the reduction of Kerala's IMR level approaching to a developed nation.

Lessons learnt

Creating awareness of the program was difficult, so for creating public awareness both formal communication like hoardings at public hospitals, newspaper ads etc. and for easy informal communication like a Facebook page Hridyam, a separate WhatsApp number and a twitter account Hridyam are used.

Conclusion

This program has an easy replicability with the current developments of Information and Communication Technology in India. This program majorly identifies the bottlenecks, eliminates it with the help of technology and makes use of the existing resources proficiently.

Further Readings
https://hridyam.in/hridyam.php
http://rchiips.org/nfhs/NFHS-4Reports/Kerala.pdf

C. Maternal Mortality

India's Maternal Mortality Ratio (MMR) has seen a decline from 130 per 1 lakh live births in 2014-2016 to 113 per 1 lakh live births in 2016-2018. A decline of 17 points (13.07%) was observed during this period. Nearly 2,000 maternal deaths have been averted per year. The rate has

declined from 130 in 2014-2016 and to 113 in 2016-18, registering a 6.7 per cent annual reduction from 2014-16 to 2016-2018.

While Telangana has shown the highest percentage decline in MMR followed by Maharashtra, five States- Chhattisgarh, Uttarakhand, Kerala, Punjab and West Bengal have shown an increase in MMR from 2015-17 to 2016-18 (SRS MMR Bulletin, 2020). Rajasthan, Uttar Pradesh and Odisha have recorded the highest absolute decline in MMR. The decline has been most significant in EAG States and Assam from 188 to 161. Among the Southern States, the decline has been from 77 to 67 and in the other States from 90 to 83. Five states — Kerala, Maharashtra, Tamil Nadu, Telangana, Andhra Pradesh — have achieved the WHO's Sustainable Development Goal of reducing the MMR below 70. So far, 11 major states have achieved the National Health Policy target MMR of 1/1000 live births well ahead of the timeline.

The major complications that account for nearly two-thirds of all maternal deaths are severe bleeding (mostly bleeding after childbirth), infections (usually after childbirth), high blood pressure during pregnancy (pre-eclampsia and eclampsia), complications from delivery and unsafe abortions[69].

Focus on quality and coverage of health services through public health initiatives under NHM has been the major contributor to the decline. Some of the recent initiatives are- LaQshya, Poshan Abhiyan, Janani Suraksha Yojana, and Pradhan Mantri Surakshit Matritva Abhiyan, Pradhan Mantri Matru Vandana Yojana. Implementation of the Aspirational Districts Program and inter-sectoral action has helped to reach the most marginalized and vulnerable populations. Recently, launched Surakshit Matritva Aashwasan Initiative (SUMAN) especially focuses on zero preventable maternal and new-born deaths. The continuous progress in reducing the MMR will help the country to achieve the SDG 3 target of MMR below 70 by 2030.

Figure 3-4 : MMR India-Large States
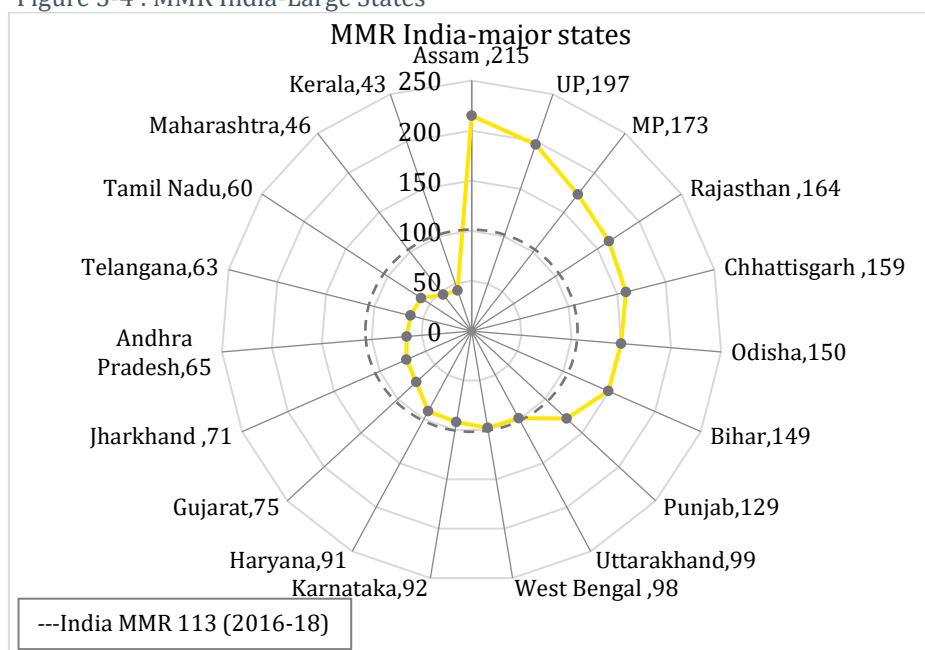
Source- Sample Registration Systems MMR Bulletin, 2019

There has been a steady improvement in the core maternal and child health indicators. This improvement has shown a modest but significant acceleration in the period since the inception

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[69] https://www.unicef.org/india/what-we-do/maternal-health

of NHM. Under NHM, institutional delivery has increased from 40.8% in 2005-06 (NFHS-3) to 78.9% in 2015-16 (NFHS-4) while safe delivery has simultaneously climbed from 52.7% to 81.4% in the same period. JSY has contributed in promoting institutional delivery (EY Primary Analysis: KIIs, 2019).

Table 3-3: Percentage of pregnant women receiving pre-natal care and post-natal care

Percentage of pregnant women receiving pre-natal care and post-natal care						
	Rural			Urban		
	2004	2014	2018	2004	2014	2018
Pre-natal	69.8	88.7	97	83.6	92.9	98
Post-natal	62.6	77.1	87	72.9	84.1	90

Source: NSS 71st and 75th Round

The highest burden of mortality remains in the States of Assam, Uttar Pradesh, Madhya Pradesh, Rajasthan, Chhattisgarh, Bihar and Odisha which also accounts for ~45% population of the country (SRS Report, 2019) (SRS MMR Bulletin, 2019). But these states are also disadvantaged in terms of socio-economic determinants of health, which impact health indicators in many ways directly and indirectly.

D. Social Determinants

The role of social determinants in health outcomes needs to be recognized and addressed even as the gains in core health outcomes from various initiatives under NHM are been acknowledged. The role of infant, child and adult nutrition, literacy, particularly amongst girls; access to clean drinking water and sanitation facilities and gender equity are contributing determinants of good health which have a direct correlation to maternal, new-born, and infant health (NITI Aayog, 2017); (Dar & Bhat, 2017) . SRS 2017 demonstrates an inverse linear correlation between total fertility rates and female literacy.

Low access to drinking water and sanitation contributes to a high disease burden in rural and urban areas. ~48% of the households in the rural areas and ~86% of the households in the urban areas had bathroom and latrine both within household premises (NSSO 76th Round, 2018) and less than half of the population (~40%) has access to drinking water within the premises of their homes (NSSO 76th Round, 2018). Most of the surveyed households (~82%) had some form of a formal latrine while ~18% had no access to latrine near their households (EY Primary Analysis: Household Survey). Clearly, acceleration of gains in health outcomes will now require greater attention to social determinants through convergent action by multiple stakeholders and cannot be limited to health systems improvement alone.

Key Findings

- There has been a steady improvement in the core maternal and child health indicators. This improvement has shown a modest but significant acceleration in the period since NHM inception.

- While IMR has declined, the neonatal mortality as a proportion of infant mortality has been increasing over the past few years. This calls for further strengthening of interventions (such as SNCUs) targeted towards improving new-born survival (EY Primary Analysis: Facility Survey, 2019).

- Various initiatives launched as part of RCH programs under NHM have contributed significantly to the decline in maternal and infant mortality rates and should be continued to sustain the success and positive impact made.

- The percentage of births with spacing between 2-3 years has been increasing since 2015, especially among rural population. Need is observed for raising awareness and strengthening family planning programs, to increase the percentage of second order births having an interval of more than the recommended period of 3 years.

- Male participation in family planning remains very low due to factors such as education level, economic condition, social stigma, religious practices, gender roles and patriarchal notions (Joshi, 2016).

3.2.2 Governance and accountability

The Governance and Accountability has been discussed with respect to A) Insitutional framework; B) Decentralized planning, C) Institutions for Technical Assistance and Knowledge management, and D) Convergence.

Monitoring and control of the mission is done at national, state, district and block level. PIP and action plans are made with decentralized bottom-up approach taking in considerations local needs. Convergence with different ministries has led to successful implementation of various initiatives. NHM has also supported through implementation of various legislative bills/act like PNCDT act, public health bill etc. in the sector.

A. Institutional Framework

NHM is governed by the Department of Health and Family Welfare under the Ministry of Health and Family Welfare.

A. National level

At the National level, the Mission Steering Group (MSG) and the Empowered Program Committee (EPC) are in place. The MSG provides policy direction to the Mission. The Union Minister of Health & Family Welfare chairs the MSG. The convenor is the Secretary, Department of Health & Family Welfare and the co-convenor is the Additional Secretary & Mission Director. The MSG also includes well known public health experts from both academia and civil society. Financial proposals brought before the MSG are first placed before and examined by the EPC, which is headed by the Union Secretary of Health and Family Welfare.

The Mission is headed by a Mission Director, of the rank of Additional Secretary, supported by a team of Joint Secretaries. The Mission handles not just the day-to-day administrative affairs but is also responsible for planning, implementing and monitoring activities (Ministry of Health and Family Welfare, 2014). The MSG and EPC meet regularly once and twice a year respectively.

Due to this structure of NHM, it is able to function in "mission mode" and allows for flexibility in decision making, introduction of innovations and decisions to be made in a timely manner (EY Primary Analysis: KIIs, 2019). Decision making under these committees are largely for priority setting and financial approvals than strategic or technical matters (IIPH & IIM-A, 2020). Items on the agenda of the EPC and MSG range in value from INR 1 crore to INR 2,500 crore – this is a great variation (IIPH & IIM-A, 2020).

Table 3-4: NHM Institutional Support

National Level bodies for governance and institutional support	Constitution	Functions
Mission Steering Group (MSG)	Chaired by the Union Minister for Health and Family Welfare	Provides policy direction to the mission.
Empowered Program Committee (EPC)	Headed by the Union Secretary	Reviews financial proposals for the Mission.
National Program Management Unit (NPMU)	Headed by a Mission Director and supported by a team of Joint Secretaries and PMU	Responsible for planning, implementation and monitoring of the Mission operations.
National Health Systems Resource Centre (NHSRC)	23-member Governing Body - Secretary, MoHFW and Mission Director, NHM are the Chairperson and the Vice Chairperson respectively	Assists in policy and strategy development for technical assistance to the states. Also provides capacity building support to MoHFW and the states.
National Institute for Health and Family Welfare	The Governing body is headed by Minister of Health and Family Welfare and Secretary (Health & FW) as Vice-Chairman. The GB is supported by Standing Finance Committee and Program Advisory Committee	Autonomous organization under MoHFW, acts as an apex technical institute as well as a 'think tank' for the promotion of health and family welfare programs and also provides training support.

B. State level

At the state level, the State Health Mission and the Governing Body (GB) of the State Health Society and the District/City Health Society would serve as the primary mechanism of holding program executives accountable. They are supported by State Program Management Unit (SPMU), State Health Systems Resource Centre (SHSRC) and State Institutes for Health and Family Welfare (SIHFW). The role of decentralised planning at state level is carried out by SPMU with support from many agencies including SIHFW in few States/UTs.

Whilst the Governing Board is a governance institution, which meets once a year, both the Executive Committee and the SPMU meet more often (at least thrice a year) and are the management organisations which are accountable and also ensure the adequate coordination and participation of the Directorate of Health Services.

The directorate in the States is responsible for the planning and delivery of public health services. The directorate receives funds for the implementation and monitoring of disease control and eradication programs. The integration and coordination between the State Health Society and directorate differs in different States (IIPH & IIM-A, 2020). It was also observed that the directorate played minimal or no role in various administrative and financial functions related to public health delivery specially with respect to PIP processes (IIPH & IIM-A, 2020).

Multiple institutions exist with lack of clarity about their respective roles, eg. SHM, SHS, SIFHW, SHSRC, TSU, especially in Uttar Pradesh (IIPH & IIM-A, 2020). Some of their roles are clear and complementary, but at times their efforts are overlapping, duplicated and also increase the ambiguity about their role. A need for rationalization of the institutions, programs and corresponding Human Resources Management was observed (IIPH & IIM-A, 2020).

There is no State wise statistical and narrative report of NHM, which is highly desirable (IIPH & IIM-A, 2020).

Chapter 3: National Rural Health Mission
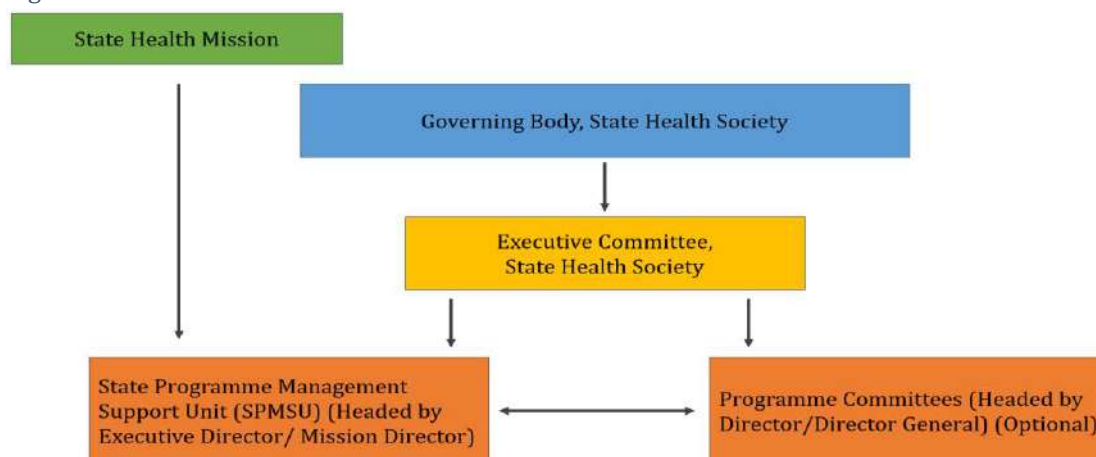
Source: Ministry of Health and Family Welfare

State Health Mission

The State Health Mission (SHM) chaired by the Chief Minister of the State would supervise, monitor and guide the mission.

- Monitor the functioning of the health systems
- Policy issues and discussion in the health sector matters related with health sector
- Review of progress in implementation
- Ensure inter-sectoral co-ordination
- Any advocacy measures

State Health Society

I. Governing Body

The Governing Body chaired by the Chief Secretary undertakes the following functions:

- Approval of action plans for the NHM
- Consideration and evaluation of proposals for institutional reforms in the H&FW sector
- Review of implementation of the Annual Action Plan
- Inter-sectoral co-ordination
- Follow up action on decisions of the State Health Mission
- Co-ordination with NGOs/Donors/other agencies/organisations

II. Executive Committee

The Executive committee chaired by the Principal Secretary/Secretary undertakes the following functions:

- Review of expenditure and implementation
- Approval of proposals from districts and other implementing agencies/District Action Plans
- Execution of State Action Plans that are approved, including release of funds for programs as per SAAP
- Release of funds to District Health Societies
- Ensuring intra-sectoral and inter-sectoral co-ordination
- Follow up actions for the decisions taken by the Governing Body

III. Program Committee for Health & Family Welfare Sector

While the Executive Committee would execute the action plans that are approved. It lies at the

discretion of the states to constitute Program Committees for the National Programs to ensure effective planning and review of each of the initiatives.

IV.   State Program Management Support Unit (SPMSU)

SPMSU headed by the Mission Director will constitute a panel of experts in human resources, M&E, Behavior Change Communication (BCC) and other technical areas. This unit would provide the required technical support to the State Health Mission.

The actual release of funds could be done by either the concerned Program Management Unit or SPMSU depending on the model adopted by the State. The responsibility of financial management which includes tracking funds, preparation of utilization certificates and audit of the society is done by the SPMSU.

The State Program Management Unit (SPMU), State Health System Resource Centres (SHSRC) and the State Institutes of Health and Family Welfare (SIHFW) have similar roles to the institutes at the Centre.

C. District level

The District Health Mission and the City Health Mission are responsible for implementation and review of the Mission at their respective administrative levels. They are supported by District Program Management Units (DPMU) which are linked to District Health Knowledge Centres (DHKC), District Training Centres (DTC) and District Health Societies (DHS) (Ministry of Health and Family Welfare, 2014).

The DPMU is made up of both contractual specialist management staff and regular program officers who come under the directorate. The district panchayat members are usually represented, and in some states, serve as chairpersons or vice-chairpersons of the Governing Board. While much more can be done to make these bodies even more dynamic, in most states their functionality and leadership role have been established. A total of 33 State Health Society meetings and 1265 District Health Society meetings were held across the country in 2018-19.

Figure 3-6: Institutional structure at the District level
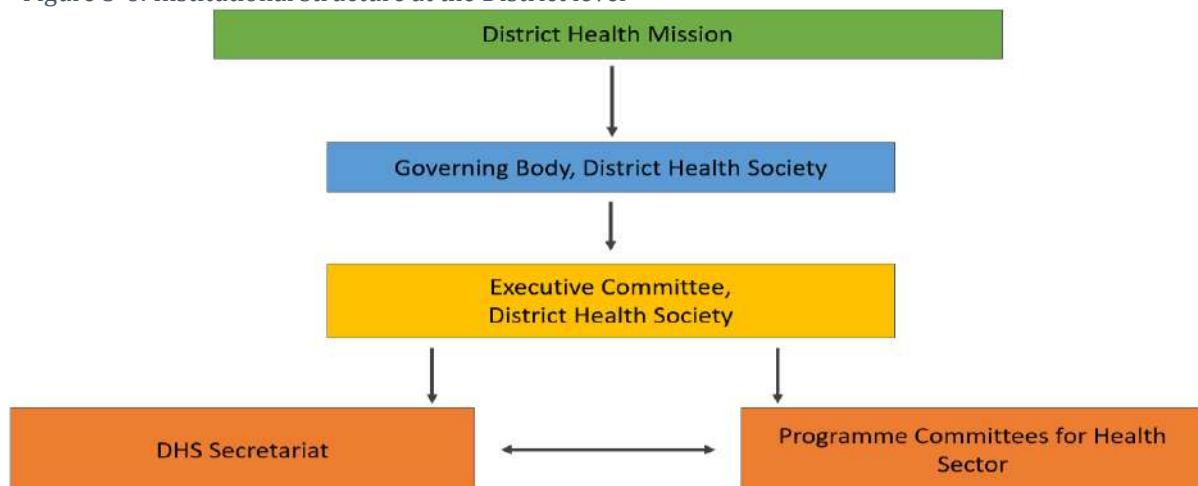
Source: Ministry of Health and Family Welfare

The governing body chaired by the District Collector/District Magistrate/CEO Zilla Parishad is responsible for inter-sectoral convergence and integrated planning. The executive functions of the ZP / ULBs and/or the district health administration would be done by the respective bodies, but DHS would provide these three bodies a platform to coordinate and discuss with each other and the district program managers.

Chapter 3: National Rural Health Mission

Technical assistance would be provided by the District Health Knowledge Centre (DHKC). The District Program Management Unit (DPMU) will be linked to DHKC. The District Training Centre (DTC) would be responsible for training requirements of the District Health Society (DHS).

D. Facility level

In order to improve management and quality of services, the NHM framework has provided for constitution of Rogi Kalyan Samitis (RKS)/Hospital Management Committees. These committees were introduced in 2005 to hold the healthcare facility administration and management accountable for ensuring access to equitable and high-quality services with minimal financial hardship to service users. RKS governance structure is designed to include representatives of the public such as MLAs, panchayat members, civil society representatives and eminent citizens. Efficient activities and operations of Rogi Kalyan Samitis can help improve patient experience and satisfaction at public health centres (Adsul & Kar, 2013).

RKS are provided with untied funds for the following activities:
   a. Improvement and maintenance of physical infrastructure
   b. Maintenance of cleanliness and beautification
   c. Referral transportation (in case of emergency when 108 and 102 ambulances are not available)
   d. Linen and laundry
   e. Security arrangements
   f. Epidemic preparedness
   g. Actions to improve access to healthcare

The financial norms for RKS are described in Table 3-5.

Table 3-5: Facility level funding or grants

Public Facility	Corpus Grant	Annual Maintenance Grant	Untied funds
PHC	1,00,000	50,000	25,000
CHC	1,00,000	1,00,000	50,000
District Hospital	5,00,000	NA	NA

Source: Guidelines for Rogi Kalyan Samitis, 2015

The mandatory creation of a hospital management society (Rogi Kalyan Samiti/RKS) and empowering this body with untied funds has allowed public participation also contributed to improved quality of services through repair and maintanence of public facilities making them more accessible and cleaner. RKS members were trained and sensitized on the quality of care issues. Before the onset of NHM, many states generated funds from user fees, however the untied grants to all public health facilities were made available under NHM which reduced financial barriers to access yo health care. This is evident from the increased utilization of indoor and outdoor services at health facilities as discussed in section 2.2.6. The RKS also provides for the involvement of Panchayati Raj members, civil society organisations and officers of various government departments whose cooperation is needed for the effective functioning of health facilities.

The role of the RKS was seen to be limited to government provided untied funds. Very few RKS were able to generate additional funds. Further, the RKS objectives of civil engagement and community inclusion were lost due to the lack of authority and responsibility afforded to this body (EY Primary Analysis: KIIs, 2019).

Village Health, Sanitation and Nutrition Committees (VHSNCs): have been constituted at the revenue level with leadership from the gram panchayats. 98% of the VHSNCs that have been constituted have operational joint bank accounts (National Injury Surveillance, 2019). VHSNCs play an important role as part of community monitoring and accountability mechanisms. They are also an important element of decentralised planning.

B. Decentralized Planning

In NHM, decentralized planning process was designed as a core system strengthening instrument of public health service delivery mechanism and has been initiated in several states such as Bihar, Chhattisgarh, Nagaland, Odisha and Maharashtra. However, most of the states are reported to be practicing top to bottom planning (12th CRM, 2020).

Limited use of HMIS data, supervisory feedback or grievance related data by States for preparation of District Health Action Plan and the planning is mostly limited to budgeting of ongoing activities (12th CRM, 2020). Incorporation of community needs in planning has been therefore missing in the current process of planning. The role of decentralised planning at state level is carried out by SPMU with support from many agencies including SIHFW in a few States/UTs. The absence of institutional mechanism in the states and undefined role of SIHFW in planning process has been observed (12th CRM, 2020). The role of SIHFW is limited to in-service capacity building, which has also not been happening satisfactorily due to lack of adequate and competent faculty, in most of the states (12th CRM, 2020); (EY Primary Analysis: KIIs, 2019).

C. Institutions for Technical Assistance and Knowledge management

NHM design recognises the need of technical assistance to help states and the Centre to plan for institutional reform, build capacities for public health action and design creative and innovative solutions to persistent constraints and bottlenecks in strengthening public health systems.

National Health Systems Resource Centre (NHSRC) acts as the apex institution for technical assistance and evidence-based policy/strategy development and State Health Systems Resource Centre (SHSRC) provides additional technical support to the State's Department of Health and Family Welfare. The National Institute of Health and Family Welfare (NIHFW) acts as an 'apex technical institute' as well as a 'think tank' for the promotion of health and family welfare programs in the country. The NHSRC's mandate is to assist in policy and strategy development in the provision and mobilization of technical assistance to the states and in-capacity building for MoHFW at the centre and in the states. One major function of the NHSRC has been to assess progress through the Common Review Missions and to evaluate program components of the NRHM to improve their design and implementation.

The major areas of technical assistance are in building capacity for improved public health planning, development of health management information systems, innovation for quality improvement in public health facilities, designing evaluation studies, support to human resources policy development and resource support for all programs related to community-level processes.

National Health Innovation Portal has been put in the public domain by MoHFW. The state governments are encouraged to upload innovative health projects aimed at improving health care services and being implemented in their geographical regions on this portal for review and replication by other states.

Chapter 3: National Rural Health Mission

D. Convergence

Convergence mechanisms have been discussed at sector level in section 2.3.

Some of the examples for intra-sectoral convergence of NHM, MoHFW includes:

- Intra-sectoral convergence with Women & Child Development (WCD) and Education department for RBSK and Weekly Iron Folic Acid Supplementation (WIFS) program in states like Assam, Bihar, Chhattisgarh, Karnataka, Odisha, Nagaland, Uttarakhand and Punjab.
- In Andhra Pradesh, Inter-sectoral coordination has been established with Udyana Vanam Shakha (Department of Horticulture) for sapling plantation to provide green leafy vegetable to pregnant and lactating women.
- In Maharashtra, Panchayati Raj Institution has been instrumental in converging all line departments. NUHM-SBM-NULM convergence has been initiated in most states of the country.
- MoHFW partnered with the Directorate of Field Publicity (DFP), a media unit under the Ministry of Information & Broadcasting, to create enhanced awareness about the Ayushman Bharat program and other select schemes of the Government through the mid-media and inter-personal activities in various districts across the country.

E. Legislations

Support is provided by the NHM on the implementation of legislations on public health; viz, PCPNDT, MTP, CEA, DISHA Bill, Public Health Bill etc. Under NHM PCPNDT act got major impetus and funding support continues for its implementation. Central teams visit States for implementation support. Amendment of the MTP act, funding for implementation of Clinical Establishments Act is ongoing. It is only under NHM that the two important draft bills were prepared; one for the protection of digital information in healthcare and the other on public health, which is more significant in the time of Corona.

Key Findings

- Central funding through NHM has led to equitable allocations

- Most states have not developed or are not using the institutional mechanisms to ensure decentralized planning (12th CRM, 2020). Limited use of HMIS data (including the extent of data, periodicity of collection of data, and quality), supervisory feedback or grievance related data for preparation of District Health Action Plan by States (12th CRM, 2020).

- Multiple institutions exist with lack of clarity about their respective roles, eg. SHM, SHS, SIFHW, SHSRC, TSU etc. (IIPH & IIM-A, 2020).

- Convergence with different ministries and departments such as WCD, education, water & sanitation etc. has led to various successful initiatives such as POSHAN, ICDS etc. Emphasis has been made by various stakeholders in strengthening convergence and involvement of various ministries and departments for improvement in health outcomes (especially concerning urban health).

- Lack of coordination between State Health Mission and Directorate of Health Services has been observed in some states except for a few like Maharashtra, Tamil Nadu and Karnataka (EY Primary Analysis: KIIs, 2019). This leads to a lack of ownership and horizontal integration resulting in inefficient delivery of public health services over a period (IIPH & IIM, 2020). Accurate data reporting and data integrity have been identified as areas of improvement for

HMIS. Use of HMIS data in planning health activities has to be emphasised to address local health needs (12th CRM, 2020); (EY Primary Analysis: KIIs, 2019). There is no State wise statistical and narrative report of NHM, which is highly desirable (IIPH & IIM-A, 2020).

- HRMIS database is not maintained/updated in most of the states. There is a need for common data sharing platform amongst different stakeholders (Directorate of Health Services, State Health Mission, State Health Society, Directorate of AYUSH) for information relating to recruitment, transfers and postings of health officials (EY Primary Analysis: KIIs, 2019).

3.2.3   Community process

The Community process is discussed in regard to the following heads: A) ASHA Program, B) Village Health Sanitation & Nutrition Committee (VHSNC), C) Rogi Kalyan Samiti, and D) Mahila Arogya Samitis

NRHM brought about a significant change in the role and scope of community participation. Major initiatives under community process were formation and financing of village health, sanitation and nutrition committees; and Rogi Kalyan Samitis which substantially increased public participation in all public health care facilities ranging from the village level sub-centre to the district hospital.   Important innovations such as community monitoring and civil society involvement in district health planning further enhanced community participation. The most visible face of NRHM is the ASHA, the female community health worker. The ASHA program has generated global interest and is the subject of several studies and evaluations.

A. ASHA Program

One of the main components of NRHM (2005) was to bridge the gap between the healthcare delivery system and the community. The key action plan was to create ASHA worker cadre, volunteers from within the community itself trained to meet community health needs in the health care delivery system. ASHA roles included maternity and child health, nutrition, ailment, hygiene, family planning, basic ailment treatment etc. With the coming of NHM (2013), ASHA's responsibilities extended to VHSNC (Village Health Sanitation and Nutrition Committee), raising awareness about WASH practices, also acting as drug depository for AYUSH making it into a holistic approach of health care at community level (Surekha, Fathima, Agrawal, Suguna, & Misquith, 2019).

- *Performance of ASHA program*

The recruitment of ASHAs has been steadily improving. As of January 2019, 95% of ASHAs were in position in rural areas against the target. And 88% of ASHA in urban areas were in position against the target as shown in Figure 3-7 below.

Figure 3-7 : ASHA workers Targeted v/s selected
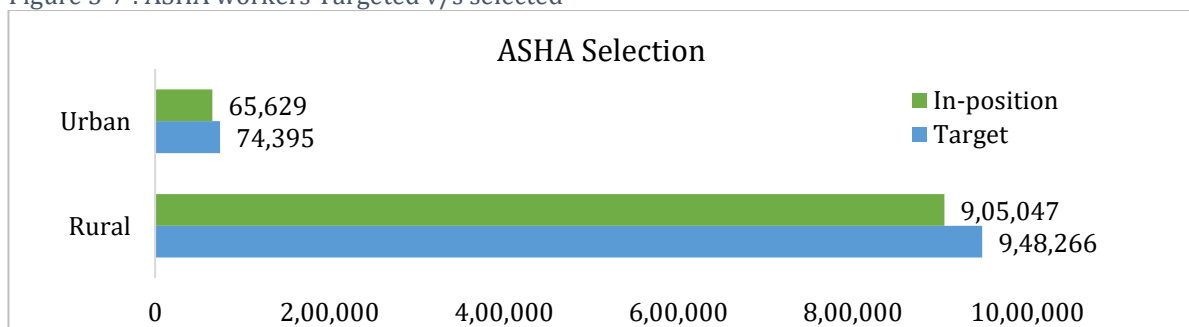
Source: Update on ASHA Program, January 2019

Chapter 3: National Rural Health Mission

ASHA program was launched as a community led demand initiative to strengthen RMNCH+A services. Additionally, they are being incentivised on multiple programs such as NTEP (erstwhile RNTCP), NLEP, WASH etc. Over a period of time, ASHAs have been treated as a part of the public health system as a supply side resource. It is proposed to explore the implications of such a change from demand to supply side including their engagement in areas other than RMNCH+A.

The monthly incentives ASHA includes activities relating to maternal health, child health, immunization, family planning, adolescent health other routine activities, participatory learning, NTEP (erstwhile RNTCP), NLEP, NVBDCP, CPHC and NCDs screening, PMJAY and HWCs, and drinking water and sanitation (National Health Mission, 2019).

The motivating factors identified for ASHA were support from family members, job satisfaction, opportunity to develop new skills, social recognition and status in community, flexible work and timings. Negative experiences causing some ASHAs to quit their jobs include ill health, marriage and family, workload and poor payment structure (George, et al., 2017).

The routine and recurring incentives under NHM for ASHAs have been increased from INR 2,000 per month as against INR 1,000 earlier (Press Information Bureau, 2018). However, ASHAs are often paid meager salaries (Schaaf, et al., 2018). Protests for minimum salary and regular jobs have also been seen by ASHA in last few years (Warthin & Amy, 2018). The ASHA Workers (Regularisation of Service and other Benefits) Bill, 2018 has been tabled and the same is pending in Lok Sabha.

ASHAs have been observed to be overburdened, there are more than 15 tasks assigned to them which are considered to be beyond the capacity of an ASHA (Bettampadi, Boulton, & Power, 2019). The National average for the population density per ASHAs under the NRHM in 2019 was 881, which is a reduction from 891 as reported in July 2018 (National Health Systems Resource Centre, 2019). This correlates with the overall increase in the number of in position ASHAs in Non-High Focus and High Focus States. The population density per ASHA ranges from as low as 129 in Lakshadweep to as high as 1,207 in West Bengal.

The 11th CRM reports from all eighteen states acknowledge the pivotal role played by ASHAs in linking the community with the public health system (11th CRM, 2018). These reports have established ASHA success in building a strong community rapport. They lay a strong foundation to evolve a robust community- based health system for the country that will be responsive to address healthcare priorities specified under the paradigm of CPHC.

ASHAs contribute towards educating and increasing awareness amongst people about hygiene, sanitation, natural calamities, epidemics, drugs and addiction, feminine hygiene and conduct counseling (EY Primary Analysis: FGDs, 2019).

Regular refresher trainings of ASHAs are undertaken to build capacity. IPC-BRIDGE trainings are being conducted with support of UNICEF for ASHAS, ANMs and Medical Officers to strengthen Routine Immunisation.

With ASHAs, there has been convergence and collaboration with other frontline workers such as ANMs and AWWs for delivery of community health services. It has been observed that the frontline health workers do not have a clear idea about the roles and responsibilities of ASHAs which hampers proper coordination among different frontline health workers. The effectiveness of trainings for ASHAs has not been uniform, while few ASHAs have been observed to be satisfied with the trainings conducted, others were not. The reasons for unsatisfactory trainings were

improper method of conducting trainings, lack of inclusion of local level issues and solutions, language barriers etc.

It is also reported that in some states most ASHAs serve merely as subordinates of the MO/ ANM, they don't raise the concerns of community people, instead they only do the health system support activities roles and not activist's roles (IIPH & IIM-A, 2020). It has been observed that ASHAs perform only those activities which generate more incentives and activities that require more of an activist role and are not incentivised are abandoned by them (IIPH & IIM-A, 2020).

ASHAs have played an important role in COVID management as well. For example, 42,000 ASHAs in Karnataka have been participating in the following activities for COVID-19:

- Conducting household surveys
- Screening of inter-state passengers, migrant workers and others in the community
- Identification of vulnerable groups through one-time survey identifying households with the elderly, persons with co-morbidities, and immuno-compromised individuals
- Monitoring of high-risk groups and follow up visits
- Visiting the houses of persons expressing complaints of ILI/SARI symptoms, and high-risk individuals who have called the State Health Department helpline numbers
- Part of the Rural Task Force headed by Panchayat Development Officer (PDO) at the Gram Panchayat level to address public grievances on both COVID-19 and non COVID-19 related services
- Dissemination of various awareness activities in the Fever clinics and Swab Collection Centres in Urban areas
- Part of the screening teams at the International and Interstate check-posts

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Case Study 10- Digital Asha Payments – Uttar Pradesh

Introduction

Under National Health Mission, the Government of India recruited ASHA workers to connect the marginalised communities to health care. ASHAs are well respected volunteers in the community who play a vital role in ensuring last mile service delivery. They receive performance linked incentives.

Uttar Pradesh has over 1.5 lakh ASHAs and their incentive payment process majorly relied on paper-based system for reporting and incentive calculation. This paper-based system affects transparency and created considerable delays in ASHA payments. Therefore, Uttar Pradesh digitized the payment process which brought greater accountability thereby facilitating faster payments. The major challenges faced in ASHA payments were -

- Capturing the work done by ASHAs
- Recording it on a program without new investment
- Pay the incentives in a transparent and easy manner
- PFMS integration

Key Stakeholders & Process flow
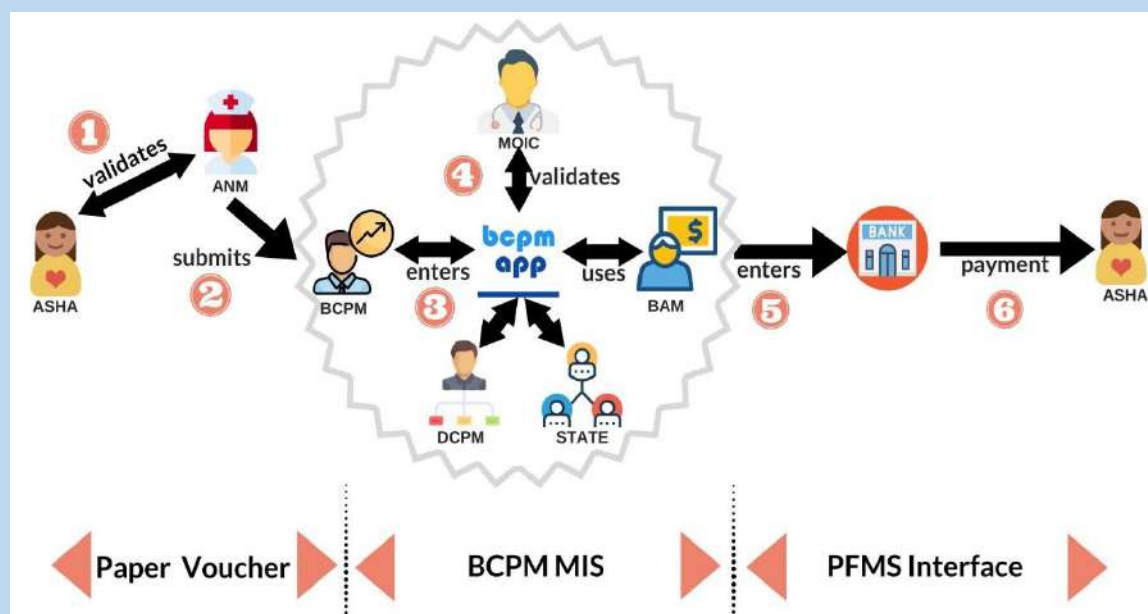
Implementation of the practice

A mobile-based web application "Block Community Process Managers (BCPM) MIS" was created for mapping Health Workers Managers (BCPM) MIS. This MIS was created for standardised mapping of Geographies (District, Blocks and Villages), Health Facilities (DH, CHC, PHC, SC) and Health Workers. This application also consists of a module to digitize ASHA and Sangini incentive payment process to reduce delays and increase transparency in the process. The payment process comprises of the following steps:

- ANM approved paper-based, monthly vouchers submitted by ASHA by 20th of the month
- BCPMs enters and submit the vouchers digitally by 25th of the month
- MoIC approves the voucher on the portal by 28th of the month
- BAM makes payments by 5th of next month using pre-formatted PFMS
- ASHAs receive an SMS with a head wise breakup at all stages of payment

The training was provided to BCPMs on using MIS. This project was implemented in partnership with NHM, UP-TSU, Tattva Foundation.

Results of the practice

- Since the launch in Oct 2018, 90% of ASHAs incentives are paid by 5th of the following month

- Granular data access has helped to improve the functionality of ASHAs by 67%
- Overall average monthly incentive per ASHAs has increased by 35%
- Increased accountability and transparency in incentive payments
- Motivated and empowered ASHAS and SANGINIS
- ANALYTICA' has enabled strategic use of data for physical and financial review and monitoring at state, division, district, and block level

Lessons learnt

The identified objectives have been fulfilled satisfactorily like timely and transparent online payment to ASHAs. There have been improvements in the system for effectively monitoring performance of ASHAs. The data captured is also being used to generate insights for monitoring and policy making.

Conclusion

The application is currently used in all 820 Blocks and is being planned for scale-up for payment of urban ASHAs. The BPCM MIS offers provision for detailed analysis and profound insights to ASHA incentive disbursement and utilisation.

B. Village Health Sanitation & Nutrition Committee (VHSNC)

VHSNC ensures community participation to support implementation, monitoring and action-based planning for healthcare activities. Some of the activities related to the functioning of VHSNC include – Holding regular monthly meetings, managing of Untied Village Health Fund, record maintenance, organizing local collective action for health promotion, monitoring public service delivery

At the national level 5,36,903 (95%) VHSNCs have been constituted against total target of 5,67,320. As per the Operational Guidelines for VHSNC, ASHA is expected to serve as the member secretary of the committee and be a joint account holder with the chairperson who is a representative of the panchayat. This is to promote better community-level ownership, participation of the marginalized and actual need-based village health planning. ASHAs are serving as member secretary in about 3.7 lakh VHSNCs formed (70%) across the country. ASHAs serve as the joint account holder in the use of untied funds in about 3.5 lakh or 66% of VHSNCs formed (National Injury Surveillance, 2019). There is a wide variation in the performance of VHSNCs across the country, and in many states are yet to emerge as institutional platforms (12th CRM, 2020).

Chapter 3: National Rural Health Mission

Overall, only 20% of the respondents were aware about the Village Health Sanitation and Nutrition Day (VHSND) (EY Primary Analysis Household Survey, 2019). Among the sample states, Karnataka & Odisha, people had the highest percentage of people aware about Village Health Sanitation and Nutrition Day (VHSND) with 54% & 45% respectively. States such as Telangana & West Bengal had the lowest awareness with 2% & 5% people respectively.

Figure 3-8: Awareness about Village Health Sanitation and Nutrition Day (VHSND)
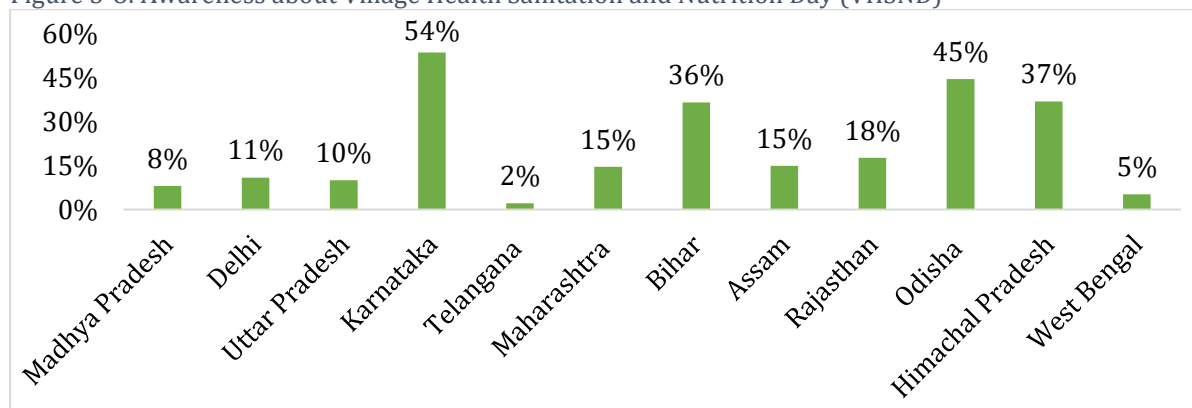
Source: EY Primary Analysis Household Survey, 2019

The 'VISHWAS' (Village based Initiative to Synergise Health, Water and Sanitation) campaign was launched to build a collective initiative at the community level, for improving Water, Sanitation and Hygiene situation and its impact on Health and quality of life. It is envisioned that it will strengthen the convergent action in under the various initiatives of Swachh Bharat Mission (SBM) and will also build the institutional capacity of VHSNCs to fulfil their roles as visualized in the original design. Only the states of Jharkhand and UP reported rolling out the VISHWAS campaign (National Health Systems Resource Centre, 2019).

C. Rogi Kalyan Samitis (RKS)

Rogi Kalyan Samiti (Patient Welfare Committee)/ Hospital Management Society is a registered society that acts as a group of Trustees to manage affairs of the hospitals. It consists of members from local Panchayati Raj Institutions (PRIs), NGOs, locally elected representatives and officials from Government sector who are responsible for proper functioning and management of the healthcare facilities. It is free to prescribe, generate and use the funds, as per its judgment for smooth functioning and maintaining the quality of services. The RKS has been formed, as per the recommended guidelines, in all states except in MP (not at PHC level) and Tripura (National Injury Surveillance, 2019). In Arunachal Pradesh and Punjab, although the RKS have been formed, they are not functional (National Health Mission, 2019). Major sources of funds for RKS across the country are the user fees charged to patients and the untied funds received through NHM.

Figure 3-9: Constitution of RKS at CHCs
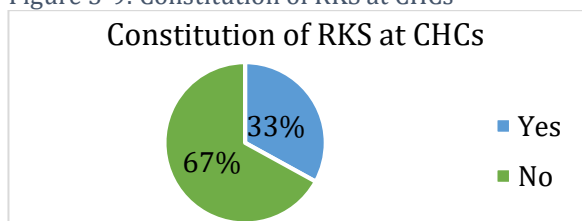
Source: EY Primary Analysis: Facility Survey, 2019

Figure 3-10: Constitution of RKS at PHCs
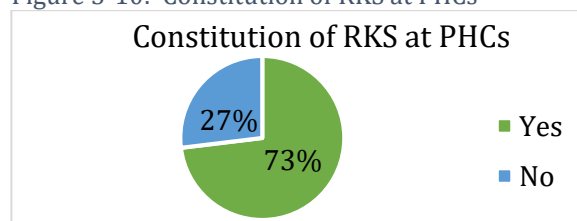
Source: EY Primary Analysis: Facility Survey, 2019

RKS was constituted in only 33% of the CHCs (39 facilities) visited; while in PHCs (52 facilities) RKS was constituted in 73% of the facilities. According to the Focus Group Discussions conducted

by EY, it was observed that there is high incidence of no awareness about RKS amongst villagers (EY Primary Analysis, FGDs 2019).

D. Mahila Arogya Samitis (MAS)

To address the peculiar challenges associated with the vulnerable populations in the Urban Slums, the Mahila Aarogya Samitis were created in urban areas. They are expected to take collective action on issues related to Health, Nutrition, Water Sanitation and other social determinants at Slum/Ward level, in addition to improving awareness and access of community for health services, supporting the ASHAs, developing health plans specific to the local needs and serving as a mechanism to promote community action for health. As on March 31st, 2020, 81,169 MAS have been formed of which ~31.8% are in High Focus States and 68% in Non-High Focus Large states (NHM Quarterly MIS Report, March 2019).

Key Findings

- ASHA program has proven to be one of the most successful initiatives under NHM. ASHAs have been reported to act as the link between the communities and the health system by ensuring last mile delivery of health services to marginalized communities and difficult-to-reach areas, playing an important role in creating awareness and increasing community participation.

- There is a synergy of work between ASHAs and other health workers including ANMs and AWWs, who are complementing each other's services and ensuring effective outreach of schemes at the ground level.

- While VHSNCs have both male and female workers, MAS comprises of only female workers. Male workers have proven to be more effective in reaching out to male population in marginalised areas by avoiding social stigmas and barriers.

- ASHAs reported that sufficient and satisfactory trainings are conducted for them.

Case Study 11 – Well London

Introduction

Well London provides a framework for communities and local organizations to work together to improve health and well-being, build resilience, and reduce inequalities.

Well London works at the very local, neighbourhood level. It engages and supports people to develop their individual and community knowledge, skills and capacity to act on the issues affecting their health and well-being. It was found to have had very positive impacts in improving diet and physical activities through the evaluation.

Lack of exercise and poor diet leading to obesity and its consequences. The prevalence of obesity in the UK population is one of the highest in Europe and it is higher in the poor communities that are targeted by the Well London project. Type 2 diabetes and cardiovascular diseases are more prevalent in these poor communities. Due to several barriers, the targeted groups often did not seek health care and preventive advice until they had advanced problems.

The program sought to build individual and community confidence, by improving individual and community support networks, as well as providing opportunities for individuals to participate in activities to boost levels of mental well-being, healthy eating and physical activity. Community engagement was used to identify each community's assets and needs, and a co-development process was used, drawing on local knowledge, in order to identify and design solutions. This program aimed to:

- Increase levels of healthy eating, physical activity and mental health, especially among those who have experienced barriers to accessing services in the past.
- Increase levels of responsiveness of local service deliverers to community need.
- Build the knowledge and skills of residents and communities in order to improve their wellbeing and promote a sense of community.
- Leverage on existing services - making them more responsive to local needs.
- Help build ambition and aspiration in communities by empowering people to take up services and make small changes.
- Help make the community engage more meaningfully by mobilising participants who would not otherwise take part. Provide feedback to local providers of health and social care.

Key stakeholders

Key Stakeholders
- Greater London Authority (GLA)
- The Institute for Health and Human Development at UEL leads on Research and Evaluation, Community Engagement and Development
- The Royal Society for Public Health (RSPH)
- South London And Maudsley NHS Foundation Trust (SLaM)
- London Sustainability Exchange (LSx)
- Central YMCA
- Youthforce
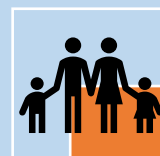
Beneficiares
- Deprived communities of London

Implementation strategy:

The initiative began with a period of community engagement, to understand the needs, concerns and priorities of the target communities. The information gathered was used to shape a program of up to fourteen projects for each area, including core projects to build individual and community capacity, and themed projects to address mental well-being, physical activity and healthy eating, improve local environments and increase culture and arts activities.

The model starts by selecting a disadvantaged neighbourhood and recruiting a dedicated local coordinator who can ensure effective community building, participation, volunteers developing etc.

Initially, 15 volunteers with existing relationships within their communities were trained to reach out and empower local people. Volunteers went out twice per week for 4 hours per day on promoting activities and talking to and befriending residents. The recruitment of volunteers from the local community meant that those who were not usually reached by services of involved in projects were more likely to be reached and engaged.

The local community persisting problems are collected through door-to-door visits and community gatherings. Depending on the community demanding issues, the local community enhancement programs are designed with engaging the community and stakeholders. Through the local partners, these programs are carried out and volunteers are sourced through peer-to-peer approaches in the local community. To develop trainers for the community programs courses and training grants are provided.

A Dedicated Local Cordinator	Community and stakeholder Engagement in needs Assessment and local programme Design	Courses and training grants to skill up local people to lead and manage activities	Initiatives to develop and support volunteering and peer-to-peer approaches	Development and support for Young Leaders to ensure local youth engagement and action
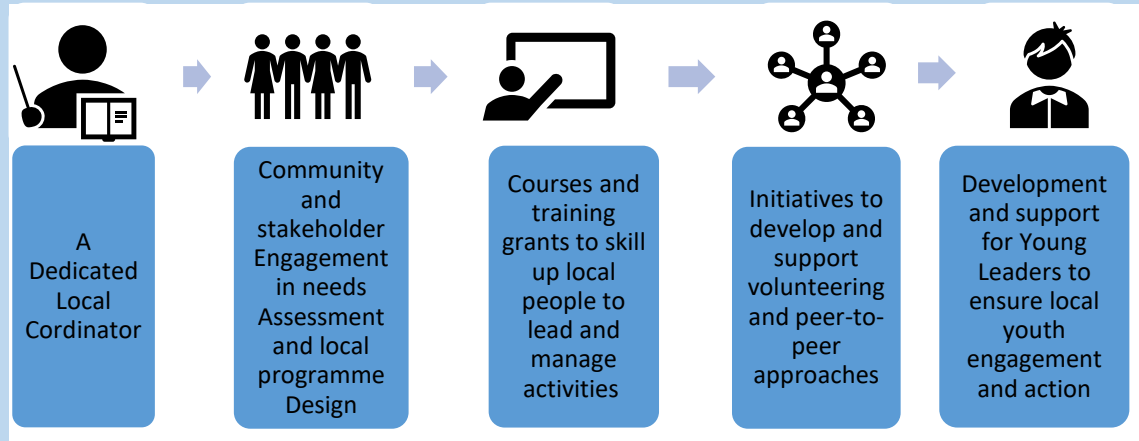
Resource utilization: The first phase of development of the program was funded by the Big Lottery Well-being Fund, with £9.46 million used to develop, manage, deliver and evaluate interventions which took place over a three and a half-year period, between October 2007 and March 2011 in 20 of the most deprived areas in London. The program was delivered by the Well London Alliance, led by the London Health Commission. The London Health Commission was hosted by the Greater London Authority, which took the role of an accountable body for the Lottery funding.

The program sought to use the principles of asset-based community development and co-production to ensure that the Well London program of new activities built on existing assets, and that local communities were involved in decision making at each stage of development and delivery.

Results

Headcounts across projects estimated 46,918 attendances at projects and activities. An estimated 17,108 different individuals participated. Phase 1 participants reported that projects had helped them improve their health and well-being:

- 80% reported that they received help to improve their understanding of mental wellbeing;
- 86% that they felt more positive;
- 83% helped to increased levels of physical activity;
- 63% helped to improve access to healthy food and
- 60% helped to make more healthy eating choices.

The evaluation was based on the Medical Research Council's guidelines for evaluating complex interventions and aimed to capture evidence of impact on the participants' health behaviours and wellbeing and on the local environment.

Lessons learnt

A major challenge was the time taken to develop and initiate several the new projects during the program implementation. There were delays, for example, in the establishment of the

Well London Delivery Team project in some areas and delivery of some other key projects, such as Training Communities and DIY Happiness, which did not start until the end of the second year of the program, meaning some areas had less time to realise benefits than others.

Conclusion

Well London received political support from mayor of London and funded by national lottery community fund. A similar model can be used for any urban cites health and wellbeing intervention programs. Since the model is based on asset-based community development, this model enables the communities to use their public assets effectively and efficiently for their improved health and wellbeing. This program can be rolled out in the cities with support from local corporations.

Further Reading

http://www.welllondon.org.uk/files/1401

3.2.4 Use of Technology

Technology offers potential to transform health care. Several initiatives have been undertaken towards development of an all-inclusive countrywide integrated e-health ecosystem. NHM has leveraged technology for improving efficiency and effectiveness of services under its various schemes and programs. Tele-health services and e-health records are the new promising technological interventions

Activities/tasks for MoHFW's initiatives in 2018-19 aimed at of implementing e-Health in an integrated manner across central and state levels are as follows.

A. Online Services

► Online Registration System (ORS): is a framework to link various hospitals for online registration, payment of fees and appointment, online diagnostic reports, enquiring availability of blood online etc. More than 190 hospitals including hospitals like AIIMS, New Delhi and other AIIMS (Jodhpur; Bihar, Rishikesh, Bhubaneswar, Raipur, Bhopal); RML Hospital; SIC, Safdarjung Hospital; NIMHANS; Agartala Government Medical College; JIPMER etc. are on board ORS. So far, more than 20 lakh appointments have been transacted online.

► Mera-Aspataal (Patient Feedback System) application is an IT based feedback system to collect information on patients' satisfaction levels using a multi-channel approach viz. Short Message Service (SMS), Outbound Dialling (OBD), Web Portal, and Mobile Application. The application automatically contacts the patient (outpatient after the closure of the OPD and the inpatient at the time of discharge) using the above tools to collect information on patients' satisfaction levels. 5,204 hospitals have been integrated with Mera-Aspataal initiative and more than 55.08 lakh feedback have been received. Mera-Aspataal initiative has been discussed further in section 3.2.8A.

B. Telemedicine

► National Telemedicine Network (NTN) initiative was approved with the vision to provide telemedicine services to the remote areas by upgrading existing Government Healthcare Facilities (MC, DH, SDH, CHC and PHC) in States. Challenges faced in the present healthcare system viz. lack of specialist and inaccessibility of doctors in rural areas is addressed with the use of information technology in delivering healthcare services. The States/UTs are being supported under the National Health Mission (NHM) through their State PIPs. 10 States have

been financially supported for strengthening State Telemedicine initiatives under NTN (Ministry of Health and Family Welfare, 2019).

► It is difficult to validate the impact of telemedicine on clinical outcomes with scientific rigour which affects its acceptance amongst the population. India's effective use of telemedicine early gives it an edge. It is vital to capitalize on successful projects like Onconet Kerala and ISRO/NEC projects in north-eastern states of India. There is a need to integrate telemedicine nodal centres across the nation and utilize their services in the field of public health, especially in maternal and child health (Mathur, Srivastava, Lalchandani and Mehta, 2017). To overcome the challenges faced during implementation of telemedicine in India, currently available financial, human and material resources need to be sought and optimally utilized. Public-private partnerships and better governmental support could lead to rapid advancements in telemedicine services in the country (Singh, Roy and Goya, 2017).

► MoHFW recently published Telemedicine Guidelines, 2020[70] for streamlining the practice of telemedicine in India. The Guidelines provide a framework, addressing the existing ambiguity relating to liability, consent, confidentiality and negligence aspects in telemedicine practice.

Telemedicine application according to the Guidelines can be classified into four types, based on- a) mode of communication- video, audio, text-based; b) timing of the information transmitted- real-time consultation, asynchronous exchange of information; c) purpose of the consultation- first consultation, follow-up consultation, and d) interaction between the individuals involved- patients, caregiver, registered medical practitioner, health workers. These Guidelines serve as an important policy tool in timely accessibility of healthcare during emergency times like epidemic/pandemics.

C. Drugs and Vaccines Distribution Management System (DVDMS)

► Under the free drugs service initiative, MoHFW has developed Drugs and Vaccines Distribution Management System (DVDMS) which is a customizable application to help states in managing workflow for the initiative (Ministry of Health and Family Welfare, 2019) (Ministry of Health and Family Welfare and Ministry of Drinking Water and Sanitation , 2018). 15 States have implemented DVDMS(CDAC) system. 3 states are in the process (Sikkim, Arunachal Pradesh, Assam) of implementing the IT system (Ministry of Health and Family Welfare, 2019) (Ministry of Health and Family Welfare and Ministry of Drinking Water and Sanitation , 2018). 9 States and 1 UT have other IT management systems. Mizoram and Nagaland are without an IT backed medicine supply chain system (Ministry of Health and Family Welfare, 2019) (Ministry of Health and Family Welfare and Ministry of Drinking Water and Sanitation , 2018).

► Wherever functional, DVDMS has been reported to reduce drugs stock out and ensured timely availability of drugs and medicines (EY Primary Analysis: KIIs, 2019).

► DVDMS though has been implemented in many states, it is not fully functional hampering the bottom-up planning (IIPH & IIM-A, 2020). The bottom-up planning should be implemented with required technological changes and capacity building initiatives (IIPH & IIM-A, 2020).

D. Health Management Information System (HMIS)

► NHM has implemented a Health Management Information System (HMIS) to aggregate data on various public health programs and provide key inputs for policy formulation (Ministry of

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[70] https://www.mohfw.gov.in/pdf/Telemedicine.pdf; last accessed on August 14, 2020.

Health and Family Welfare, 2019). All States and UTs report district level data in MIS. However, it was found that ineffective reporting and management of data could be key challenges in using the HMIS data (Muhindo, Joloba, & Nakanjako, 2016).

▶ Similarly, the Government has implemented the Mother and Child Tracking System (MCTS) to collect and analyse information on healthcare services delivered to mothers and children until the age of 5. However, this monitoring Program was observed to suffer from problems related to lack of appropriate training, poor internet connectivity, and frequent power failures (Nagarajan, Tripathy, & Goel, 2016).

E. Other Technology Interventions

▶ To leverage mobile technology, an App called "m-Diabetes" is being implemented to generate awareness, to promote adherence to treatment and to inculcate healthy habits among the masses with special focus on target groups. This application is being integrated with national software for NCD service delivery under Comprehensive Primary Health Care (CPHC). National Cancer Registry Program has also been introduced to maintain cancer patient database under NPCDCS.

▶ Under NIDDCP, four main components are important, that is demand for iodized salt, regular reliable representations, promotion of consumption of adequately iodised salt forever and data for decision makers and sustained political commitment (Kumar, Revanth, Sarathy, & Ravikiran, 2018). The management information system has been launched by the salt department, which deploys state-of-the-art web technologies to ensure real-time flow of information related to salt production and quality (Kaur, et al., 2017).

▶ Under NTEP (erstwhile RNTCP), digital tools are expanded with IT-enabled adherence support system, SMS reminders to TB patients, introduction of NIKSHAY Aushadhi (drug distribution management system), and 20,000 tablet computers to staff for online monitoring mechanism (Ministry of Health and Family Welfare, 2019).

▶ Under IDSP, IT-based networking system has been developed by connecting 776 sites at all State/District headquarters and prominent institutes in the country for data entry training, video conferencing and outbreak discussions. 12 laboratories have been upgraded and made functional under IDSP for Avian/ H1N1 influenza surveillance[71]. Integrated Health Information Platform is also developed under IDSP.

▶ Implementation of a systematic Human Resource Management Information System (HRMIS) has either been delayed or only partially implemented (with only a few parameters entered in the system) in most of the states. This has made it difficult for states to maintain an accurate record of its workforce and their administration. There has been a wider adoption of HRMIS from 2015-16 to 2017-18, fourteen states used e-payslips to disburse salaries in 2017-18 compared to nine states in 2015-16 (NITI Ayog, 2019). Also, Kerala, Himachal, Andhra Pradesh and Haryana have a fully operationalized HRMIS. There is need to initiate and filly operationalize HRMIS in other states for effective human resource.

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[71] https://idsp.nic.in

Case Study 12- Kerala e-Health

Introduction

The eHealth Kerala project is being implemented by the Department of Health and Family Welfare, Government of Kerala, with the help of Ministry of Electronics and Information Technology, Government of India. The aim is to capture the demographic data, automate hospital processes and collate all information into a centralized state health information system through the network to ensure continuity in health care. This ambitious eHealth project of the State government envisages the development of Electronic Health Records (EHR) of the population. The project provides end-to-end automation on all government healthcare institutions, along with the integration of an electronic demographic database. It was launched on 26 January 2018.

Key Stakeholders

- Department of Health and Family Welfare, Government of Kerala

- Ministry of Electronics and Information Technology

Implementation of the practice

- The project is proposed to enable the surveillance of diseases of every person in Kerala. This project uses Aadhaar as the unique identification number.

- The project had a successful run since it was piloted in the Government Medical College Hospital (MCH), Thiruvananthapuram, and other 17 institutions, where all processes, right from outpatient registration, clinical examination and administrative processes, were being fully streamlined utilising the e-Health software.

- The eHealth project has been implemented in 86 government hospitals in the state, including the medical colleges of Thiruvananthapuram and Kollam.

- The program will further be operational in 80 more hospitals.

  The demographic database of 1.41 crore population out of the total 3.5 crore population of the State is also being processed and steps to issue unique health identity cards to them are being initiated.

- The main components of the framework include
  o A Central Repository of Demographic, Public Health and healthcare data pertaining to the State which will get automatically updated.
  o Each citizen's record in the demographic data repository will be uniquely identified which will be used by all the services provided by e-Health Kerala.
  o Centralized Healthcare Information System which has the functionalities of an Integrated Hospital Management System, Disease Surveillance, Management Information System and Healthcare Planning.
  o A high bandwidth reliable network connecting all hospitals (in the public sector) and linking them to Central Healthcare Data Repository and the Central Demographic Data Repository
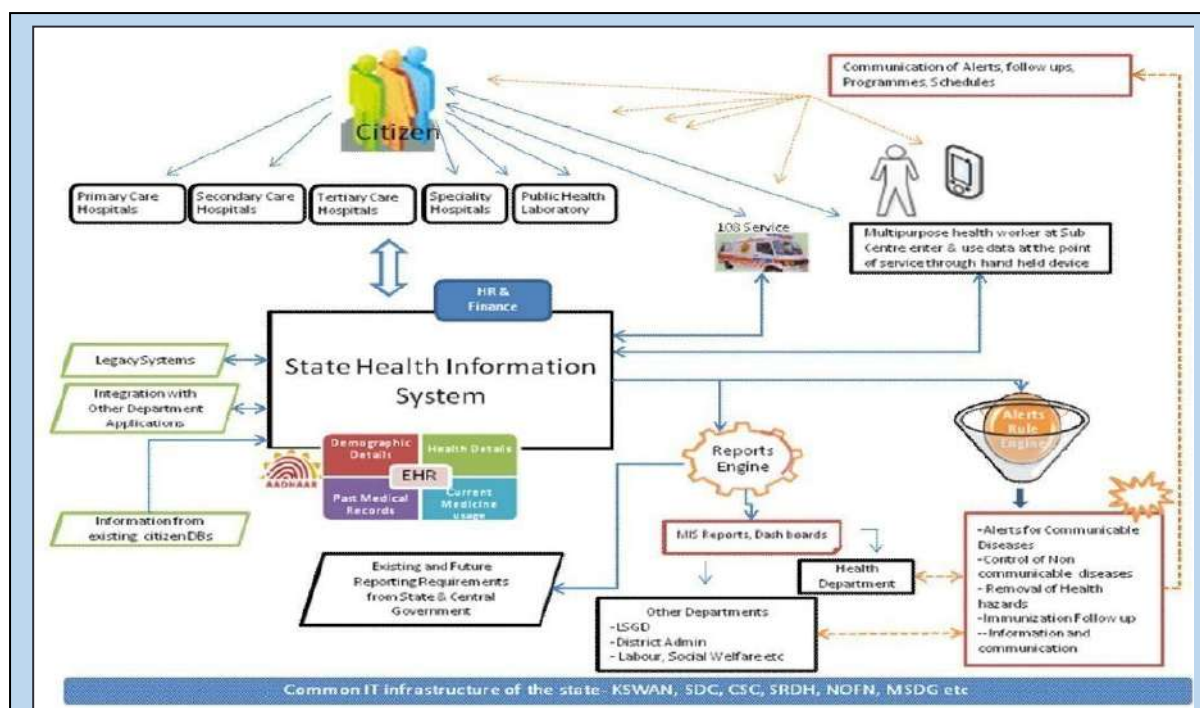
Results of the practice

The Government expects to create a patient-friendly interface for public healthcare institutions all over the state. The systemic outcome is the availability of a universal database, dynamically updated, along with which government can plan for and monitor the provision of healthcare services. Availability of digital healthcare data in a centralised server will provide a huge impetus for the disease surveillance in the state. Real-time data from clinics will enable timely alerts on outbreaks and communicable diseases. Statistical reports from the Electronic Medical Records (EMR) will provide valuable data on Non-Communicable Diseases and enable State to proactively intervene to reduce the disease burden.

Lesson Learnt

- The scaling up has been a challenge. To get doctors and the staffs use the system even after capacity building has not been efficient
- The continued usage of system and creating a continuous record is difficult. For example-doctors can't keep the patients waiting, if the system is down.
- Cost Effectiveness- there is a need to manage the costs in such a way that the overall cost of health care goes down.
- Information Exchange- the challenge is to motivate and encourage stakeholders to pull as well as push the right kind of information from the system.
- Adoption and Resistance- there is reluctance on the part of patients and doctors in fully adopting E-Health.
- Human Resource- bringing in ANM, Asha workers, Angawadi workers into the e-health

Conclusion

This project aims to create interoperable health care solutions across the state's public health care system which in turn provides a) timely and accurate information for patient care, b) efficient and quality assuring clinical practice for the public healthcare providers. In addition to this, it also helps to gather comprehensive statistics for formulating public health policy.

Key Findings

- Tele-consultation can prove to be very effective in increasing accessibility in underserved areas and in reducing excess burden in secondary and tertiary care facilities in urban areas (EY Primary Analysis: KIIs, 2019).

- There are huge disparities in the data reported in HMIS and NFHS for same indicators measured across States and UTs. Data integrity of State/UTs also varies by the specific indicators evaluated (NITI Aayog, 2019).

- Integration of multiple IT systems and databases into one for simplification and efficiency is required.

- Monitoring of quality of data reported has to be ensured through capacity building, validation and check systems before data is uploaded on the system.

- Implementation of a functional and effective HRMIS needs to be expedited across states. This should include work force management for both regular and contractual staff and training needs should also be integrated with HRMIS (as the Training Management Information System or TMIS).

3.2.5 IEC | BCC | outreach activities

IEC activities under NHM addresses the existing social and behavioural barriers and acts as an enabling factor. NHM uses comprehensive strategy with clearly articulated objectives, from a patient-centric approach and audience segmentation using appropriate channels, continuous monitoring and feedback for outreach activities.

IEC is a public health system approach aiming at changing or reinforcing health-related behaviors in a target audience, concerning a specific problem and within a pre-defined period of time, through communication methods and principles.

The year-long IEC/Communication Plan has month-wise focus on health days and health themes. While some activities were taken up to coincide with 'Health Days', others were week and month-long plans for focussed multi-media campaigns on schemes of the Ministry. These centre around topics such as Ayushman Bharat, Immunization, TB management, Anaemia Mukt Bharat, Integrated Diarrhoea Control Fortnight (IDCF), Breastfeeding Week, Tobacco Control, etc. Seasonal ailments such as Dengue, H1N1 etc., are dealt with through targeted campaigns. All the IEC activities have had a print media component as well as comprehensive AV spots through TV and Radio Plans. Social Media and Outdoor Media activities substantially supplement the IEC efforts.

Under IEC activities, the following are printed / produced and circulated / broadcasted as means of promoting desired and positive behaviours in the community:

- posters,
- booklets,
- flyers,
- messages for health education sessions,
- leaflets,
- brochures,
- radio broadcast or TV spots, etc

Social Media and Outdoor Media activities substantially supplement the IEC efforts. In some cases, these activities are part of a communication plan within a comprehensive strategy, while in many others they are isolated actions

Chapter 3: National Rural Health Mission

IEC material on various schemes are designed and made available by NHM. NHM manages IEC activities and materials of National Ambulance Service (NAS-108), Drug Abuse, Immunisation, Janani Shishu Suraksha Karyakram (JSSK), Janani Suraksha Yojana (JSY), Rastriya Bal Swasthaya Karyakram (RBSK) etc. IEC activities and material of CSS schemes are managed by respective departments and teams like NVBDCP, NTEP (erstwhile RNTCP), NLEP etc.

Campaigns: Several campaigns are organised as part of NHM for raising awareness among the populations. For instance, campaigns of distribution of condoms for promoting safe sexual practices is also done at the PHCs (Ministry of Health and Family Welfare, 2013). In addition, activities/campaigns are conducted under NUHM for maternal and child health and nutrition; communicable diseases; good hygiene and sanitation practices; family welfare and adolescent, reproductive and sexual Health; non-communicable diseases; HIV/AIDS prevention and control; and specific vulnerable groups in urban settings (Ministry of Health and Family Welfare, 2015). Under Rashtriya Kishor Swasthya Karyakram (RKSK), at the community level, the government has launched a peer education program and adolescent health day to improve awareness among adolescents.

States such as Punjab and West Bengal have been observed to have adequate information display of information on drugs, diagnostic tests, citizen charter at its health facilities (11th CRM, 2018). ~70% facilities visited had a citizen's charter available in local language (EY Primary Analysis: Facility Survey, 2019). The awareness about NHM schemes is low across states (10th CRM, 2017). Specifically, there is a need for stronger IEC activities under JSY and JSSK schemes as many eligible beneficiaries have been found to have inadequate or inaccurate information about the scheme (Rupani, et al., 2019) (Kumar, et al., 2018). ~40% respondents were not aware about JSY scheme and its benefits (EY Primary Analysis: Household Survey, 2019). For promoting institutional delivery, local governments must also consider localised social contexts. It has been observed that female elders of the family generally drive decisions and practices on childbirth and maternal care (Gupta, et al., 2018) (Kumar, et al., 2018). Under family planning, reproductive health and knowledge, the awareness of knowledge about various contraceptive methods has become pervasive (Prasad, Venkatachalam, & Singh, 2016)The Government has focused on community-based distribution of contraceptives by involving ASHAs and focused IEC/BCC efforts are undertaken for enhancing demand and creating awareness on family planning. To improve access to contraceptives by the eligible couples, services of ASHA are utilized to deliver contraceptives at the doorstep of beneficiaries. The scheme has been rolled out in all the districts of the country (Ministry of Health and Family Welfare, 2020).

There is also a need to look at the family planning process from the perspective of reproductive needs of the youth and adolescent health. Awareness and knowledge on adolescent health is high amongst communities in Andhra Pradesh, Karnataka and Telangana (Ministry of Health and Family Welfare and Ministry of Drinking Water and Sanitation , 2018). Early age of marriage and teenage pregnancy is still an issue in Jammu and Kashmir, Tripura, Andhra Pradesh and Bihar. Therefore, there is a need to improve awareness about sexual practices, reproductive health and contraception among adolescents and young adults (Fatemeh, Yahya, Rahman, & Manaf, 2013).

Under Rashtriya Kishor Swasthya Karyakram (RKSK), the Government aims to promote holistic development of adolescent population. At the community level, the Government has launched a peer education program and adolescent health day to improve awareness among adolescents. As on March 2019, 2.53 lakh peer educators have been selected of which 1.79 lakh have been trained.

Across the States, 53,949 AHDs were celebrated during the financial year 2018-19 (Ministry of Health and Family Welfare, 2019).

ASHAs/ANMs/AWWs (55%) have been major source of health information followed by the mass media (EY Primary Analysis: Household Survey, 2019). ASHAs being the major source of information in Karnataka can be attributed to the proactive and pertinent role played by them in raising health awareness. States like Karnataka, Madhya Pradesh, Rajasthan and Maharashtra have shown ASHAs/ANMs/AWWs to be the major source of information (EY Primary Analysis: Household Survey, 2019). While States like Delhi, Telangana and Assam have shown TV/Radio/Newspaper to be the major source of information (EY Primary Analysis: Household Survey, 2019). Major source is ASHAs/ANMs/AWWs followed by TV/Radio/Newspaper etc. for most of the educational levels (EY Primary Analysis: Household Survey, 2019). The contribution of ASHAs/ANMs/AWWs as source of information declines as education level increases (EY Primary Analysis: Household Survey, 2019). Contribution of TV/Radio/Newspaper etc. increases due to higher level of education (EY Primary Analysis: Household Survey, 2019).

Figure 3-11: Sources of health information- Geographical Distribution
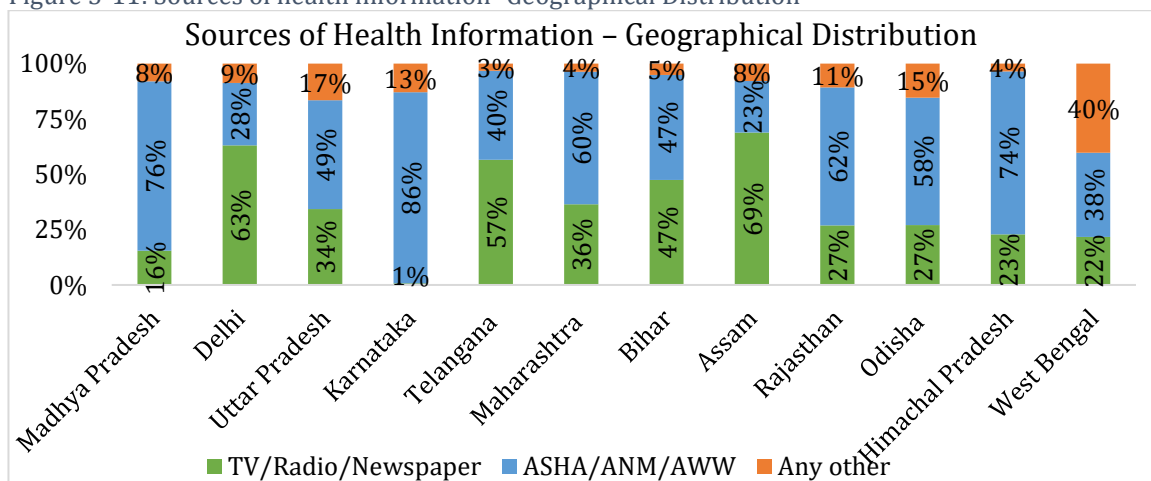
Source: EY Primary Analysis: Facility Survey, 2019

Figure 3-12: Sources of health information
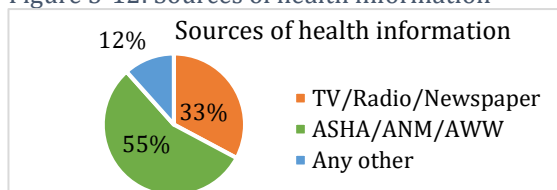
Source: EY Primary Analysis: Facility Survey, 2019

Among the social groups, in STs & Others, ASHAs/ANMs/AWWs have been the major source of health information, with 69% & 56% respondents receiving health information from them. ASHA/ANM/AWW are more important source of health information across all the income groups followed by other sources. Awareness through means of multi-media and newspapers have been limited.

In addition, activities/campaigns are conducted for maternal and child health and nutrition; communicable diseases; good hygiene and sanitation practices; family welfare and adolescent, reproductive and sexual health; non-communicable diseases; HIV/AIDS prevention and control; and specific vulnerable groups in urban settings (Ministry of Health and Family Welfare, 2015).

Key Findings:

- Awareness and support of the elder women, or lack thereof, can be a key determinant of the performance of the RCH and family planning activities. Increasing awareness through a targeted approach among these stakeholders can help in smoother implementation of the scheme (Gupta, et al., 2018).

Chapter 3: National Rural Health Mission

- ASHA has been identified as a successful IEC/BCC agent. ASHAs/ANMs/AWWs (55%) have been major source of health information followed by the mass media (EY Primary Analysis: Facility Survey, 2019).

- Analysis of various methods of IEC of raising awareness can help in planning and implementing better and more targeted approaches.

3.2.6 Equity

NHM takes into consideration aspects of social inclusion, gender inequality, urban-rural divide etc. effectively.

- *High Focus States and Non-High Focus States*

Many of the States with weak health indicators ('high-focus' States[72]) had low levels of healthcare spending on health. A higher weightage to these high-focus States was assigned under NHM to increase their healthcare spending and address the issue of inequality in healthcare spending.

Figure 3-13: Per capita Health Spending in States
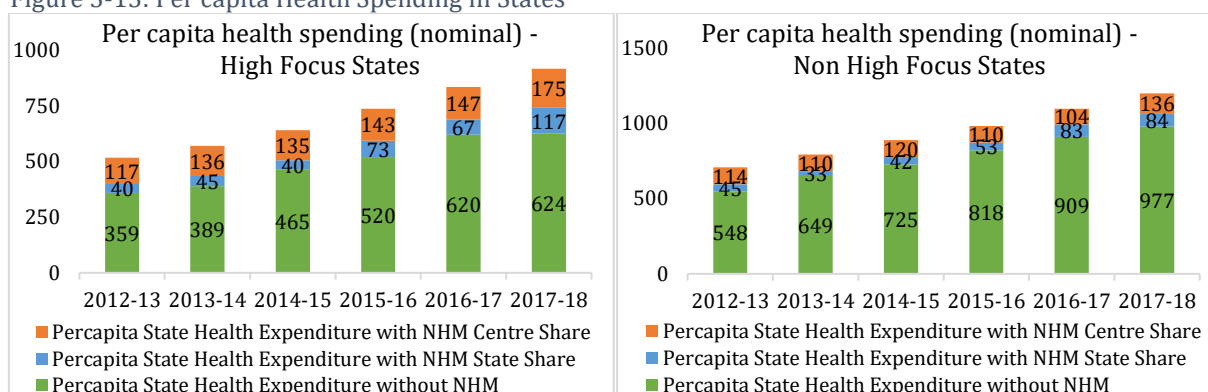
Source: NIPFP, 2020

In the high-focus states, funds under NHM constituted 32% of total health spending in recent years (2017-18) as compared to 18% of total health spending in the non-high focus states.

Lower performing high-focus States as compared to other states require more central support. Releases from the Central government accounted for a higher share of total health spending in high-focus States as compared to others (19% & 11% central share respectively in 2017-18).

In high-focus NE states, per capita NHM releases and expenditures were about 2.5 to 3.5 times higher than others. The higher per capita central release can be attributed to the higher central to state share ratio (90:10) for NE States. Together, with Centre and State contributions, NHM was able to reduce inequality in per capita health spending across States significantly.

- *Aspirational Districts*

Based on the composite health index, High Priority and aspirational Districts have been recognized which receive higher per capita funding, relaxed norms, enhanced monitoring and focused supportive supervision and are encouraged to adopt innovative approaches to address their peculiar health challenges. NHM has suggested the States to give up to 30% additional budget to such districts (MoHFW, 2020).

- *Caste and Tribal Areas*

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[72] Arunachal Pradesh, Assam, Bihar, Chhattisgarh, Himachal Pradesh, Jharkhand, Jammu & Kashmir, Manipur, Mizoram, Meghalaya, MP, Nagaland, Orissa, Rajasthan, Sikkim, Tripura, Uttaranchal and UP

NHM's aim to provide healthcare to all, especially the vulnerable sections of the society is highlighted through its relaxed population norms for setting up health facilities in tribal areas. There is a special focus on reducing the gap in availability of health services in tribal areas services (Ministry of Health and Family Welfare, 2014).

Special initiatives have been taken under NTEP (erstwhile RNTCP), NLEP, NVBDCP and NPCB&VI for states with a predominantly tribal population. Separate budget allocation is done for major health programs under Scheduled Caste Sub Plan (SCSP) and Tribal Sub Plan (TSP) (Ministry of Health and Family Welfare, 2019).

For ensuring availability of HR in tribal areas, States are encouraged to promote education and training to the local boys and girls, so that they don't have problem in staying in such areas (Refer to Case Study 10). If states demand, stipends are recommended by GoI to promote such initiatives. Norms for ASHAs of 1/1000 population and for MMU of 60 patients/day in plain areas have been relaxed to 1 per household and 30 patients/day respectively in tribal areas.

Figure 3-14: Allocation under SCSP and TSP (in Crore) in respect of NRHM
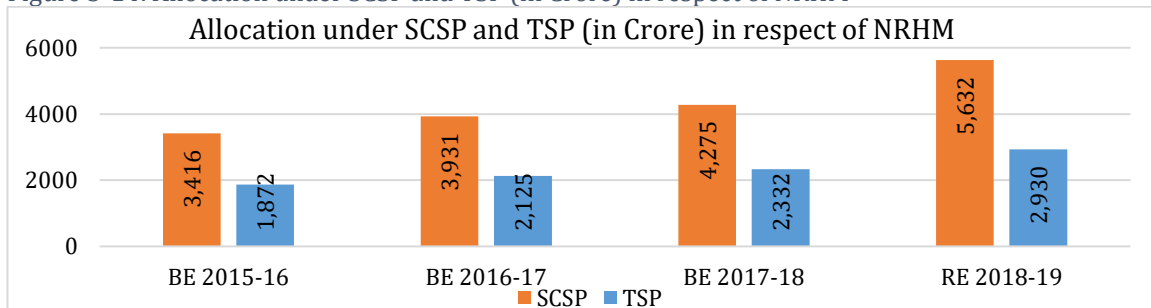
Source: Annual Reports MoHFW

- *Gender Mainstreaming*

Equity and gender mainstreaming initiatives are taken at the policy level to provide equal opportunities to all for availability of health services (Ministry of Health and Family Welfare, 2014). NHM has contributed towards ensuring equity in availability of healthcare services to all.

To address gender issues, programs like Janani Suraksha Yojana (JSY), Janani Shishu Suraksha Karyakram (JSSK), National Ambulance Services (NAS) and, Mother and Child Tracking System (MCTS) have been initiated under NHM giving services specifically for mother and child healthcare (Ministry of Health and Family Welfare, 2019).

Midwifery services in the country have been rolled out in order to improve the quality of care and ensure respectful care to pregnant women and newborns. The initiative was launched during the Partners Forum held at New Delhi in December 2018.

The 'Midwifery Services Initiative' aims to create a cadre of Nurse Practitioners in Midwifery who are skilled in accordance to competencies prescribed by the International Confederation of Midwives (ICM) and are knowledgeable and capable of providing compassionate women-centered, reproductive, maternal and newborn health care services

The first batch (30 participants from five states) of Midwifery educator training has launched on 6th November 2019 at National Midwifery Training Institute at Fernandez Hospital, Telangana.

Similarly, under RMNCH+A, through Programs such as RKSK, the government focuses on gender-based violence. To improve menstrual health among adolescent girls in rural India, the government launched a component under RKSK to procure and distribute sanitary.

Chapter 3: National Rural Health Mission

- *Urban and Rural*

Indicator	Total	Rural	Urban
TFR	2.2	2.4	1.7
IMR	32	36	23
NMR	23	27	14
U5MR	36	40	26

Source: SRS Report 2018

An analysis of all health outcomes which are reported separately for rural and urban India, shows that the TFR and NMR have found to be statistically different for rural and urban areas in all the reported states. (Refer to Appendix 3: Health Outcome Rural-Urban Divide – F-Test Analysis)

Key Findings:

- Utilization for the allocation of funds under TSP and SCSP for health is unavailable.

- Reporting for health indicators for tribal and scheduled caste population is unavailable.

- Among the selected states, Rajasthan & Madhya Pradesh had the highest percentage of people who faced discrimination or were treated differently at the health facility, with 74% & 55% respectively.

- Government doctors are most preferred for consultation in case of illness specially for low HH Income levels and low education levels (EY Primary Analysis: Household Survey, 2019).

3.2.7 Financial Performance

NHM funds flow through state treasury for better transparency and administrative control. Flexibility between different flexipools for fund utilisation for States to address local health needs has been introduced. Through performance-based funding (incentives) States are further motivated. Decentralised Planning and flexibility in funding is a best practice to be adopted by other sectors.

► **PIP Process**

Program Implementation Plans (PIPs) are used by the States/UTs to plan, prioritize and propose strategies and activities to address the challenges related to public health in the state. Based on the plan and the budget proposed, the appraisals and discussions are carried out which culminated in National Program Coordination Committee (NPCC) meeting and approvals are accorded using the Record of Proceedings (RoP).

Figure 3-15: Flowchart of Flow of Funds under NHM
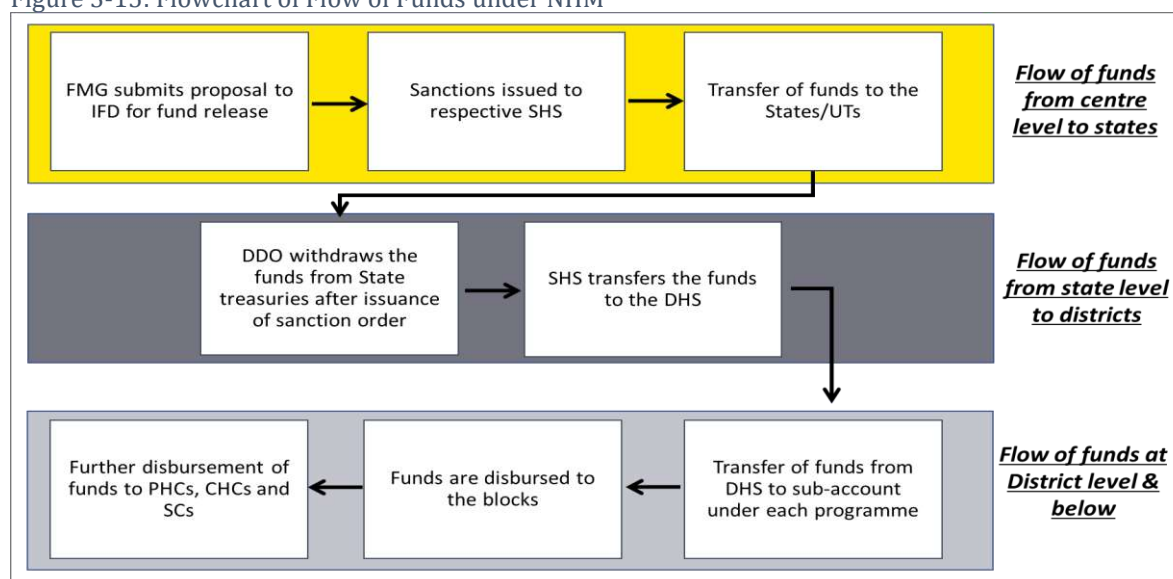
Source: Training Module on Fund Flow and Banking Arrangements, 2014

Figure 3-16: Flowchart of submission and approval of PIPs in NHM
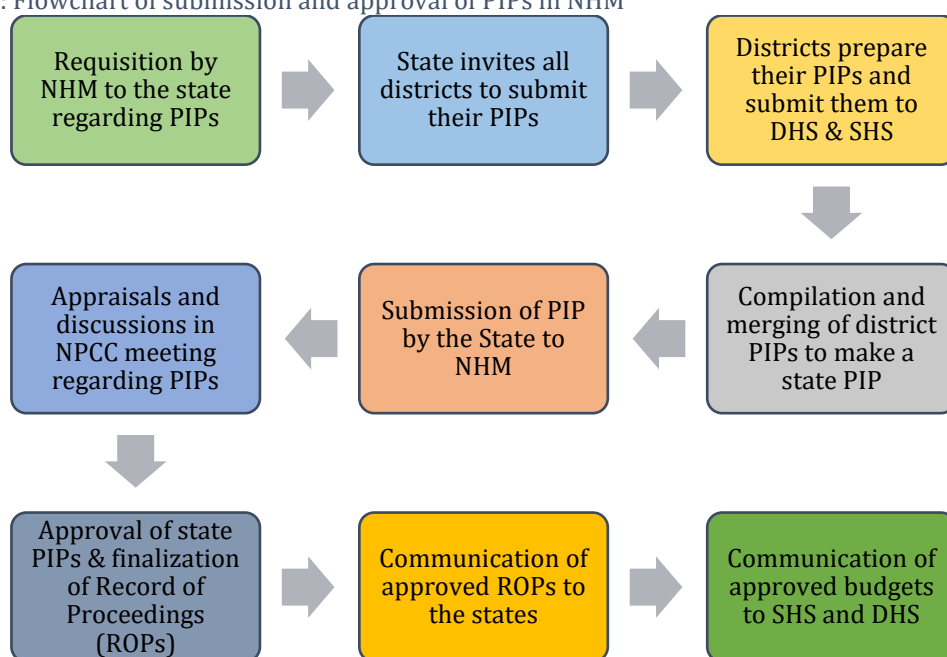
Source: Scheme Guidelines and EY analysis

► **Governance issues with financing**

It was reported that while the state government was working towards integrated financial management through dedicated software, there was a need to streamline financial processes under the NHM. For instance, there is a delay of 3-4 months in obtaining the Financial Management Reporting (FMR) codes from Central NHM, which are codes assigned to each operation which needs to be carried out as part of the state health plan, and to which a budget fund value is assigned. Ideally, these should be available at the same time as the approved NHM budget is received by the SHS (IIPH & IIM-A, 2020).

Previously, NHM funds were directly transferred in the State Health Society Account. However, this has been restructured to route funds through state treasury. This has resulted in an average delay of about 70-80 days (EY Primary Analysis: KIIs, 2019); (IIPH & IIM-A, 2020).

Further, different accounts for multiple programs are functional in many States. Funds are released from these accounts as per the program requirements (EY Primary Analysis: KIIs, 2019). This reduces transparency and affects smooth fund flow (EY Primary Analysis: KIIs, 2019). The practice of a single bank account as in the case of Madhya Pradesh, could also increase transparency (EY Primary Analysis: KIIs, 2019).

► **Budgetary Allocations**

NHM has six financing pools:

- ► NRHM-RCH Flexipool,
- ► NUHM Flexipool,
- ► Flexible pool for Communicable disease,
- ► Flexible pool for Non-communicable disease including Injury and Trauma,
- ► Infrastructure Maintenance
- ► Family Welfare Central Sector component

Chapter 3: National Rural Health Mission

At the time of inception of NRHM, funding was the sole responsibility of the Central Government. However, during the 12th five-year plan, it was changed to 75:25 (centre: state contribution) ratio for the general category and 90:10 ratio for the special category states. In 2015, the fund sharing pattern was revised. NHM fund sharing pattern is 60:40 between Central Government and most of the States and UTs with Legislature (Delhi & Puducherry). For the States of Jammu & Kashmir, Himachal Pradesh, Uttarakhand and North-Eastern States including Sikkim, the sharing pattern is 90:10 between the Central Government and the States. For UTs without Legislature, funding pattern is of 100% Central Share.

NRHM was launched in 2005 and aimed at achieving the MDG goals. SDG goals were added later on under NHM. Universal Health Coverage and National Health Policy came into effect later (in 2012 and 2017 respectively). So, the context and objectives need to be properly defined and revised, because for meeting the UHC and NHP objectives, commensurate resources and funding is also required.

Case Study 13 – Mission Flexipools by NHM

Introduction:

In order to improve the planning and implementation of public health programs as per regional requirements. So, NHM introduced "Mission Flexi Pool" which provides states to allocate the NHM funds to different health care programs as per the state's health and welfare needs.

Implementation of the practice:

In order to empower States to carry out health reforms with additional resources and appropriate flexibility as per local needs. Planning and implementation are decentralized to the States (State Health Mission developing State Health Action Plan) to Districts (Districts Health Mission developing District Health Action Plan) to Block Health Action Plan which are a community- owned and as per local needs, keeping in view the implementation guidelines of various programs. Funds in NHM are pooled under "Mission Flexi Pool". It is divided into five components under which funds are utilized for respective programs, as follows:

Part A
NRHM/ RMNCH+A (inlcuding Immunization) Flexipool

Part E
Infrastructure Maintainence

Part B
NUHM Flexipool

Part D
Flexible Pool for Non Communicable Diseases

Part C
Flexible Pool for Communicable Diseases
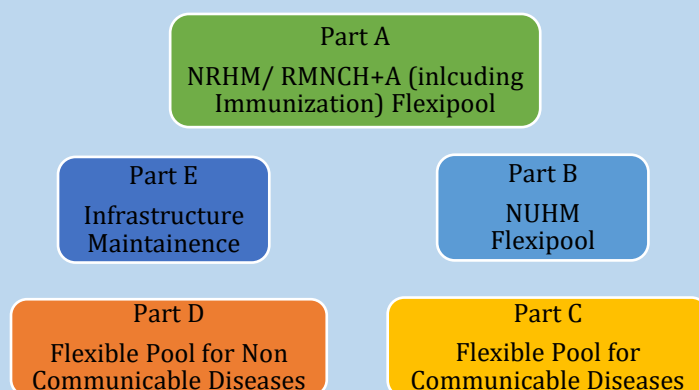
There is a separate financial envelope tied to Part A to D with the flexibility provided to all States to allocate funds through various strategies as per the local needs and broad national priorities. The number of components under Flexi pool varies from State to State. At least 70 % of funds of State under Part A- NRHM –RMNCH flexible pool is allocated to the districts, with high priority districts allocation are at least 30 % more per capita than non-priority districts.

The NHM funding between the Centre and States is in the ratio of 60:40 (for all states except NE and 3 Himalayan States), 60 from Central government and 40 from State. The fund flow mechanism is as follows:
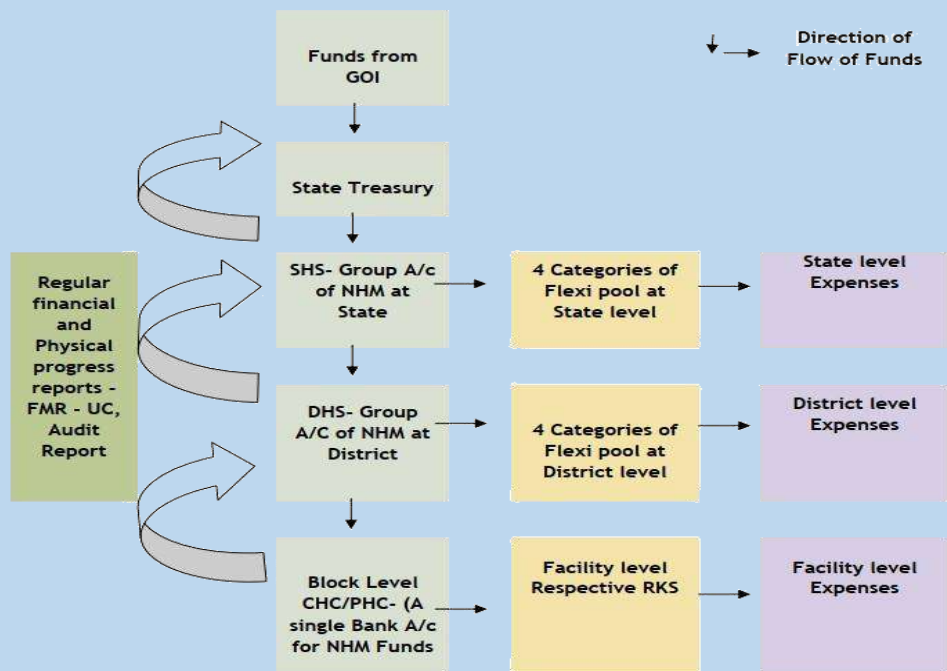
States must work towards an increase of at least 10 % in expenditure every year. Maximum funds must be spent at lower levels i.e. at least 70% at Block and below, 20 % District level and 10 % at State Level. For implementation and supervision of the scheme, Decentralized planning and funds dispersion from Top to Bottom is done. There is periodic reporting at each level through their supervisory units to GOI.

Results

This mission gave flexibility to States in designing and executing Programme Implementation Plan and prioritising States' local health needs. This also allowed states to implement different innovative programs that later rolled out across many other states of India.

Lessons Learnt

Re-appropriation of funds by different States for different programs leads to effective utilisation and healthcare planning. Tracking of the funds utilized by the states for different programs can be difficult due to unique fund distributions under any pool. Some programs are addressing this by reporting budget and utilisation at the end of the fiscal year.

Conclusion

Mission Flexipool provides de-centralization to district and block level which helps to improve public health care facilities across every corner of India as per their local needs. Other CSS and sectors may also look at adopting such practice promoting flexibility and efficiency in fund utilisation thereby prioritizing the local health needs.

Further reading

https://nhm.gov.in/images/pdf/NHM/NHM_more_information.pdf
https://darpg.gov.in/sites/default/files/National%20Health%20Mission.pdf

Chapter 3: National Rural Health Mission

Funds Allocation and Utilization

The allocation for NHM has increased from INR 18,609 Crores in FY 2014-15 to INR 31,745 Crores in FY 2019-20, registering a CAGR of 11.27%. NHM funds are distributed under various CSS such as NRHM, NUHM, Tertiary care programs, Human Resources for Health and Medical Education.

Figure 3-17 : Flexipool allocations under NRHM   *in INR Crore
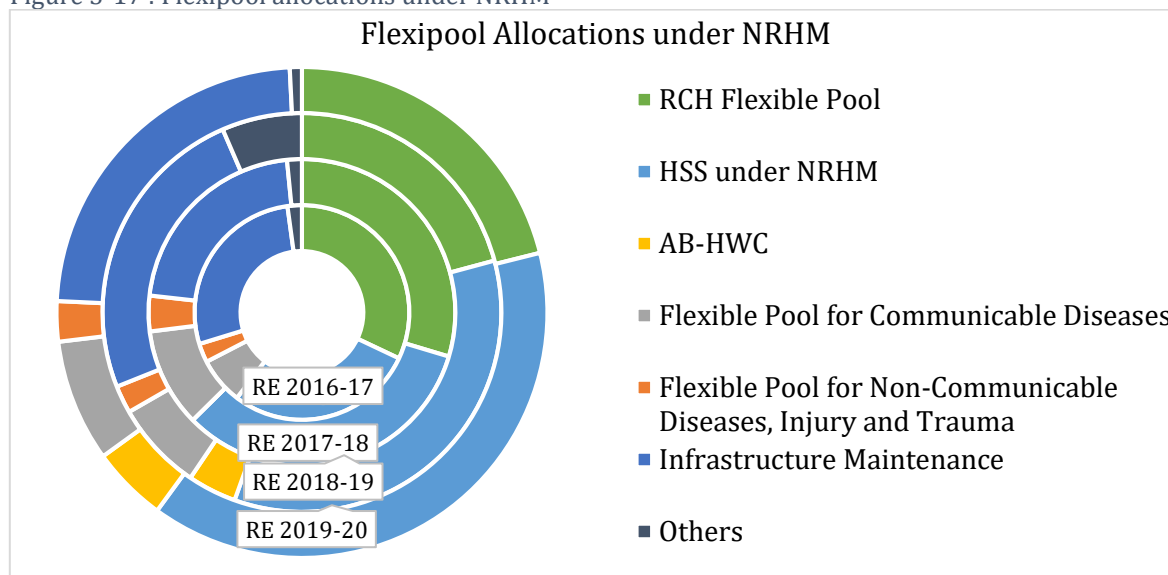
Source: Union Budget for Ministry of Health and Family Welfare 2019-20, 2018-19, 2017-18, 2016-17

Table 3-6: Allocations under NRHM

*in INR Crore

	RE 2016-17	RE 2017-18	RE 2018-19	RE 2019-20
RCH Flexible Pool	6,224	7,545	5,704	5,704
Health System Strengthening	5,513	8,396	9,839	10,676
Ayushman Bharat - Health and Wellness Centres			1,000	1,350
Flexible Pool for CDs	1,373	2,648	1,829	2,156
Flexible Pool for NCDs, Injury and Trauma	555	955	566	708
Infrastructure Maintenance	5,367	5,518	6,201	6,993
Others	420	396	104	246
National Rural Health Mission*	**19,452**	**25,458**	**25,243**	**27834**

Source: Union Budget for Ministry of Health and Family Welfare 2019-20, 2018-19, 2017-18, 2016-17

Figure 3-18: NRHM- Budget Allocations and Expenditure
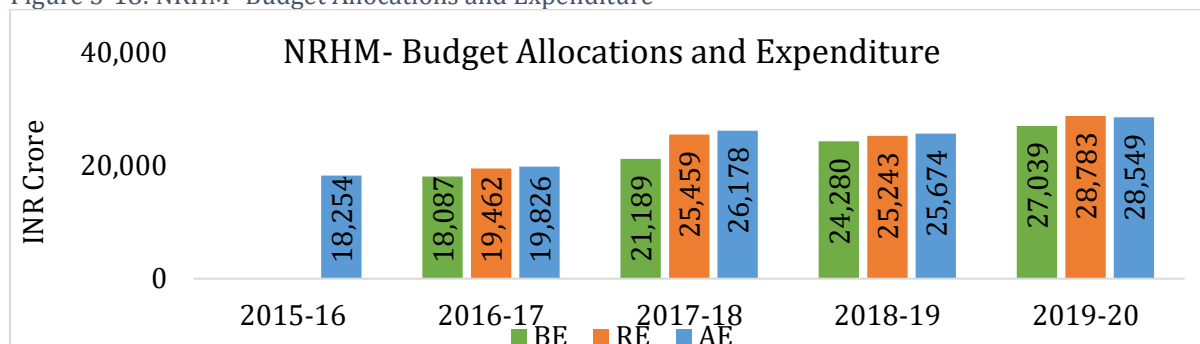
Source: Union Budget for Ministry of Health and Family Welfare 2019-20, 2018-19, 2017-18, 2016-17

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* Does not include the component of Strengthening of State Drug Regulatory System with Rs 206 Crore budget allocation which is a NHM component and not NRHM.

The allocations have increased sharply from 2016-17 to 2017-18, however decreased in 2018-19 in comparison to RE of 2017-18 due to additionality provided for book adjustment of commodity support grants. Therefore, in comparison to BE of 2017-18 and BE 2018-19, there was an increase over 14% in 2018-19. Further, there has been an increase by 10% in budget allocation during 2019-20 in comparison to 2018-19. The utilization of the allocated funds at central level has been over 100% from 2016-17 to 2018-19. The high utilization indicates higher fund absorption capacity of the programs under the NRHM flexi-pool. Therefore, overall the scheme has performed well in terms of utilization of its allocations.

When compared to 2018-19, in 2019-20, the pool of funds for non-communicable diseases has increased by 27% at INR 717 Crore. Amongst all the flexi pools, funding for the pool of funds for non-communicable diseases has been the maximum. The allocation for the funding pool for communicable diseases and immunisation has increased by 19% and 8% respectively. Under RCH Flexible Pool, the allocations have decreased in BE 2018-19 in comparison to RE of 2017-18 due to additionality provided for book adjustment of commodity support grants. NHM's percentage share in the total budget has decreased from 73% in 2006-07 to 51% in 2019-20. This may be on account of increased devolution of resources to states following the recommendations of the 14th Finance Commission.

State level analysis

- Till FY 2014-15, GoI provided 75 % of the funds for NHM and states provided 25 %. In October 2015, the fund sharing ratio was changed to 60:40. Fund sharing ratio for North-Eastern states including Sikkim and other special category states of Jammu & Kashmir, Himachal Pradesh and Uttarakhand is 90:10.

- The funds provided by the Central Government are divided into two components: The Government share based on States' approved budgets and a performance-based incentive. Till FY 2017-18, the performance incentive accounted for 10% of the total Government of India support. This increased to 20% in FY 19.

- During FY 2018-19, 83% of state proposals (of total value INR 47,007 Crores) were approved. This is higher than the 74% average approval given during FY17 and 82% in FY18. The state which received the lowest approval rate was Nagaland at 55% followed by Arunachal Pradesh (61%) and Jharkhand (69%). Odisha and Madhya Pradesh received 94% and 93% of their proposed funds respectively. In FY17 and FY18, Assam and Meghalaya received the lowest approvals (in %).

- From FY18 to FY19, the total Government funding has increased from INR 19,995 Crores to INR 22,181 Crores (24% increase). The increase in this funding was driven by an increase in performance-based incentives. The funds provided under performance incentives increased by 120% from INR 2,000 Crores to INR 4,436 Crores. Over this period, the Government core funding decreased in 14 states.

- Unspent balances at State level are still high in NHM funding. These balances have increased from more than INR 10,000 Crores in FY17 to more than INR 12,500 Crores in FY19.

- As discussed in Figure 2-24 in section 2.2.7, the States' expenditure under NHM is increasing since 2015-16. Further, it has been noted that States need more time to take up complete financial responsibility (without central support) of NHM (EY Primary Analysis: KIIs, 2019). Also, some of the existing key risks/factors impacting sustainability of the mission are (EY

Chapter 3: National Rural Health Mission

Primary Analysis: KIIs, 2019):
- o Sustained political willingness and commitment to assign high priority to the public health programs and higher budgetary allocation to health sector
- o Adaptation to needs of epidemiological disease and demographic transitions in the community.

Health and Wellness Centres

In FY 2018-19, INR 1,200 Crores were allocated for HWCs. This increased by 33% to INR 1,600 Crore in FY 2019-20 (BE). INR 2,800 Crores have been allocated to HWCs since the launch of Ayushman Bharat.

Impact of introduction of treasuries

According to a working paper by National Institute of Public Finance and Policy (NIPFP) on Utilisation, Fund Flows and Public Financial Management, introduction of treasuries under NHM has had both positive and negative implications in the fund flow mechanism (National Institute of Public Finance and Policy, 2017). It has been observed that after the introduction of state treasuries, the accountability of states towards NHM spending has increased. This has, however, added an additional layer in the fund flow mechanism of NHM and has increased complexities associated with the administrative procedures for flow of funds, resulting in delays in the availability of NHM funds released for utilisation by the implementation agencies (National Institute of Public Finance and Policy, 2017).

Case Study 14 – NHM Conditionalities Framework

Introduction

Conditionalities Framework under National Health Mission is a result-based funding process in which the States performing well on the select indicators get more budgetary support based on selected outcomes, outputs and process indicators verified through various data sources and State reports. The framework gives the States a chance to earn incentives through performance-based funding which has been increased from 10% to 20% of the total allocation under flexi pools of NHM within the existing State pools.

The framework for 2018-19 was based on 7 key indicators while 75% full immunization coverage in case of EAG, North-Eastern (NE) and Hill states and 80% for rest of the States and UTs was used as a qualifying criterion for the States to claim the incentives.

Implementation of the practice
- The Framework is conveyed to the States at the beginning of financial year which gives them one year to improve their performance. In September-October, mid-term assessment is conveyed to the States to provide a status of their performance and scope for improvement.
- Five pools made in proportion to the NHM funds allocated are: 1) EAG 2) Non-EAG 3) North East 4) Hilly States 5) UTs.
- Based on the final assessment, States in each pool are incentivised or penalized and the funds left in the pool were distributed among /as NHM Budget among States in the pool to avoid more funding to better performing States and maintain equity in distribution of funds.
- Methodology: The indicators and their formulas along with incentive/penalty score have been detailed below

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1. Improving Incremental performance based on NITI Aayog Report	Differential Score of state/ UT = (Composite Index Score in 2017-18) - (Composite index score in 2015-16) Incentive/ Penalty Points = (Differential score/ Highest or Lowest Composite Index Score achieved) *40/- 40 *40 for states scoring more than 0 and -40 for states/ UTs scoring less than 0 as differential score*
2. Operationalizing Health and Wellness Centres (HWC)	Operational HWC as % of total SC = (No. of Operational HWC*/Total functional Sub Centres*) *100 *(as on 31st March 2019)* Incentive/ Penalty Points = 20 points if percent of operational HWC is >=10% 0 points if percent of operational HWC is <10% and >=7.5% -20 points if percent of operational HWC is <7.5%
3. Implementing Human Resource Information System (HRIS)	The assessment gave +10 to -10 points for HRIS operationalization and +5 to -5 points for synchronization with HMIS Incentive/ Penalty Points = • Availability of facility wise integrated line-listing of all HR (regular and contractual) Yes: +3 or No: -3 • Salary invoice for both regular and contractual HR generated through HRIS: +4 to -4 • Yes: +4 or No: -4 • Transfer orders for both regular and contractual Human resource generated by HRIS: +3 to -3 • Yes: +3 or No: -3 • HRIS data to match with HMIS reporting: +5 to -5 • Yes: +5 or No: -5
4. Grading of District Hospitals	Based on the findings of "The Health of our Hospitals" study conducted by NITI Aayog, States were to be given assessed based on the percentage of districts hospitals who have at least eight fully functional specialties as per IPHS. Since the report was not published, 10 points were given to each State.
5. Mental Health Services in Districts as per framework	Percent districts covered under Mental Health program = (No. of districts where Mental Health Program is functional/No. of districts approved under Mental Health Program) * 100 Incentive/ Penalty Points = • 5 points if >=75% of the districts covered • 3 points if >=50% districts in Non-EAG and >=40% districts in EAG states covered • 3 points if <50% districts in Non-EAG and <40% districts in EAG states covered • -5 points if <40% districts in Non EAG and <30% districts in EAG states covered
6. Screening of 30+ population for Non-Communicable Diseases	Percent of 30 plus population screened for NCDs = (No. of persons screened for NCDs/Total population to be screened) *100 Incentive/ Penalty Points = • 5 points if >=15% of 30 plus population screened for NCDs • 3 points if >=7% and <15% of 30 plus population screened for NCDs • -3 points if <3% and >=2% of 30 plus population screened for NCDs • -5 points if <2% of 30 plus population screened for NCDs
7. Rating of PHCs (both Urban and rural) on their functionality	Percent of PHCs rated 3 stars or more = (Number of PHCs rated 3 stars or more/Total PHCs) *100 Incentive/ Penalty Points = • 5 points if >=75% of PHCs in Non-EAG and >=60% of PHCs in EAG states having 3 or more stars • 2 points if <75% and >=50% of PHCs in Non-EAG, <60% and >=40% of PHCs in EAG states having 3 or more stars

	• 0 points if <50% and >=40% of PHCs in Non-EAG, <40% and >=30% of PHCs in EAG states having 3 or more stars • -5 points if <40% of PHCs in Non-EAG, <30%of PHCs in EAG states having 3 or more stars

Results of practice

The performance-based funding has enhanced accountability and generated positive actions by the States. The States investing and demonstrating improved performance in health sector are benefitted with increased incentives. It has also ensured that funds from high focus states and other weaker group of States, because of the penalty, do not go to better-performing states and disturb the equity in fund distribution.

Lessons Learnt

The conditionalities framework introduces a good amount of competition and aims to increase co-operation among the States by matching the good practices from other States for scaling up of a program.

Conclusion

A similar practice like the conditionalities framework can be adopted by other CSS in different sectors for encouraging competition and accountability in the States. Such practice can help in addressing sector priorities (output/outcome targets) by incentivising State participation.

Further Reading

https://nhm.gov.in/WriteReadData/l892s/50923145171570520489.pdf

Key Findings:

- Performance based funding to states has been yielding positive results. It has been observed from EY Primary Analysis: KII, that graded incentives for very high performing States does not take away funds from the comparatively weak performing States due to grouping of states into five pools[73] on the basis of proportion of NHM funds allocated and performance. Further, this has led to increased competitiveness within one pool. This also brings in the element of equity and efficiency in the allocations.

- Routing of funds through treasury has resulted in an average delay of about 70-80 days (EY Primary Analysis: KIIs, 2019); (IIPH & IIM-A, 2020). However, the transparency and accountability ensured by the fund flow mechanisms through treasuries is a positive development (EY Primary Analysis: KIIs, 2019).

- Different accounts for multiple programs are functional in many States. Funds are released from these accounts as per the program requirements. This reduces transparency and affects smooth fund flow (EY Primary Analysis: KIIs, 2019); (NIPFP, 2020).

- As discussed under Section 2.2.7- Out of the overall health expenditure under NHM (States+Centre), the contribution of States is ~55%. Most states allocated less than 2% of their GSDPs (in 2017-18 and 2018-19) towards health against the NHP-17 recommendation of 8% of GSDP. 8-EAG states and Assam have the highest MMR and IMR load in the country while their state share per capita remains almost equal to or lower than the average for all the States.

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[73] EAG, Non-EAG, North East, hilly states, UTs.

3.2.8 Output-Outcome Framework (Program Level)

A. Health Systems Strengthening

Health Systems Strengthening component has been evaluated on following parameters: i) Public Health Infrastructure, ii) Accessibility of Health Services, iii) Quality of Care and Hygiene in Health Facilities, and iv) Human Resources.

The public health infrastructure parameter discusses status of health facilities including SCs, PHCs, CHCs, SDH, DH, FRUs, 24×7 functioning facilities, and HWCs. Accessibility of health services discourses various initiatives for improving accessibility of health services, namely: Ambulances and Mobile Medical Units, Free drugs Service Initiative, Free Diagnostics Service Initiative, Pradhan Mantri National Dialysis Program, Equipment and machines. Further, quality of care and hygiene parameter highlights the progress under initiatives such as IPHS, NQAS, LaQshya, Kayakalp, Mera Aspataal, grievance redressal system, patient satisfaction surveys, MCTS etc. Lastly, the human resources parameter discusses the status of doctors, specialists and other allied workers at public health facilities and capacity building of staff.

Under National Health Mission (NHM), financial support is provided to States to strengthen the public health system including upgradation of existing or construction of new infrastructure and availability of HR. HSS has contributed towards increasing availability of health infrastructure and services in the country. For ensuring quality services, various quality initiatives have been introduced in the last few years such as NQAS, IPHS etc. NHM has adopted a systems approach and encourages states to adopt innovative strategies for strengthening healthcare system towards increased sustainability.

- Under NHM high focus states can spend up to 33% and other States up to 25% of their NHM funds on infrastructure.

- The population norms for setting up of public health facilities as per Indian Public Health Standards (IPHS) are as under:

    o Sub Centre: 1 per 5,000 population in general areas and 1 per 3,000 population in difficult/tribal and hilly areas

    o Primary Health Centre: 1 per 30,000 population in general areas and 1 per 20,000 population in difficult/tribal and hilly areas

    o Community Health Centre: 1 per 1,20,000 population in general areas and 1 per 80,000 population in difficult/tribal and hilly areas.

- Revision of IPHS 2012 is being undertaken to create more robust standards especially after introduction of NUHM in 2013 to strengthen the primary and secondary care.

- A new norm for setting up of a SC based on 'time to care' within 30 minutes by walk from a habituated area has been adopted for selected districts of hilly and desert areas.

- First Referral Units (FRUs) mostly set up at sub district level provide comprehensive obstetric care services including cesarean section, new born care emergency, care of sick children, full range of family planning services, safe abortion services, treatment of STI/RTI, availability of blood storage unit and referral transport services.

- Under RMNCH+A, new born health is managed through Facility-Based New Born Care (FBNC) and Home-Based New Born Care (HBNC). FBNC provides for the establishment of New Born Care Corners (NBCC), New Born Stabilisation Units (NBSU) and Special New Born Care Units

Chapter 3: National Rural Health Mission

(SNCU) (Ministry of Health and Family Welfare, 2011). NBCCs provide essential care while NBSUs and SNCUs provide treatment for sick new borns.

- To further improve mother and child health outcomes, Mother and Child Health Wings are constructed at District Hospitals/District Women's Hospitals and other high case load facilities at sub-district level.

- Health and Wellness Centres aim at provision of comprehensive primary healthcare services for which Sub Centres and Primary Health Centres in rural and urban areas are being upgraded creation of 1,50,000 HWCs by 2022 was announced in February 2018. HWCs are expected to deliver an expanded range of services which includes early identification, basic management, counselling, ensuring treatment adherence, follow up care, ensuing continuity of care by appropriate referrals, optimal home and community follow up, and health promotion and prevention for the expanded range of services including NCDs. The roll out plan of AB - HWCs is given below:
    FY 2018-19 = 15,000
    FY 2019-20 = 25,000 (Cumulative 40,000)
    FY 2020-21 = 30,000 (Cumulative 70,000)
    FY 2021-2022 = 40,000 (Cumulative 1,10,000)
    Till 31st December 2022 = 40,000 (Cumulative 1,50,000)

Health System Strengthening was conceived as a component of NRHM focussing on strengthening infrastructure, manpower, free patient transport, frontline health workers, reducing out-of-pocket expenditure, creating and upgrading public health facilities and providing quality care services. Funds are provided for upgradation of existing and construction of new infrastructure (Ministry of Health and Family Welfare, 2014). The spending for HSS has been increasing every year as shown in the following Figure-3-19.

Figure 3-19: Budgetary Allocation for Health System Strengthening
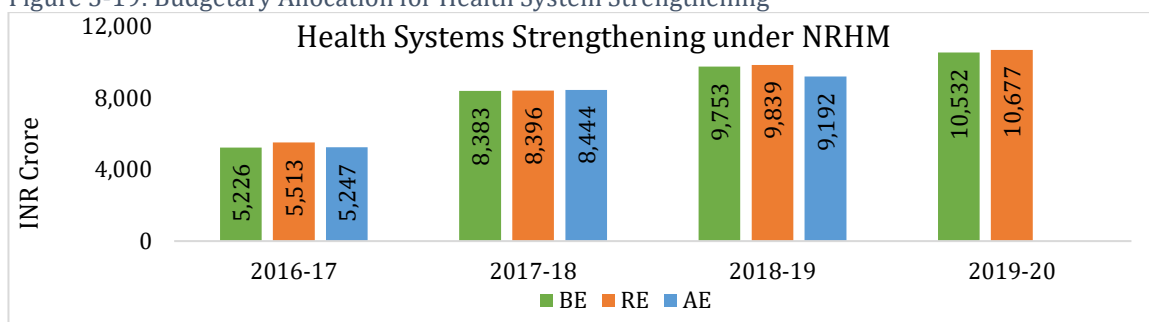
Source: Union Budget for Ministry of Health and Family Welfare 2019-20, 2018-19, 2017-18, 2016-17

Over the last 14 years since the inception of NRHM, the infrastructure growth has been significant.

Evidence from NSSO data (2017-18) shows that there has been an increase in the number of outpatient and in-patients provided health care at public health facilities. The IPD cases in urban has decreased over the years. As given in Figure 2-21.

There is also a major increase in the number of institutional deliveries at health facilities and a substantial increase in coverage of women and children receiving out-reach health services. Presented below is the data documenting this increase in service delivery, in relation to the efforts made under NHM for strengthening public health facilities.

i. Public Health Infrastructure

Status of availability of public health infrastructure is discussed below:

- As per the Rural Health Statistics 2019, As on March 31, 2019, the number of various public health facilities is as given in Table 3-7:

Table 3-7: Total public health facilities

Facility	Rural	Urban	Total
Sub Centres[74]	1,57,411	3,302	1,60,713
PHCs[75]	24,885	5,190	30,075
CHCs	5,335	350	5,685
SDH			1,234
DH			756

Source: Rural Health Statistics, 2019

Table 3-8: Change in number of facilities from 2015 to 2019

Facility	2015	2019	% increase
SC	1,53,655	1,60,813	4.65%
PHCs	25,308	30,075	18.83%
CHCs	5,396	5,885	9.06%
SDH	1,022	1,234	20.74%
DH	763	756	-0.09%

Source: Rural Health Statistics- 2015, 2019

First Referral Units and 24×7 functioning facilities

An FRU is defined as a facility that provides the complete range of RCH services. An existing facility (District Hospital, Sub-divisional Hospital, Community Health Centre etc.) can be declared a fully operational First Referral Unit (FRU) only if it is equipped to provide round-the-clock services for emergency obstetric and New Born Care, in addition to all emergencies that any hospital is required to provide. It should be noted that there are three critical determinants of a facility being declared as an FRU: i) Emergency Obstetric Care including surgical interventions like cesarean sections; ii) new-born care; and iii) blood storage facility on a 24-hour basis.

As on March 31, 2019, 3,204 FRUs were present in the country. Of which 95.7% of the FRUs have Operation Theatre facilities, 96.7% of the FRUs have functional Labour Room while 75.3% of the FRUs have Blood Storage/ linkage facility (RHS, 2019).

Table 3-9: Increase in number of FRUs since 2005

Total number of centres operational as FRUs	as on March 31, 2005	as on March 31, 2020
India	940	3,122
High Focus States- Non NE (10)	82	923
High Focus States- NE (8)	56	129
Non High Focus States-Large (11)	798	2,009
Non High Focus States-Small & UTs (7)	4	51

Source: NHM Quarterly MIS Report- March 2020

One of the important goals of NHM was to ensure that every primary health care facility achieved the standards set by IPHS. The focus on efforts towards achieving this came to be known as 24×7 PHCs which means that at least one medical officer and three staff nurses are available 24×7 in every PHC and ensuring that institutional delivery services with a basic emergency obstetric care package and a newborn care corner are also available. A total of 18,071 24×7 public health

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[74] Includes SC and HWC-SC

[75] Includes PHC and HWC-PHC

facilities are functioning in the country as on March 31, 2020 (NHM Quarterly MIS Report- March 2020).

Of the 17,511 sub-district facilities functioning on a 24×7 basis, ~54% are PHCs (including APHCs and others), ~28% CHCs, and ~8% are facilities above CHC level but lower than district level. All CHCs are required to be 24×7 functioning facilities of which 12.9% CHCs are not functioning 24×7. A few reasons attributing to non-functioning of all CHCs as 24×7 were reported as lack of specialist and blood storage facilities (EY Primary Data Analysis: KII, 2019). Approximately 40-50% PHCs are required to be functioning 24×7 (Ministry of Health and Family Welfare, 2020), ~31% are functioning 24×7 (NHM Quarterly MIS Report: March 2015, March 2020; Rural Health Statistics, 2019; MoHFW, 2020). Of these identified 24×7 PHCs, more than 75% are functional. There is a need to examine the strategy for further strengthening of the PHCs in terms of the package of services they are configured to deliver, appropriate and adequate human resources needed, and prioritisation of PHCs to be taken up first for strengthening.

Health and Wellness Centre

As on July 01, 2020 total of 40,890 HWCs have been created in the country, out of which 21,152 are SHC-HWC, 16,423 are PHC-HWC and 3,315 are UPHC-HWC[76].

Figure 3-20: Operational Status of HWCs against target
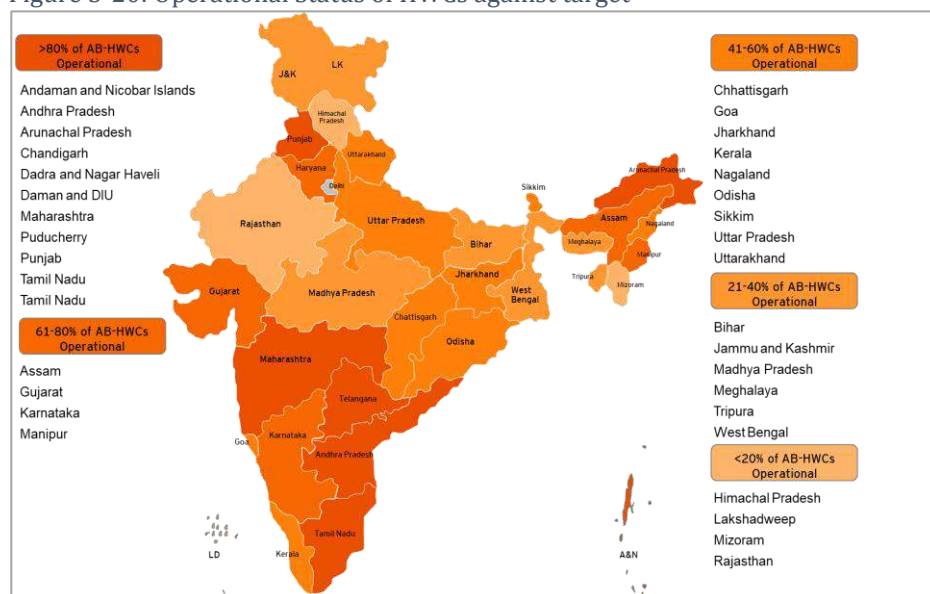
*Operational Status till October 2019
Source: Ayushman Bharat Health and Wellness Centres Accelerating towards health for all April 2018- September 2019

Figure 3-21: %HWCs with area for wellness activities
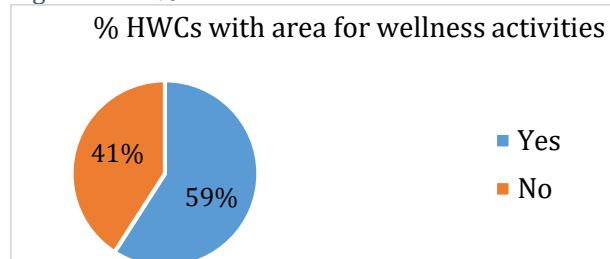
Source: EY Primary Analysis: Facility Survey, 2019

Figure 3-22: %HWCs providing diagnostic services
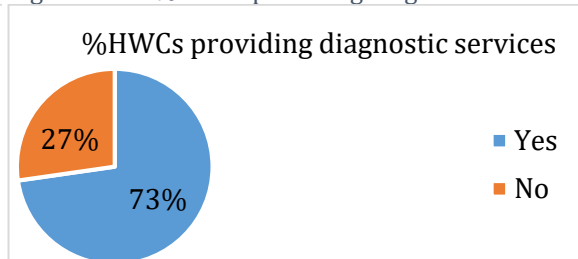
Source: EY Primary Analysis: Facility Survey, 2019

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[76] https://ab-hwc.nhp.gov.in/ ; last accessed on July 1 2020

Figure 3-23 : Management of Communicable Diseases at HWCs

Management of Communicable diseases

	Yes	No
Referral of complicated cases	45%	55%
HIV Screening (in Type B SHC), referral and support for HIV treatment.	68%	32%
Provision of DOTS for TB & MDT for leprosy	55%	45%
Diagnosis, treatment & follow-up care for vector borne diseases	86%	14%
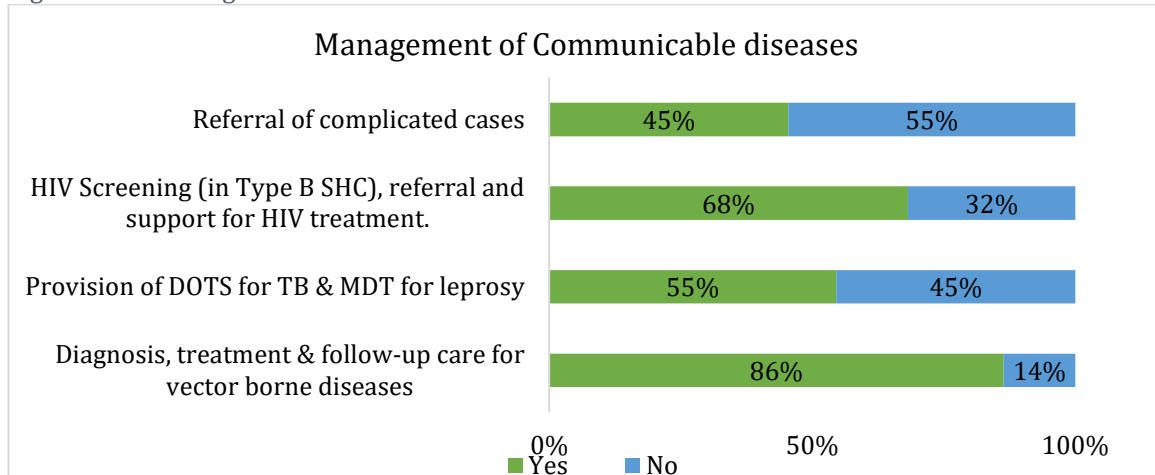
Source: EY Primary Analysis: Facility Survey, 2019

Figure 3-24 :Management of Non-Communicable Diseases at HWCs

Management of Non-Communicable diseases

	Yes	No
Screening and treatment compliance for Hypertension and Diabetes, with referral if needed	59%	41%
Screening and follow up care for occupational diseases , fluorosis, respiratory disorders and epilepsy	68%	32%
Cancer - screening for oral, breast and cervical cancer and referral for suspected cases of other cancers	50%	50%
Confirmation and referral for deaddiction and follow up for all diagnosed cases	45%	55%
Linking with specialists and undertaking two-way referral for complication	50%	50%

Source: EY Primary Analysis: Facility Survey, 2019

It has been observed from the above figures that:

- 73% of the HWCs visited were reported to be providing diagnostic services.
- CPHC-NCD app has been developed to ensure follow up of screened patients for non-communicable diseases. Follow up reminders are sent to the mobile number of the patients. However, there is a need to further strengthen the follow up system.
- Positive cases after screening are being treated at PHCs or referred to appropriate higher facilities for management and treatment. Afterwards, they are followed up at the community/ Sub centre/ PHC level as per need and relevance.
- It was also observed that the many of the NCD clinics were not fully functional (EY Primary Analysis: KIIs, 2019). Functionality of NCD clinics at CHC/DH was variable in different States, which could be attributed to HR shortages (12th CRM, 2020).
- Comprehensive primary healthcare is dependent on well-functioning HWCs through a) interlinkage with community and b) strong referral system supported by higher facilities. (EY Primary Analysis: KIIs, 2019).

A total of 61,966 facilities have received approvals till 17th September 2019. Only few states/UTs such as Maharashtra, Punjab, Andhra Pradesh, D&N haveli, Daman & Diu and Chandigarh have more than 25% of their total facilities converted into functional AB-HWCs (NHM Quarterly Review Meeting, July 2019).

Chapter 3: National Rural Health Mission

Best practices observed in HWCs of different States	
State/UT	**Best Practices**
Andhra Pradesh	• Safe Delivery Calendar
Karnataka	• Streamlined recruitment process and Performance Linked Payments of CHOs
Kerala	• PRI Involvement in Palliative Care • SN designated for NCD screening, also working as Ophthalmic Assistant, ECG technician- UPHC-HWC • Arogya Sena / Health Ambassadors
Odisha	• Population Based Screening – Campaign mode • Yoga and Meditation – for pregnant women • Mahila Aarogya Samitis (SHG) actively involved for in house profiling, IEC and health promotional activities – urban areas • Weekly Specialist services in UPHCs • Mental Health Services provided by trained MO and SN through NIMHANS (R/U)
Tamil Nadu	• 3 months of buffer stock of medicines at SHC, PHC • Population being served is defined with SHC – PHC linkages • 96 Poly clinics providing Specialist services in UPHCs • SN designated for NCD screening- UPHC-HWC
Telangana	• Basti Dawa Khanas in Urban Areas • State run diagnostic hub • Streamlined collection of samples and reporting
Maharashtra	• Model AB-HWCs – SHC layout-3 Designs • Certificate Course in Community Health through MUHS (6300 candidates/batch) • Netradan trust – NGO collaboration for diagnosis and treatment for cataract etc.
Jharkhand	• ATAL Clinic (Community Clinic) to cater to health care needs of urban marginalised population by Nagar Nigam
Gujarat	• Arogya Samanwaya – Integration of Ayurvedic and Yogic practices with Allopathy • Yoga at SHC/PHCs - daily by trained CHO/MPW-M/ANM, twice weekly by trained ANMs at UPHCs • Meditation and Saptdhara
Uttar Pradesh	• Community Health Officer – Virtual Classrooms • Curriculum for CHOs improvised.
Himachal Pradesh	• Expansion of Population based NCD screening to 18-30 years age group • Alcohol Cess
Goa	• Linkages with School Health Programs - Identified Health & Wellness Ambassadors • Expanded Wellness Activities – laughter clubs etc.
Dadra & Nagar Haveli	• Upgradation of Infrastructure using MPLAD / CSR funds
Haryana	• VIA screening started at PHCs by trained staff nurses. • CSR leveraging – TATA Steel and Indian Oil • Eye Camps in Urban Areas for Drivers to reduce accident cases
Chhattisgarh	• NCD Suraksha Maah • Attractive & Informative Internal branding for AB-HWCs • Collaboration with Govt. Medical Colleges for community outreach and service delivery in urban areas. • Mental Health Services provided by trained MO and SN through NIMHANS (R/U)
Daman & Diu	• e-Arogya (Cloud based health ecosystem) at all public health facilities

Source: NHM Quarterly Review Meeting, July 2019

Community Health Officers (CHO) recruitment needs strengthening. Delay in admission process of CHOs for July 2019 session has been observed in states like Rajasthan, Bihar, Uttar Pradesh, Haryana, Telangana, Jammu & Kashmir and Uttarakhand. Against the 37776 approved for 2018-2020 the deficit in CHO is 4,243 (NHM Quarterly Review Meeting, July 2019).

ii. Accessibility of Health Services

Accessibility and affordability have been discussed in detail in the previous chapter on Health sector. Figures 3-25 and 3-26 summarise the availability of services at DH and CHC levels based on primary surveys. The lack of service is largely due to unavailability of specialists.

Figure 3-25: Availability of Services in DH
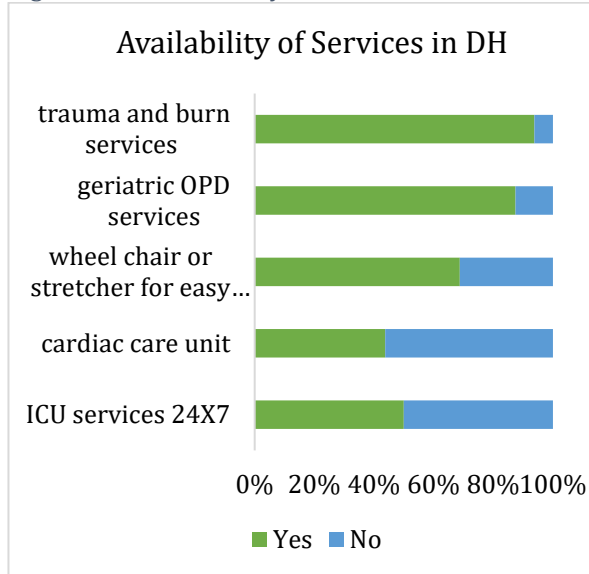
Source: EY Primary Analysis: Facility Survey, 2019

Figure 3-26: Availability of Services in CHC
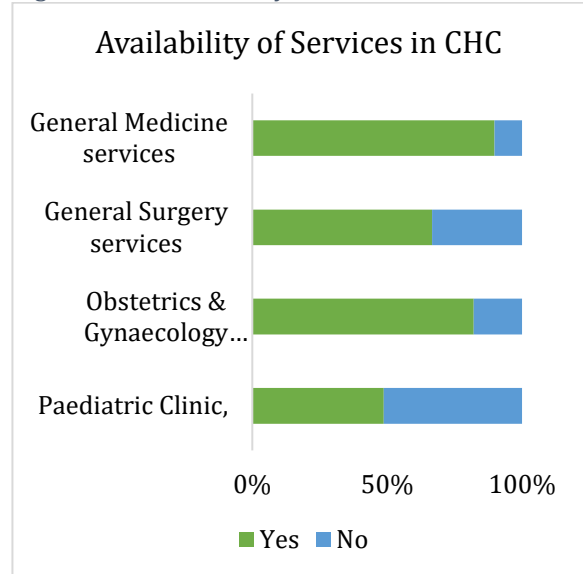
Source: EY Primary Analysis: Facility Survey, 2019

Ambulances and Mobile Medical Units

Further, one of the key dimensions which has changed in the outlook on accessibility is transportation facility, especially after construction of roads in the rural area. In the year 2005, when NRHM was launched, the nation had no functional model of either emergency response systems or assured transport for pregnant women in any state or region (NHSRC, 2012). There were a large number of hospitals linked private ambulance services which catered to limited populations in major cities. One of the achievements of NHM is the patient transport ambulances operating under Dial 108/102 ambulance services. Bike ambulances have also been made available in few states like Karnataka, Delhi etc. As of February 17, 2020, 33 States/UTs have the facility where people can Dial 108 or 102 telephone number for calling an ambulance.

Dial 108 is predominantly an emergency response system, primarily designed to attend to patients of critical care, trauma and accident victims etc. 10, 238 ambulances are being supported under 108 emergency transport systems including new ambulances (NHM Quarterly MIS Report- March 2020). Dial 102 services essentially consist of basic patient transport aimed to cater to the needs of pregnant women and children though other categories are also taking benefit and are not excluded. JSSK entitlements e.g. free transfer from home to facility, inter-facility transfer in case of referral and drop back for mother and children are the key focus of 102 service. 10,147 ambulances are operating as 102 patient transport including new ambulances (NHM Quarterly MIS Report- March 2020).

5,499 empanelled vehicles are also being used in some States to provide transport to pregnant women and children e.g. Janani express in MP and Odisha, Mamta Vahan in Jharkhand, Nishchay Yan Prakalpa in West Bengal and Khushiyo ki Sawari in Uttarakhand (NHM Quarterly MIS Report, March 2020). As per data provided by State reports, on an average 3-8 trips are made by each ambulance per day covering 100-200 km (11th CRM, 2018).

The increase in 102 ambulance services has contributed to increase in percentage of institutional deliveries by making available transportation of pregnant women from their homes to facilities free of cost. It was observed that the ambulance response time is under 30 minutes in all the covered states (EY Primary Analysis: Household Survey, 2019).

States like West Bengal and Uttar Pradesh reported higher penetration of 102/108 ambulances for reaching health facility (EY Primary Analysis: Household Survey, 2019).

Figure 3-27 : Means of transport to reach the health facility for childbirth services
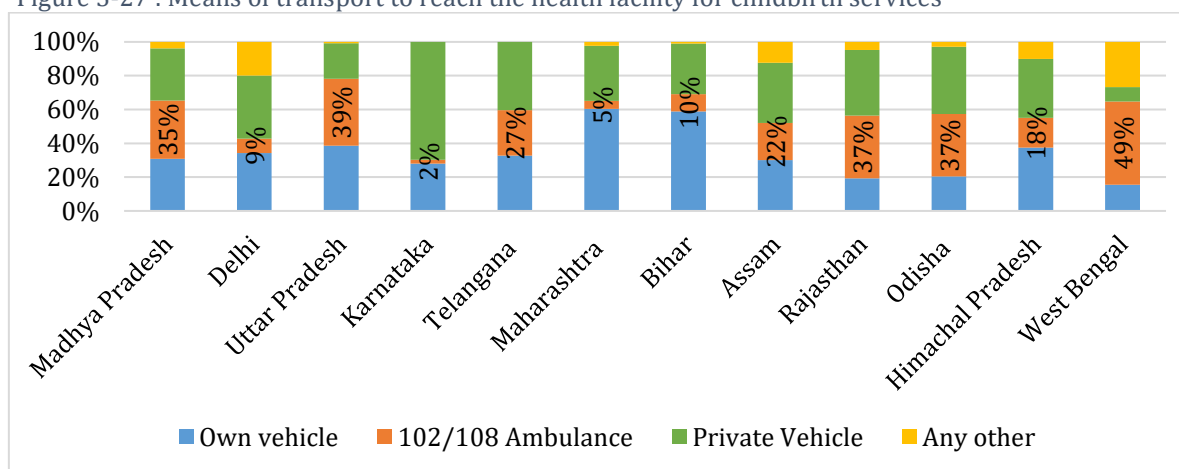
Source: EY Primary Analysis: Household Survey, 2019

Figure 3-28: Means of transport to reach the health facility in urban and rural areas
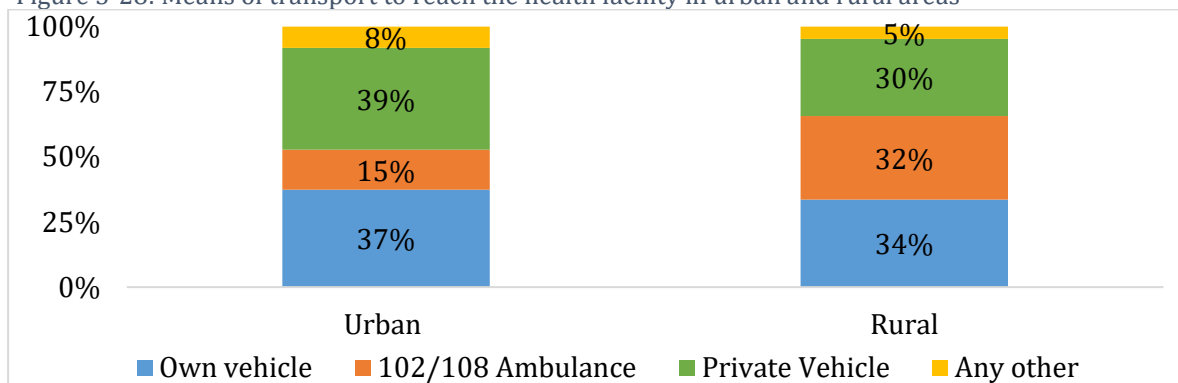
Source: EY Primary Analysis: Household Survey, 2019

Section 2.2.4 also covers ambulance services and MMUs in detail.

Case Study 15 – Rs 1 Cess SIN TAX on Liquor for EMRT 108 Ambulance Services – Himachal Pradesh

Introduction:

Due to the steep terrains in Himachal Pradesh, makes the state highly vulnerable to natural and man-made disasters. The state-run 108 ambulance services play a vital role in emergency medical response and transportation. Since alcohol consumption causes social and medical problems, SIN TAX was levied on alcohol to finance the 108-ambulance service.

Implementation of the practice

The state proposed a SIN TAX on every bottle of liquor sold in the state. As this is the first of its kind, a tax at the rate of Rs. 1/per bottle was levied in 2018-19 on every bottle of liquor sold in the state through Excise and Taxation department. The revenue generated through the SIN TAX is credited to EMRT society to support 108 ambulance services. This type of Pigouvian tax is also expected to reduce the consumption of alcohol in forthcoming years.

Results of the practice – output, and outcomes

Rs. 7.95 Cr of SIN TAX was collected in the year 2018-19, and the funds are being utilized for ambulance services.

Liquor Bottles (Year)	Cess @ Rs 1/No of items	Total Collections
2018-19	7,95,35,099	Rs. 7,95,35,099

Conclusion

Since, alcohol does not come under the purview of GST but is covered under VAT, this type of SIN TAX can be levied and utilised for the benefit of health and health related promotional activities and become a supportive component of the state government for funding public health Programme. In the future, SIN TAX can also be levied on other items that contribute to the disease burden

Free drugs Service Initiative

In 2013, GoI launched Free Drug Service and Free Diagnosis Service to move towards "Health for All". The operational guidelines provided emphasis is on the procurement of generic drugs. Under the free drugs service initiative, procurement is conducted by the Central Procurement Board. Suppliers are selected through a bidding process and are required to supply the tendered drugs to the district level. Every district must have a District Drug Warehouse (DDW) or Regional Drug Warehouse (RDW) in case of smaller districts. The drugs are then transferred from DDW to the respective healthcare facilities or drugs distribution centres. During this process, quality, temperature and packaging standards need to be ensured to prevent loss or spoilage of drugs. Facility level storage systems need to be established backed by an IT-enabled inventory system. The procurement of materials is required to be conducted as per the Essential Medicines List (EML). At the SC level, 57 medicines have been prescribed while 285 medicines have been prescribed at PHC level. At CHCs, 455 medicines and at DHs, 544 medicines have been prescribed. States are free to increase or decrease the medicines in the EML (Ministry of Health and Family Welfare, 2018).

Under Free Drugs Service initiative, support is provided for provision of essential drugs free of cost in public health facilities. The support is not only for drugs but also for various components necessary for effective implementation of free drugs initiative viz. strengthening/setting up robust systems of procurement, quality assurance, IT-backed supply chain management systems like Drugs and Vaccines Distribution Management System (DVDMS) developed by CDAC, warehousing, prescription audit, grievance redressal, Information, Education and Communication (IEC), training, dissemination of Standard Treatment Guidelines, etc. Under NHM, incentives were provided to States to implement Free Drug Service Initiative.

Under the Free Drugs Service Initiative all States have reported to have notified policy to provided free essential drugs in public health facilities. Under NHM incentives are provided to States to

implement Free Drug Service Initiative. States of Rajasthan, West Bengal, Uttar Pradesh, and Madhya Pradesh reported best access to drugs, but Himachal Pradesh, Haryana, Uttarakhand, Meghalaya and Manipur reported the opposite (Ministry of Health and Family Welfare, 2017).

The overall accessibility and availability of essential medicines across various levels of the health system has improved significantly after the introduction of the NHM (IIPH & IIM-A, 2020). Several studies have also suggested improvement in access to services due to free medicine initiatives (Selvaraj et al., 2014; Chokshi et al., 2016). Some of the states lacked the technical capacity for effective implementation for free drug service initiatives resulting in uneven status of availability of drugs across the nation (IIPH & IIM-A, 2020).

Table 3-10: List of Progress and Laggards under free drugs initiative

Progress	Laggards
32 States/UTs have centralized procurement	Andaman & Nicobar, Chandigarh, Dada & Nagar Haveli & Lakshadweep yet to implement.
29 States/UTs have operationalized IT enabled logistics & supply chain system/DVDMS	Mizoram, Nagaland, Sikkim, A&N Island, Chandigarh, Lakshadweep & Puducherry yet to implement.
28 States/UTs have NABL accredited labs to ensure quality of drugs provided.	Uttar Pradesh, Himachal Pradesh, Manipur, Meghalaya, Goa, A&N Islands, Chandigarh & Daman & Diu yet to implement.
31 States/UTs have facility wise EDL	Manipur, Sikkim, A&N Island, Chandigarh & Lakshadweep do not have facility wise EDL.
14 States/UTs have prescription audit mechanism	Assam, Bihar, D&N Haveli, Delhi, Himachal Pradesh, Jammu & Kashmir, Lakshadweep, Mizoram, Odisha, Rajasthan, Telangana, Tripura (ongoing), Uttarakhand, West Bengal
20 States/UTs have established call centre-based grievance redressal mechanism with dedicated toll-free number	Andhra Pradesh, Assam, Bihar, Chhattisgarh, D&N Haveli, Daman & Diu, Delhi, Himachal Pradesh, Jharkhand, Karnataka, Kerala, Lakshadweep, Madhya Pradesh, Maharashtra, Punjab, Rajasthan, Tamil Nadu, Telangana, Tripura (under process), Uttarakhand

Free Diagnostics Service Initiative

Government of India under the National Health Mission launched the Free Essential Diagnostics Initiative to address the high out of pocket expenditure on diagnostics (10% OOPE on cost of diagnostics – 11% in OPD and 9.6% in IPD as per NSSO 71st round) and improve quality of healthcare services.

Under the Free diagnostics initiative there are enhanced range of free diagnostics-14 tests at AB-HWC-SC and 63 tests at AB-HWC-PHC.

Table 3-11: Progress and Laggards under free diagnostics

Progress	Laggards
FDI Pathology- laboratory services implemented in 33 States /UTs	Yet to be implemented in Mizoram, Nagaland, Uttarakhand
FDI- Tele-radiology implemented in 10 States only	Andhra Pradesh, Assam, HP, Meghalaya, Odisha, Rajasthan, Tripura, Uttar Pradesh, Uttarakhand, West Bengal
FDI CT scan implemented in 23 States/UTs	Yet to be implemented in Arunachal Pradesh, Chandigarh, Chhattisgarh, D&NH, Jammu & Kashmir, Maharashtra, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Uttarakhand

Under NHM, in FY 2018-19, an amount of Rs 1218.31 Crores has been provided to 33 States/UTs for implementation of NHM Free Diagnostics Service Initiative.

Figure 3-29: %Change in average expenditure per hospitalisation in Public Hospitals from 2014 to 2018

% Change# in average expenditure per hospitalisation in Public Hospitals
from 2014 to 2017-18
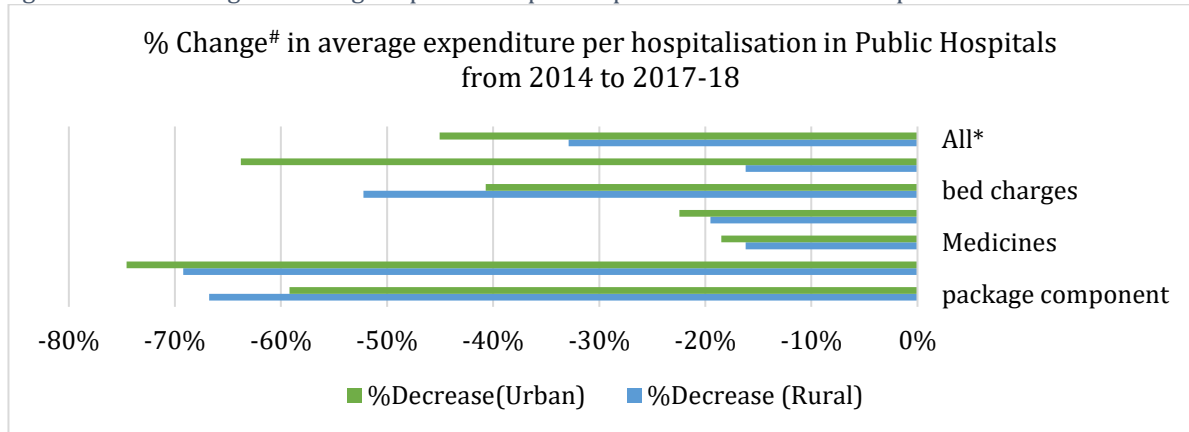
Source: Key Indicators of Social Consumption in India: Health:NSSO 71st and 75th Round
*All includes expenditure on- package component, doctor's/surgeon's fee, Medicines, diagnostic tests, bed charges, Other.
#The percentage change presented is based on constant prices with 2014 as the base.

Figure 3-30: %Change in average expenditure per hospitalisation in Private Hospitals from 2014 to 2018

% Change in average expenditure per hospitalisation in Private Hospitals
from 2014 to 2017-18
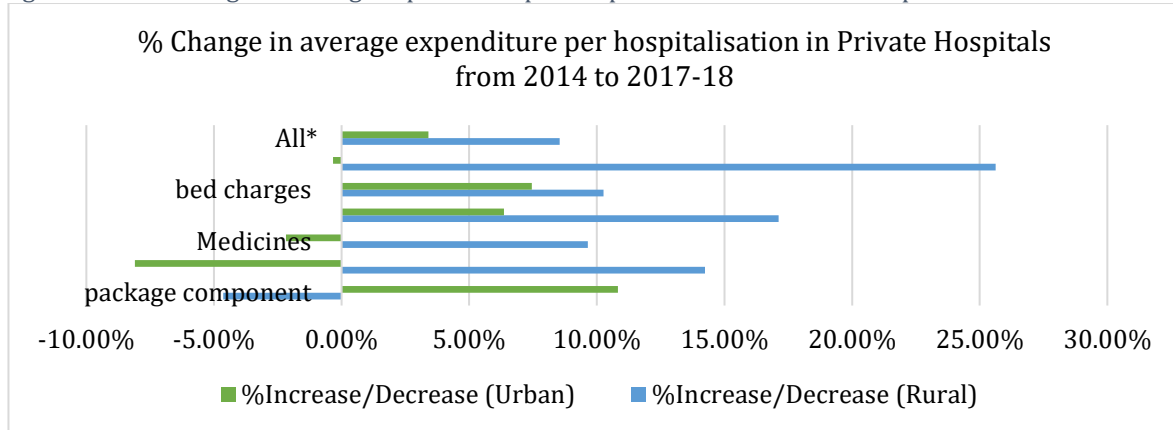
Source: Key Indicators of Social Consumption in India: Health:NSSO 71st and 75th Round
*All includes expenditure on package component, doctor's/surgeon's fee, Medicines, diagnostic tests, bed charges, Other.
#The percentage change presented is based on constant prices with 2014 as the base.

Figure 3-29 and Figure 3-30 show that there is a decrease in average expenditure per hospitalisation case in public hospitals from 2014 to 2017-18, while the same has increased in private hospitals. The substantial decrease in expenditure towards medicines and diagnostic tests can be attributed to NHM's Free Drugs & Diagnostic Initiative. PMJAY, RSBY and other State health insurance schemes which allows public hospitals to earn claims money and use it to provide free medicines, diagnostics etc. have also played a role.

Pradhan Mantri National Dialysis Program (2016)

Under NHM, support has been provided to States/Uts to provide free dialysis services to poor at public health facilities at DH level under Pradhan Mantri National Dialysis Program.

Support has been provided to establish and operationalise blood banks and BSUs at district and FRU level respectively to ensure availability of blood at public health institutions.

PMNDP has been implemented in 34 States /UTS in 465 Districts in 798 Centres deploying 4,727 machines. Total 5.39 lakh patients availed dialysis services and 54,1 lakh Hemo-dialysis Sessions have been held- as on 30 September 2019 which is a ~38% increase from the status as on 31st March 2019.

Chapter 3: National Rural Health Mission

Equipment and machines

Medical devices availability and upkeep is one of the key interventions for people's access to diagnostics, preventive, assistive and therapeutic services. Biomedical Equipment Maintenance and Management Program (BMMP) is an initiative by MoHFW to provide support to state governments to outsource medical equipment maintenance comprehensively for all facilities so as to improve the functionality and life of equipment, simultaneously improving healthcare services in public health facilities- reducing cost of care and improving the quality of care. The program aims to ensure upkeep time for medical equipment in PHC/CHC/DH at 85%, 90% and 95% respectively.

Inventory mapping of all bio-medical equipment has been completed in 29 States/UTs. As of 31st August 2018, 20 States/UTs have implemented BMMP program (through PPP) in accordance with NHM Guidelines. 5 States/UTs are maintaining their equipment in-house using Biomedical Engineers or Annual Maintenance contracts with Manufacturers. 7,56,750 equipment in 29,115 health facilities costing approximately INR 4564 crore were identified. Equipment in range of 13% to 34% were found to be dysfunctional across States / UTs (Ministry of Health and Family Welfare, 2020).

iii. Quality of Care and hygiene in Health Facilities

Another objective of NHM was to improve quality of care in public health facilities. NHM contributed to this objective in a number of ways listed below:

- Adoption of the **Indian Public Health Standards**: This defined not only the service package that each facility must provide, but also specified the minimum inputs required to ensure quality of care, in terms of infrastructure, equipment, skilled human resources, and supplies. It was an assurance to the states for financing the gaps between available levels of these inputs and the levels needed to achieve the IPHS norms. A substantial increase in these inputs was driven by facility surveys to identify gaps and then planning and financing to close these gaps.

  As per RHS 2019, only 3.3% SC, 8.2% PHCs and 21.8% CHCs were functioning as per IPHS norms in rural areas. This highlights the need for intensive strengthening of the public health facilities throughout the country. The strengthening will need increased funding and active participation of the state governments.

- **National Quality Assurance Program** is an NHM initiative for providing quality health services at public health facilities. Launched in November 2013, the initiative is being implemented in all the States and UTs. National Quality Assurance Standards (NQAS)[77] have been developed keeping in the specific requirements for public health facilities as well as global best practices. NQAS are currently available for District Hospitals, CHCs, PHCs and Urban PHCs. Standards are primarily meant for providers to assess their own quality for improvement through pre-defined standards and to bring up their facilities for certification. NQAS are broadly arranged under 8 "Areas of Concern"– Service Provision, Patient Rights, Inputs, Support Services, Clinical Care, Infection Control, Quality Management and Outcomes. These standards are ISQua (International Society for Quality in Health Care) accredited and meet global benchmarks in terms of comprehensiveness, objectivity, evidence and rigour of development.

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[77]http://qi.nhsrcindia.org/national-quality-assurance-standards; last retrieved on November 30, 2019.

As on 31st March 2020, a total of 642 public health facilities have been NQAS certified. Year-wise progress is shown in Figure 3-31 (NHSRC, 2020).

Figure 3-31: Year-wise distribution of the NQAS Certified Facilities
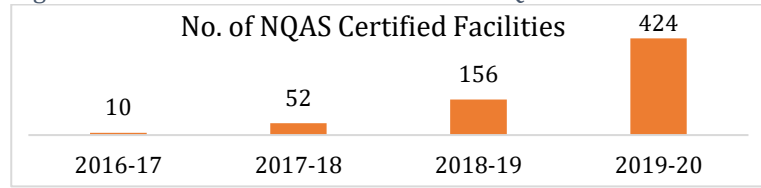
Source: Quality Darpan NHSRC, 2020

The highest number of NQAS certified public health facilities in the State of Telangana, (89) followed by Haryana (86), Tamil Nadu (73), Andhra Pradesh (72) and Gujarat (71). Kerala and Maharashtra have also attained more than 50 NQAS certifications. The States/UTs including Dadra and Nagar Haveli, Himachal Pradesh, Jharkhand and Nagaland each have one NQAS certified facilities. Arunachal Pradesh, Andaman and Nicobar Island, Chandigarh, Daman and Diu, Goa, Lakshadweep, Puducherry and Sikkim do not have any NQAS certified public health facilities and are under process of initiating the certification (NHSRC, 2020).

Figure 3-32: Faciltiy wise distribution of NQAS certified facilities
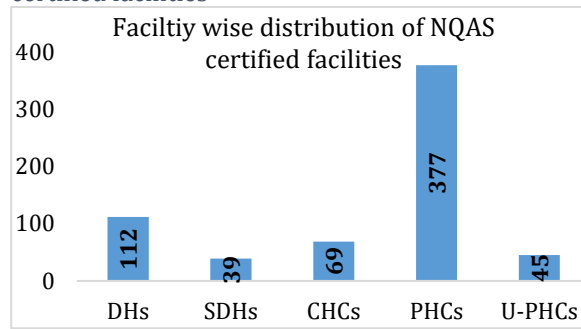
Source: Quality Darpan NHSRC, 2020

Figure 3-33: Zone wise distribution of NQAS certified facilities
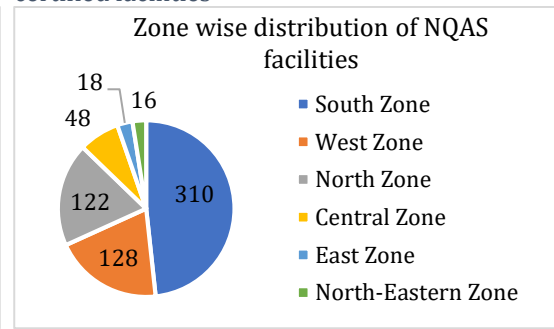
Source: Quality Darpan NHSRC, 2020

Only 14.81% DHs, 3.16% SDHs, 1.17% CHCs, 1.51% PHCs and 0.87% UPHCs are NQAS certified in the country.

- **LaQshya Program** (Labour Room Quality Improvement Initiative)[78] was launched in 2018, aiming at improving quality of care in labour room and maternity operation theatre. The Program aims to improve quality of care for pregnant women in labour room, maternity operation theatre and obstetrics Intensive Care Units (ICUs) and High Dependency Units (HDUs). The LaQshya program is being implemented at all Medical College Hospitals, District Hospitals and First Referral Units (FRUs), and Community Health Centers (CHCs) and will benefit every pregnant woman delivering in public health institutions and new-born.

'LaQshya' will reduce maternal and newborn morbidity and mortality, improve quality of care during delivery and immediate post-partum period and enhance satisfaction of beneficiaries and provide Respectful Maternity Care (RMC) to all pregnant women attending public health facilities.

The Program also aims at implementing 'fast-track' interventions for achieving tangible results within 18 months. Under the initiative, a multi-pronged strategy has been adopted such as infrastructure up-gradation, ensuring availability of essential equipment, providing adequate human resources, capacity building of health care workers and improving quality processes in the labour room.

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[78]https://pib.gov.in/newsite/PrintRelease.aspx?relid=177532; last retrieved on November 30, 2019.

Total 2,444 facilities are selected with 193 medical colleges for LaQshya. State orientation is complete in all States and Uts. Baseline assessment is complete in 2419 (99%) facilities (MoHFW, 2020).

Till March 2020, 543 Labour rooms and 491 Maternity Operation Theatres are State certified (MoHFW, 2020). 238 Labour rooms and 202 Maternity Operation Theatres are LaQshya certified at National Level (NHSRC, 2020).

Figure 3-34: LaQshya certified Labour Room and Maternity OT

LaQshya certified Labour Room and Maternity OT

	2018-19		2019-20		Total	
	Labour Room	Maternity OT	Labour Room	Maternity OT	Labour Room	Maternity OT
	22	16	216	186	238	202
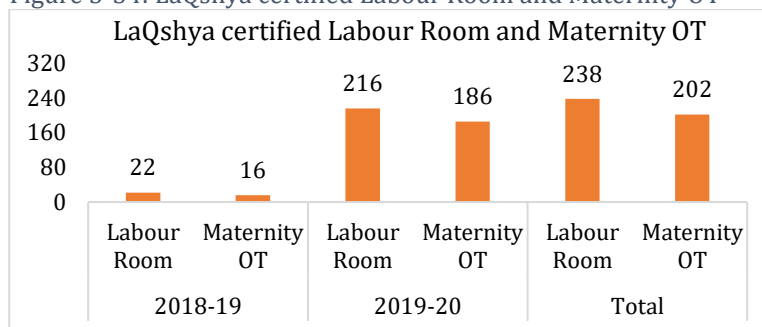
Source: Quality Darpan NHSRC, 2020

The highest number of LaQshya certified Labour Rooms are in the State of Maharashtra (55), followed by Gujarat (31) and Tamil Nadu (23). The States including Bihar, Karnataka, Rajasthan and Telangana have more than 10 LaQshya certified Labour Rooms each. The States/UTs including Meghalaya, Mizoram, Nagaland, Sikkim, West Bengal, Andaman and Nicobar Island, Daman and Diu, Jammu & Kashmir, Ladakh and Lakshadweep are yet to start the certifications under LaQshya (NHSRC, 2020).

The highest number of LaQshya certified Maternity OTs are in the State of Maharashtra (51), followed by Gujarat (29), Tamil Nadu (23) and Karnataka (11). The States/UTs of Meghalaya, Mizoram, Nagaland, Sikkim, Punjab, Tripura, West Bengal, Andaman and Nicobar Island, Dadra and Nagar Haveli, Daman and Diu, Jammu and Kashmir, Ladakh and Lakshadweep are yet to get their facilities certified under LaQshya (NHSRC, 2020).

- **Skill sets and Standard Treatment Protocols**: Skill sets and standard treatment protocols required for providing quality healthcare services and training packages that would provide these skill sets were designed. These include the Skilled Birth Attendance (SBA) training package for ANMs, the Navjat Shishu Suraksha Karyakram (NSSK) and the IMNCI packages for ANMs, the Home-Based New-born Care (HBNC) for ASHAs, and the Emergency Obstetric Care (EmOC) package for doctors. These training packages also introduced the standard treatment protocols in each of these areas (Ministry of Health and Family Welfare, 2019).

- Quality Improvement Programs: NRHM also supports initiatives for building quality management systems. These range from formation of quality assurance committees which use checklists and periodic monitoring visits to assess quality gaps, to more structured quality management systems leading to a third-party audit and quality certification- like NABH.

- The biomedical waste generated through the testing and other clinical procedures is segregated and disposed off as per Bio-Medical Waste Management Rules, 2016 of Ministry of Environment, Forest and Climate Change, Government of India.

Case Study 16 – The Biowat - Meghalaya

Introduction

The Biowat (Biomedical Waste Treatment) is a low-cost waste treating plant for biomedical liquid waste generated in a PHC at Nartiang, Meghalaya. Earlier, the biomedical liquid waste of the PHC was discharged unsafely in the nearby stream, against the BMW Rules 2016. The low-cost Biowat plant created at the PHC helped in preventing the local environment.

Implementation of the practice

Under this initiative bio-medical liquid waste is first segregated from the other wastage and it is treated with the following four stages before disposal:

Stage 1: Intermittent/demand operated slow sand filtration
The first stage addresses the colour, turbidity issues. The liquid waste is backwashed into the sand filters.

Stage 2: Chlorine Disinfection
Chlorine demand of the biowaste batch is determined and biomedical waste is dosed with bleaching powder.

Stage 3: Carbon Adsorption
At this stage addresses colour, odour, chemical, detergents, and other pollutants issues backwashed into the sand filters.

Stage 4: De-chlorination with Vitamin-C (ascorbic acid)
In the last stage free chlorine residuals are neutralized by treating the waste with Vitamin-C before discharge is backwashed into the sand filters.

Results of the practice

The BIOWAT has been constantly achieving discharge parameters of the effluent:
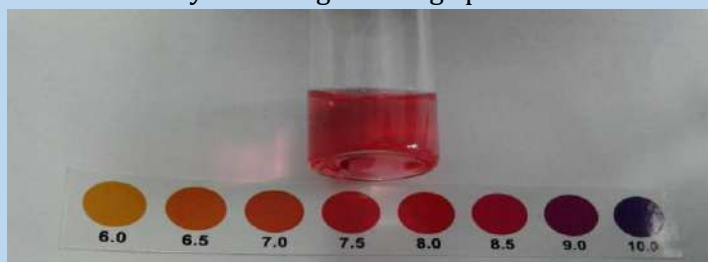
- Free Chlorine: 0mg/L
- pH: 7-7.5
- Fish survival: >96 hours: 100%
- Turbidity: <5 NTU

Other benefits:

- Simple operation and maintenance
- Efficient chlorine removal
- Zero consumption of energy for daily operation
- Low start-up and running cost

Lessons Learnt

The low cost plant with a set-up expense of INR 2.5 Lakh and annual maintenance cost INR 10,000 preserves the local environment from the hazardous biomedical wastage.

Conclusion

The low-cost and easy maintenance plant makes this initiative highly scalable across other PHC's in the country.

Further Readings:

https://cdn.s3waas.gov.in/s384f7e69969dea92a925508f7c1f9579a/uploads/2020/06/2020062434.pdf

Patient Satisfaction

1. Mera Aspataal

Mera Aspataal is an initiative by MoHFW launched in 2016 to capture patient feedback and improve the quality of services. It is a simple, intuitive, and multi-lingual ICT based system that captures patient feedback in a very short time on the services received. It uses a multi-channel approach of SMS, On-board diagnostics (OBD), Mobile App and Web Portal to collect feedback based on staff behaviour, cleanliness, cost of treatment, quality of treatment and other factors like waiting time, lack of amenities etc. The feedback system needs further improvements in terms of gathering more feedback details.

As of 26 June 2020, 5,406 health facilities have been integrated with Mera-Aspataal across 32 States/UTs with an annual growth rate of ~150% since 2016-17. The 5,406 facilities include 25 Central Government Institutions, 59 Govt. Medical College Hospitals, 19 Private Medical College

Figure 3-35: No. of facilities integrated with Mera-Aspataal
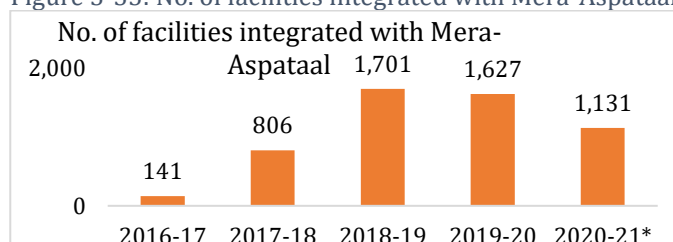
Source: Quality Darpan NHSRC, 2020

Hospital, 644 DHs, 236 SDHs, 737 CHCs, 516 U-PHCS, 2465 PHCs, 691 Private Hospitals and 12 other healthcare institutions. 86% of the total Central Government Hospitals and 85 % of the total District Hospitals are integrated with Mera-Aspataal (NHSRC, 2020).

As on 26th June 2020, a total of 7,01,20,865 valid visits have been recorded, out of which 55,08,947 (7.8%) patients have responded for feedback. Out of the patients responded, 42,02,327 (76.28%) reported that they were satisfied with the services provided in the health facility they visited, while the remaining 13,06,220 (23.71%) have reported that were not satisfied with the services provided (NHSRC, 2020).

2. Grievance Redressal System (GRS) and Health Helpline

Grievance Redressal System is an important mechanism to ensure delivery of entitled services and helps in identifying the gaps in health service delivery and thereby improving the quality of services. The features of GRS and health helpline are:
- Grievance redressal through help desks, call centre and web portal
- Simple and user-friendly, one-time, single window system to register grievances
- A system to track, investigate, resolve and document complaints
- Follow up and reporting mechanism
- Time-bound redressal of grievances
- Mechanism to give feedback to complainant
- Confidentiality of complainants' details
- Integrated Health Helpline offered through call centre and web portal

3. Patient Satisfaction Surveys

Patient Satisfaction Surveys are conducted periodically as per the requirements of quality assurance norms for health facilities. They help to know users' perception of the quality of services. The feedback is analyzed to know the services/ attributes of services with which the users are not satisfied. This is done for indoor as well as outdoor patients using a standardised questionnaire.

4. Mother and Child Tracking System (MCTS)

MCTS is an innovative web-based application developed to facilitate and monitor service delivery and to facilitate two-way communication between the service providers and beneficiaries (discussed in detail in section 3.2.8A). ANMs send regular alerts to service providers and beneficiaries about the services due and a user-friendly dashboard is available for health managers at various levels to monitor the delivery of services and ensure quality service delivery, micro birth planning and universal immunization. However, this monitoring Program was observed to suffer from problems related to lack of appropriate training, poor internet connectivity, and frequent power failures (Nagarajan, Tripathy, & Goel, 2016).

5. Rogi Kalyan Samiti (RKS)

Rogi Kalyan Samiti/Hospital Management Committee consists of members from local Panchayati Raj Institutions (PRIs), NGOs, local elected representatives and officials from Government sector who are responsible for proper functioning and management of the hospital / Community Health Centre/FRU. Their role includes maintenance of quality standards, operationalization of grievance redressal mechanism and identification of problems faced by patients.

Primary Analysis and Findings:

- 44%, 23% and 29% of the surveyed DHs, CHCs and PHCs respectively, regularly collected

patient feedback. 87%, 69% and 58% of the surveyed DHs, CHCs and PHCs respectively had a publicly displayed mechanism for complaints/grievance registration (EY Primary Analysis: Facility Survey, 2019). Actions on the complaints received are taken after reviewing them by the hospital management committees and the Rogi Kalyan Samitis (EY Primary Analysis: KIIs, 2019).

Figure 3-36: Patient Satisfaction reported during primary survey
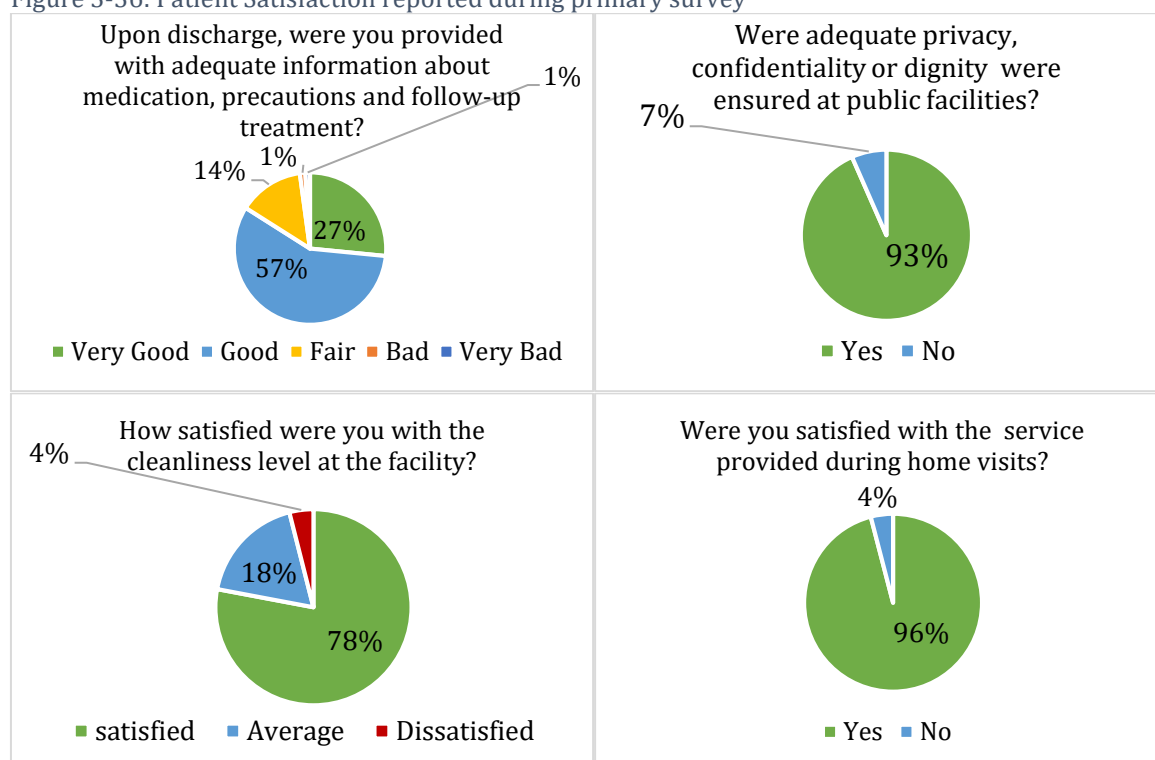
Source: EY Primary Analysis: Household Survey, 2019

- The quality of service delivered varied from 50% to 96% across the surveyed states. Beneficiaries from states like Rajasthan (96%), Telangana (93%) and Odisha (92%) were among the top three states. Other states which mentioned good quality of service, in more than 75% of the cases, included Maharashtra, Madhya Pradesh, Karnataka, West Bengal, Delhi and Himachal Pradesh

- According to 89% of respondents who visited the health facility, there was availability of drinking water facility at the health facility. Among the people who used the toilets at the health facility, 84% of them found that the toilets were clean.

- In rural areas, majority of the respondents said that the behaviour of Doctor/Nurse/Staff at the health facility was overall very good or good (61%) and the same was the case in urban areas, where the overall behaviour at the health facility was also very good or good (76%).

Overall, respondents reported satisfactory services in the public health facilities. But proportion of public health facilities with accreditation certificates by a standard quality assurance program (IPHS/NQAS/LaQshya/Kayakalp) remains low. Also, hospital infection surveillance and development and adherence to STPs is a concern in public health facilities.

iv. Human Resources-Infrastructure in Public Service Delivery

While ~95% positions for health workers (female) are filled, the specialists, medical officers and health workers (male) need further immediate attention (Figure 3-37).

Figure 3-37 : Status of Human resource in health

	Doctors at PHCS						**Health Worker Female/ANM at SCs & PHCs***				
	2015	**2016**	**2017**	**2018**	**2019**	**Trend**	**2015**	**2016**	**2017**	**2018**	**Trend**
Required	25,308	25,354	25,650	25,743	30,045		1,78,963	1,80,423	1,81,881	1,84,160	
Sanctioned	35,750	34,068	33,968	34,417	37,811		1,95,672	2,16,267	2,11,388	2,16,665	
In Postion	27,421	26,464	27,124	27,567	34,256		2,12,185	2,19,980	2,20,707	2,19,326	
Vacant	9,389	8,774	8,286	8,572	8,669		20,492	28,255	28,741	27,964	
Shortfall	3,002	3,244	3,027	3,673	2,351		9,326	9,568	10,112	10,907	
Shortfall %	11.86%	12.79%	11.80%	14.27%	7.82%		5.21%	5.30%	5.56%	5.92%	
	Total Specalists at CHCs						**Health Assistant Male at PHCs***				
	2015	**2016**	**2017**	**2018**	**2019**	**Trend**	**2015**	**2016**	**2017**	**2018**	**Trend**
Required	21,584	22,040	22,496	22,496	22,740		25,308	25,354	25,650	25,743	
Sanctioned	11,661	11,262	11,910	13,635	13,957		23,505	27,126	22,753	22,662	
In Postion	4,078	4,192	4,156	4,074	4,898		12,646	15,668	12,288	11,406	
Vacant	7,881	7,359	8,105	10,051	9,649		11,019	11,717	10,731	11,479	
Shortfall	17,525	17,854	18,347	18,422	18,100		15,513	14,472	15,592	16,981	
Shortfall %	81.19%	81.01%	81.56%	81.89%	79.60%		61.30%	57.08%	60.79%	65.96%	

*Reporting syntax changed for 'Health worker Female/ANM at SCs & PHCs' and 'Health Assistant Male at PHCs' after RHS 2018 and therefore trend could not be plotted for 2019
Source: Rural Health Statistics 2018, 2019

All India figures for vacancy (sanctioned/in position) and shortfall (required/in position) are the totals of State-wise vacancy and shortfall ignoring surplus in some States / UT.

Though there is an increasing trend in sanctioned and in-position resources, a significant shortfall still persists especially for specialists and medical officers. All India figures for Vacancy and Shortfall are the totals of State-wise Vacancy and Shortfall ignoring surplus in some States / UT.

For allopathic doctors at PHC, there is a shortfall of 7.82% of the total requirement. The current position of specialists' manpower at CHCs reveal that as on March 31, 2019, ~69% of the sanctioned posts of specialists at CHCs are vacant. Overall, there is a shortfall of 79.60% specialists at the CHCs as compared to the requirement for existing CHCs. The shortfall of specialists is significantly high in most of the States. As on March 31, 2018 the overall shortfall (which excludes the existing surplus in some of the States) in the posts of HW(F) / ANM is 5.9% of the total requirement as per the norm of one HW(F) / ANM per Sub Centre and PHC; in case of HW (M), there is a shortfall of 65.9% of the requirement. Under NHM there is a provision for engagement of HW(M) on contractual basis for backward districts

In the context of free drugs service initiative, 28.22% PHCs are without any pharmacist (RHS, 2019). Also, there is a 7.34%% shortfall of pharmacists at CHCs. There is also shortage of key manpower related to free diagnostics (RHS, 2019).

Figure 3-38 : Availability of Specialist in CHC
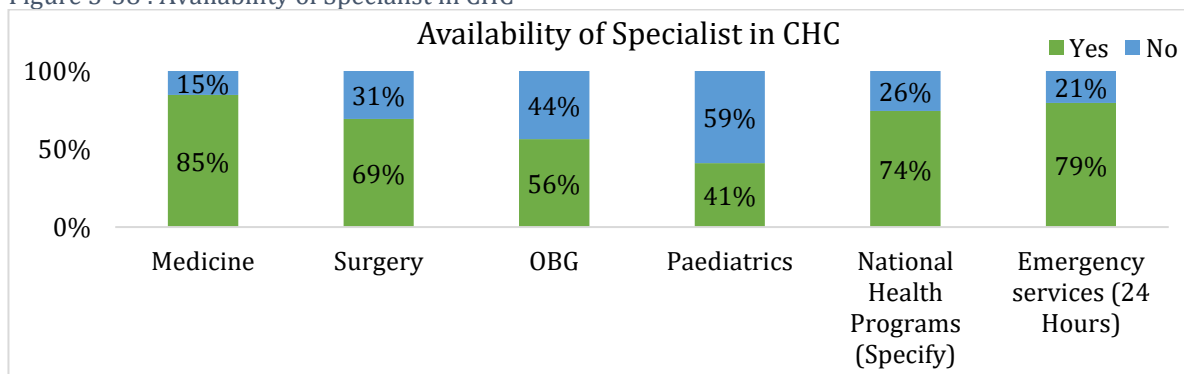
Source: EY Primary Analysis: Facility Survey,2019

Chapter 3: National Rural Health Mission

Irrational deployment of the workforce which resulted in inefficient use of existing human resources (11th CRM, 2018). For example, specialist doctors are often placed in administrative posts with limited or no opportunity to practice their speciality. In many instances, surgeons and gynecologists are posted at secondary care facilities where there is no anesthetist and vice-versa. The scarce availability of specialists is further depleted due to these reasons. Lack of integration between Health Directorate and National Health Mission Program Management Unit was observed in few states.

Providing additional training and support to allow service providers to work across vertical programs that require similar skills (e.g. Laboratory Technicians and Counsellors) has been introduced in only a few states. Many of these staff members do not have heavy caseloads but the silos of vertical national programs prevent them from working in other related areas, adding to further inefficiency within the system. This has also made it more difficult to implement salary rationalization for service providers.

A comprehensive and robust HR policy is missing in most states of the country. This has hampered the streamlining of workforce management for regular and contractual service providers. To ensure rational deployment and equitable distribution of workforce a need to HR policy is observed and recommended by CRM. There have been no substantive efforts to establish a Public Health Management Cadre in the states reviewed in the CRM.

Case Study 17 – Brazil Primary Health Care

Introduction

The main objective of the project is to build comprehensive primary health care across the country in a cost-effective approach. The comprehensive primary health care provided through Brazil's Family Health Strategy (FHS) was started in 1994 as a federal program to provide integrated primary care. Currently, it serves as basic health care for two-third of the population through Family Health Teams (FHT). The program also reduced avoidable hospitalizations to 45% in 15 years. The program aims to provide preventive and primary health services with increased accessibility to the wider population across the country.

Key Stakeholders
- Ministry of Health (Brazil)
- Family Health Teams (Doctors, Nurses and CHWs)
- Local Municipalities
- Citizens of Brazil

Implementation of the Practice

Family health teams (FHT) consisting of one general physician, one nurse, and about five to six Community Health Workers (CHW) are assigned a geographic area covering 3,000 to 4,000 people, with a maximum of 150 families per CHW.

Features of FHT:

1. **Trained and equipped community workers: CHW**s are full-time workers trained with 55 days of didactic training and 28 days of supervised training. The training enables CHWs to expand their role beyond maternal and child health. CHWs are equipped with mobile phones or tablet computers used to make house calls in their assigned area. They register all family members in a family with their demographic and health details. The tablet computers help to collect data electronically, enable remote diagnoses, and real-time communication with the clinic. Regardless of the need, every family will receive a minimum of one visit every month from their dedicated CHW. During CHW's investigation, if any illness symptoms are found, they are referred to doctors and nurses. CHW also help in clinic administering activities.

Training
‣Didactic training – 55 days
‣Supervised training – 28 days

Technology Enabled
‣CHW's equipped with mobile phones or tablet
‣Collect data electronically
‣Remote diagnoses
‣Real-time communication

Processes
‣Minimum of one visit every month per family
‣Referred to doctors and nurses
‣Clinic administering activities
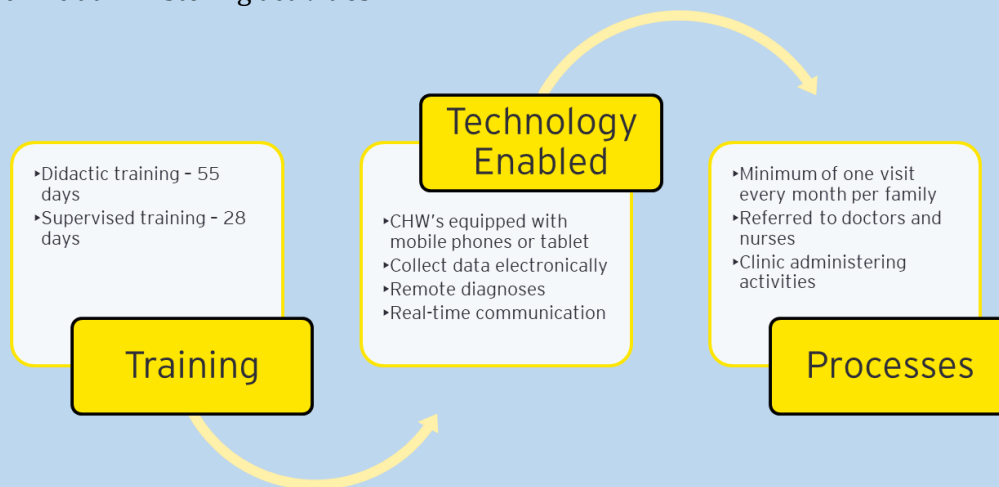
Image: CHW's Roles and Responsibility

2. **Empowered nurses for care delivery:** Nurses are empowered through the Nursing Care Operationalization (NCO) program to prescribe diagnostic tests and some medicines. Nurses coordinate with the CHWs to provide primary care to the community.

3. **Physician-led community-based primary care teams and Family medicine focus for capacity building of doctors:** In 2013, to overcome the shortage of **doctors**, the Brazilian government launched "Mais Médicos" or "More Doctors" program. The short-term strategy for the program was to import Cuban doctors to work for Brazil's FHT teams through a bi-lateral cooperation agreement with the long-term strategy of increasing the supply of doctors by expanding the medical training centres and residency base.

4. Also, **Family medicine (primary care) a specialty with a specially designed curriculum** followed by a National Communication Strategy was introduced to increase awareness on its importance.

5. **Comprehensive scope including NCD and cancer screening:** Comprehensive primary care at basic health unit (primary care center) including clinical triage, chronic disease management and screening uptake (cancer, NCDs) was instrumental. Auxiliary teams on hand were supporting the core FHT teams (e.g., psychologists, pharmacists, physiotherapists, dentists, social workers).

6. **Gatekeeping model & largest pay-for-performance primary care scheme:**
   - Under gatekeeping strategy, individuals mandated to register with FHTs
   - "Bolsa Familia" program for direct conditional cash transfer to help people avail primary care for children

- Primary Care Access and Quality (PMAQ) program, for improving the performance and quality of the FHTs.
  - Stringent quality audit to review facility conditions, performance on outcomes and consumer experience; quality score awarded basis:
    - Results from an indicator set derived from the external evaluation (70%)
    - Participation in the self-assessment activities (10%)
    - Performance on agreed-upon health indicators (10%)
    - Correct use of EHRs (10%)
  - Incentive payments basis three pay-for-performance tiers
  - Public reporting of FHT performance against the outcome indicators
- Robust primary care EHR to restructure and organize clinical information at the national level through computerization of all the primary care clinics

Results of the practice

The program reduced the avoidable hospitalisation by 45 % in 15 years. Increased immunization uptake up to 100%, reduction in mortality across age groups, as well as reduced fertility and improved school enrolment are the positive impacts of this project.

Avoidable hospitalizations per 10,000 inhabitants in Brazil
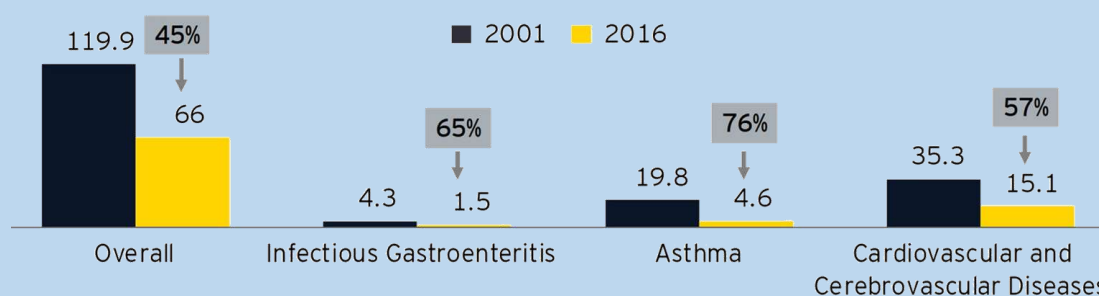
ACSC: Ambulatory Care Sensitive Conditions-widely accepted metric for measuring access and quality of primary healthcare

Lessons learnt

- The project worked well with lower income population. Expanding the program to middle and upper classes gave diminishing results because they have majorly relied on private health sector.
- Lack of electronic health record integration across primary and secondary health services. The health data collected during primary health care services are not accessible to secondary care and vice versa. Thus, the collected data is not utilized to its extent.

Conclusion

The project has resulted in better outcomes in reducing mortality and fertility rates, increased immunization. The program has also demonstrated robust progress, scaling up across the country in a sustainable and steady fashion. The program also evolved through the years by adapting technology and increased accessibility of primary health care services in a cost-effective approach.

Further Reading

https://apps.who.int/iris/bitstream/handle/10665/326084/WHO-HIS-SDS-2018.19-eng.pdf?sequence=1&isAllowed=y
https://www.commonwealthfund.org/sites/default/files/documents/___media_files_publications_case_study_2016_dec_1914_wadge_brazil_family_hlt_strategy_frugal_case_study_v2.pdf

Capacity Building of staff

Various pre-service and in-service training modules for different services and for different health professionals are created and conducted under NHM. A need to develop a mechanism to measure the output of various trainings conducted on the day-to-day working of the health professionals and the impact on performance of health indicators was identified (EY Primary Analysis: KIIs, 2019).

DH are increasingly being utilised for in-service and pre-service trainings. 141 DH in 14 states, are conducting DNB /CPS courses. Every DH has attached ANM school or GNM/B. Sc. Nursing schools/college. These are also learning centres for various allied health professional courses. 5 National skill labs and 104 State/District skill labs have been made operational in 24 states. Till date around 3,375 (1,238 in FY 2018-19) health personnel have been trained at National Skills lab and around 33,751 (7,750 in FY 2018-19) at State Skills lab from different cadre including Nursing tutors, Skills lab trainers, Professors, Medical officers, skills lab trainer etc.

Capacity building modules for public health professionals on subjects like contract monitoring, digital proficiency: data sanitation and validation, sensitisation etc. should be developed (EY Primary Analysis: KIIs, 2019).

Case Study 18- Labs for Life

Introduction

Labs for Life is a pilot partnership initiative of National AIDS Control Organization (NACO), Ministry of Health and Family Welfare (MoHFW) and U.S. Centers for Disease Control and Prevention (CDC) for improving the quality of laboratory services, building sustainable laboratory systems within the public health sector and strengthening country owned institutions. For phase 1, 20 laboratories have been selected across six states, and objectives were defined to improve the overall quality. After the implementation of this initiative, the overall quality score had increased significantly from baseline at the mid-term assessment of the laboratories.

Key Stakeholders
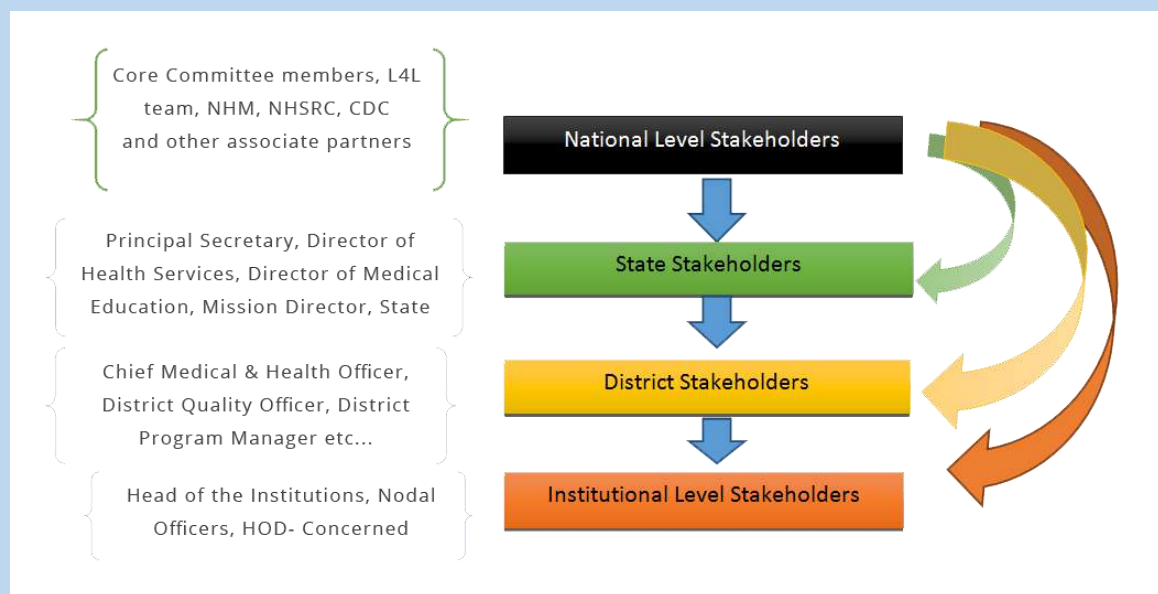
Implementation of the practice

The project was implemented in association with Christian Medical Association of India (CMAI). Initially, project governance committees were formed at National, State, District, and Institution level. At the National level, the core committee under the chairmanship of Additional Secretary, MoHFW, comprises of representatives from all the partners. The committee meets once in a quarter to monitor and develop strategies at the National level

A baseline assessment was conducted at all selected facilities to identify the gaps, challenges, and document best practices. The findings were circulated to all the states.

A comprehensive capacity building plan with central, district and facility wise training program was developed to improve the vital systematic areas including Facility Management and Safety, Sample Collection, Documentation, Equipment Management, Calibration and Controls, Testing Methodologies, Inventory Control, Staff Training Practices, Setting and Monitoring Quality Indicators and Usage of Information Technology.

The several activities like Training of Trainers (ToT), district level onsite training, handholding by Regional Quality Consultants, Periodic mentoring visits by the L4L central team, and online webinars on technical topics have been conducted. E-learning videos on numerous lab tests and laboratory quality management systems are created and available in labforlife.in.

Image: LabsforLife

| Baseline assessment at all selected facilities to identify gaps and challenges | Comprehensive capacity building plan with central, district and facility wise training | Executing the plan. Eg. Training of Trainers (ToT),, Periodic mentoring visits by the L4L central team, and online webinars on technical topics etc. |
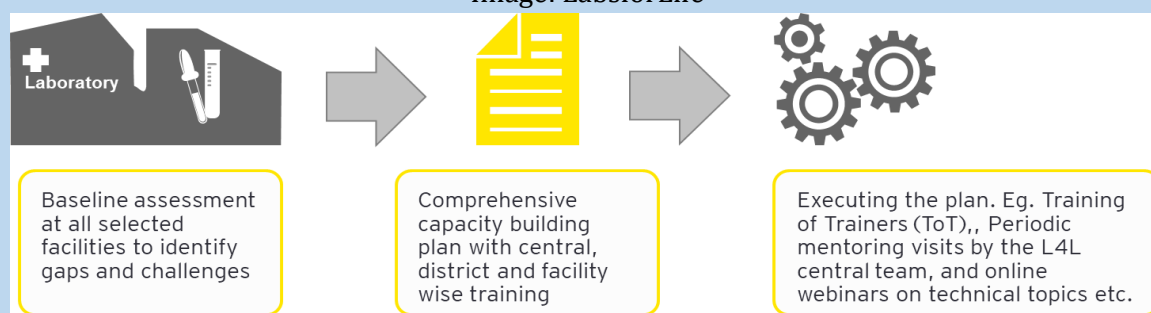
A district and state-level resource mapping were done to comprehend the currently available resources for diagnostics under various government institutions. This helps in tapping the available resources through referrals and improved linkage across various institution.

Apart from the interventions at systematic areas, a facility-specific interventions were also undertaken in terms of technical advice for lab renovations in several institutions, Bio-Medical Waste Management issues, etc. Laboratories quality management service was also made in compliance with ISO standards.

The phase II of the project is being implemented to improve public health laboratories in institutions housing ART Centers. 22 ART center-Hospitals across six districts in Maharashtra and Andhra Pradesh are selected.

Further, during the evaluation, it was identified that unlike the secondary healthcare system, tertiary healthcare lacks well defined standards for service provisioning in Medical Colleges. MCI defines the academic requirements only, and the standards like IPHS and NQUAS deals with tertiary care only. Thus, the responsibility of setting a benchmark of service provisioning lies with the institution only. Therefore, under this program, recommendations have been placed for empowering the Medical Colleges for service provisioning standards for their various laboratories.

Results of the practice

Mid-term assessment conducted at all facilities found noteworthy development in diagnostic capacities, improved quality of services, strengthened specimen referral mechanisms, and linkages between different levels. The overall Quality score increased expressively from 27.2% at baseline to 59.7%.

In District hospitals, a cross-sectoral improvement was observed. Improvement was maximum for Outcomes, Quality management, Inputs, Support services, Infection control, Clinical services, Patient rights and Service provision.
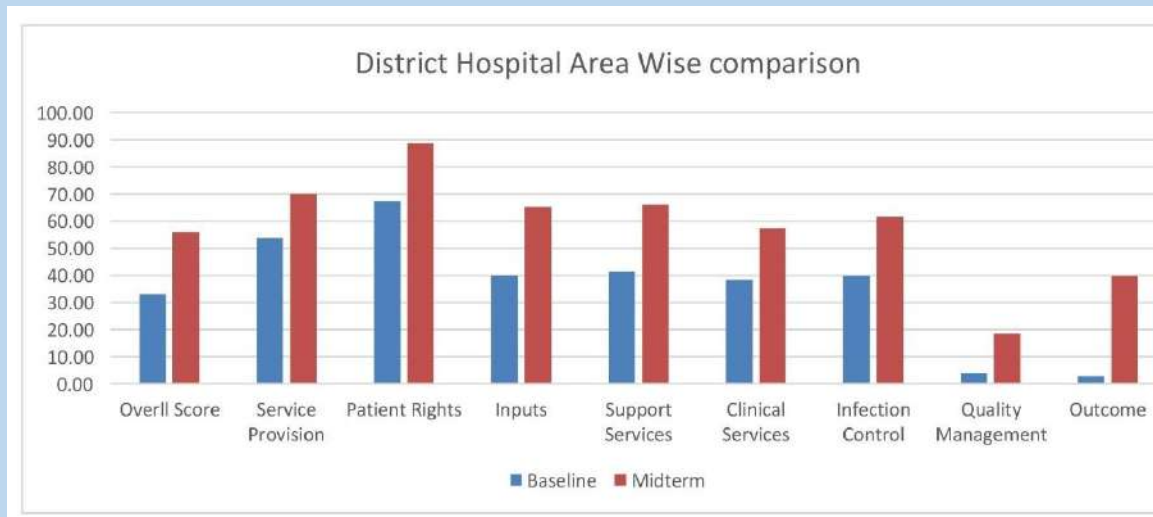
All medical colleges recorded an improvement compared to baseline scores. Improvement was more for certain elements viz. Specimen collection and handling, Biosafety, Staff management and availability, training and supervision, use of IT, and Communication. It was marginal to moderate for others i.e. Premises quality, Public health functions, Equipment availability and management, Budget and finances, Diagnostic capacities etc.
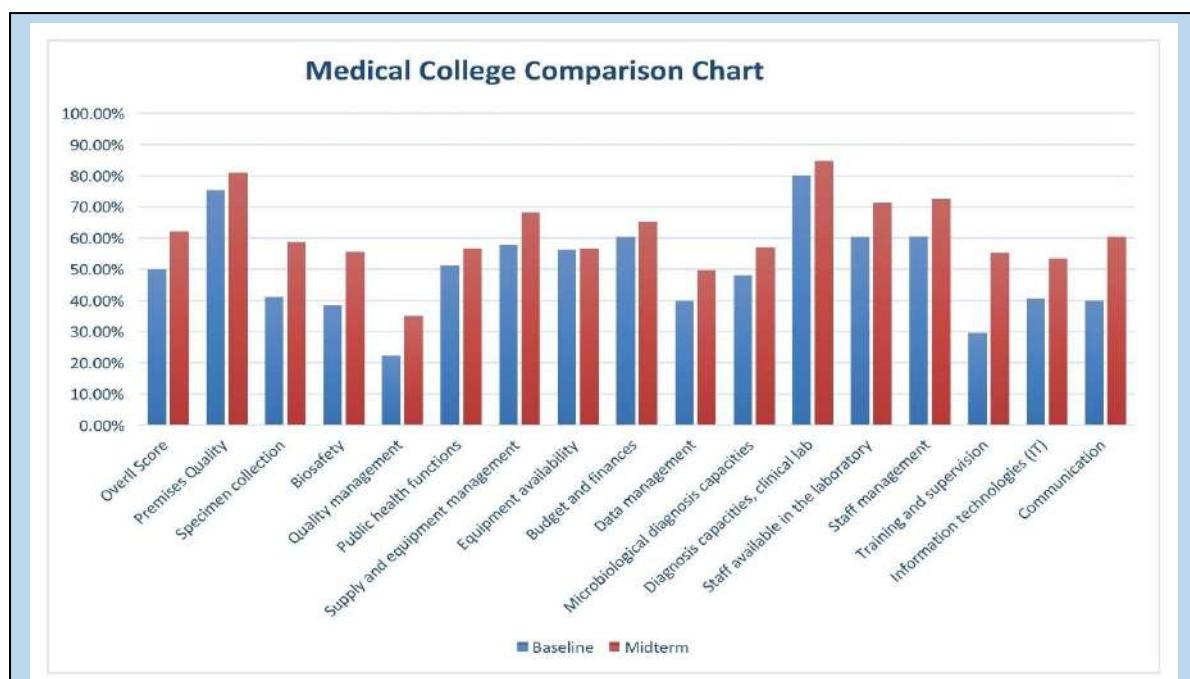
In view of promising outcomes from the early project activities, the objectives were changed from achieving improvement in lab services – in terms of capacity, quality and sustainability; to achieving accreditation for conformance to the ISO15189 standard for selected laboratories from among the L4L project participants. Nine labs have been selected for starting the accreditation process. Continuous Training and close mentoring support are being provided to these labs. This includes Internal Auditor training for identified laboratory Quality Managers, additional support through handholding to complete the QMS documentation, arranging mock internal audits through L4L. NQAS certification is also being encouraged for those facilities that are partially ready.

Lessons Learnt
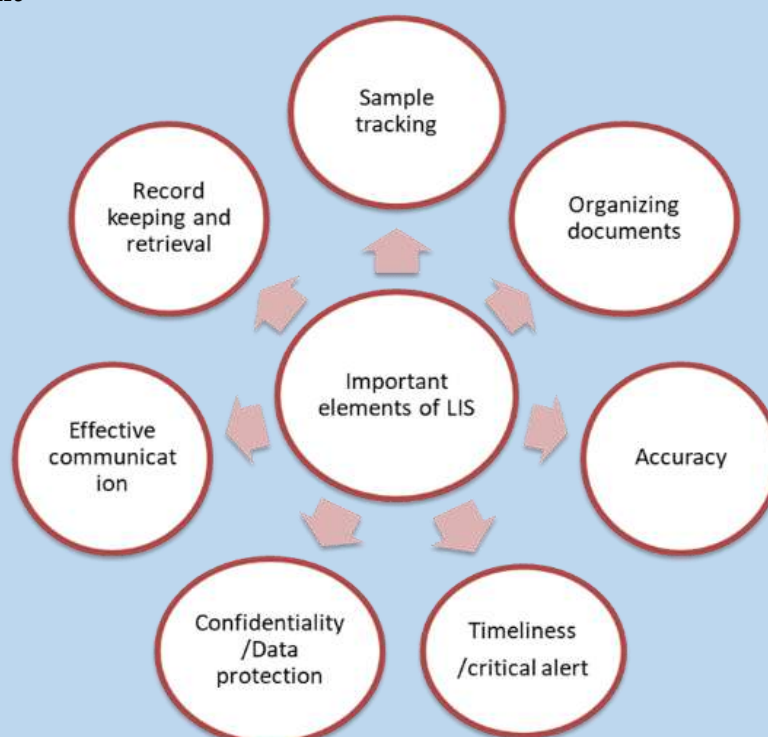
According to the midterm review report, though there is a significant improvement in many technical areas as compared to baseline information, it is apparent that many areas require more developmental actions such as:

- Responsiveness of institutions to training
- Lack of importance to leadership and staff motivation
- Requirements for guidelines and standards for tertiary care hospitals regarding the tests
- Resource needs and dedicated lab funds

The project has created a quality-assured diagnostics model at the district level, by integrating all levels of public health via a sample referral system that helps to utilize the available resources efficiently. The project also identifies the gaps from state level to facility level and bridges them with robust logistic and IT system for training and laboratory management – **Laboratory Information Management System.**

Conclusion

Taking forward the learning from Labs for Life, NHM has launched the LIFE initiative on 6th July 2017 for the holistic transformation of Laboratory services in public hospitals through a systematic approach of continual quality improvement. This would entail closing of structural gaps, capacity building for staff, optimizing the laboratory process and implementing a credible Quality Management System to meet prevalent National and International standards. As the tangible outcome of the efforts, targeted laboratories would achieve quality certification/accreditation against NQAS/NABL standards. The States should advocate the importance of establishing, implementing and maintaining QMS in public health laboratories and disseminating the knowledge and facilitating the process of generating awareness.

Further reading

http://naco.gov.in/sites/default/files/3Gap%20Analysis%20-Midterm%20Review%20National%20report%20Final.pdf
http://naco.gov.in/labs-life-l4l-project
http://labsforlife.in/Default.aspx

Chapter 3: National Rural Health Mission

Table 3-12: Output-Outcome Framework- Health System Strengthening

Health Systems Strengthening					
Output 🟠					
Output	Indicators	Target	Data	Source:	Status
Operationalization of FRUs by 50	Number of Operational FRUs	Increase by 50 from 31.03.2018	3,204 FRUs operational by March 2019 as compared to 3008 FRUs as till December 2017.	RHS 2019, NHM Quarterly MIS report Dec 2017	Met
Expanded basket of primary care services to be provided by Health and Wellness Centers (HWCs)	Operational Health and Wellness Centers	Cumulative Target- 40,000	As on July 01, 2020 total of 40,890 HWCs have been operational in the country, out of which 21,152 are SHC-HWC, 16,423 are PHC-HWC and 3,315 are UPHC-HWC.	AB-HWC online dashboard	Met
Implementation of IT system backed procurement management and logistics for provision of free drugs at the Public Health facilities	Number of States Implementing IT system backed Procurement management and logistics systems under Free Drugs Services Initiative	30 States/UTs by 2019-20	29 States / UTs have implemented IT system backed procurement management and logistics systems under Free Drugs Services Initiative.	Annual Report 2019-20	~Met
Implementation of NHM free diagnostic initiative in public health facilities	Number of States covered under Free Diagnostic initiatives	33 States/UTs	As on 1st November 2019, FDI Laboratory services have been implemented in 33 States/UTs (PPP mode in 11 States/UTs and In-house mode in 22 States/UTs); FDI CT Scan services have been implemented in 23 States/UTs (PPP mode in 13 States/UTs and In-house mode in 10 States/ UTs) and FDI Teleradiology services have been implemented in 10 States in PPP mode.	Annual Report 2019-20	Met
Dialysis sessions held under Free Dialysis services	% increase in number of Dialysis session in public health facility	10% increase	PMNDP has been implemented in total 34 States /UTS in 465 Districts in 798 Centres deploying 4727 machines. Total 5.39 lakh patient availed dialysis services and 54.1 lakhs Hemo-dialysis Sessions held- as on 31 October, 2019 which is a ~38% increase from the status as on 31st March 2019.	Annual Report 2019-20	Met

Increase number of PHCs meeting IPHS norms	Percentage of PHCs covered under IPHS norms	10% annual increase	8.2% of total PHCs functioning in rural areas (urban not included) are covered under IPHS norms (RHS 2019). RHS 2018 reported 11.85% PHCs functioning (rural + urban) covered under IPHS norms.	RHS 2019	Unmet

Outcomes ⬤					
Outcome	**Indicators**	**Target**	**Data**	**Source**	**Status**
Increase in utilization of Public Health facilities for OPD & IPD	Annual increase (in %) in OPD and IPD in Public Health Facilities	Increase by 10 %	From 2017-18 to 2018-19 OPD increased by 6.93%, while, IPD increased by 2.38% in Public Health Facilities. 27% increase in IPD and 26% increase in OPD from 2014-15 to 2019-20	HMIS	Unmet
Reduction in Out of Pocket Expenditure (OOPE) (proxy child-birth)	Reduction in Out of Pocket Expenditure (OOPE) (proxy child-birth)	Reduction by 5%	Reduction in Avg. medical expenditure per case of hospitalization for childbirth from 2014 to 2017-18 was 16.57% and 9.35% in rural and urban public health facilities respectively.	NSSO 75th Round, 2017-18	Latest data unavailable. as per trend the target is unlikely to be met.
NQAS certified public health facilities	Increase in annual footfalls (no. of OPD and IPD) in NQAS/ LaQshya certified public health facilities and FRUs.	10% increase in annual footfalls	Significant growth (more than 150%) from 2018-19 to 2019-20 observed for both NQAS and LaQshya certified facilities By 31.03.2020 NQAS: 643 LaQShya: 500	Quality Darpan NHSRC, 2020	Met
Reduction in MMR & IMR	Reduction in MMR & IMR		MMR in the country has declined to 113 (SRS 2016-18) from 122 (SRS 2015-17). IMR has declined from 34 per 1000 live births in 2017 to 32 per 1000 live births in 2018.	SRS	Met
Improved utilization of primary care services with focus on screening and management of NCDs	Number of total 30+ population screened for NCDs	1.5 Crore population screened for NCDs by 2019-20	Under Population Based Screening programme - around 4,09,67,244 Individuals were screened and under Opportunistic Screening activity - around 5,60,18,023 check-ups were done in DH and CHC NCD Clinics. (Data as on March 2020)	MoHFW	Met

Chapter 3: National Rural Health Mission

Key Findings:

- An increase in utilisation of public health facilities is observed in general. The IPD cases in urban has decreased over the years as dicussed in section 2.2.6. The utilisation of public health facilities in rural India was decreasing steadily before 2004. The declining rate was stabilised after the launch of NHM (NRHM in 2005). The percentage of total functional public health facilities operational as per IPHS norms remains to be very low. Though the focus on quality of infrastructure and services has increased, more strengthening is required in terms of implementing and ensuring quality norms in the facilities.

- Initiative of setting up of HWCs is appreciated by all stakeholders. As on July 01, 2020 total of 40,890 HWCs have been created in the country, out of which 21,152 are SHC-HWC, 16,423 are PHC-HWC and 3,315 are UPHC-HWC.

- Efforts towards comprehensive primary health care such as system strengthening initiatives like increased uptake and upgradation of FRUs, SNCUs and 24×7 facilities along with upgradation of HWCs can lead to sustainable positive impact.

- Significant proportion of respondents replied positively to quality and hygiene questions in spite of low penetration of IPHS and other standards.

- Under NHM, efforts are being taken to integrate Centres of Excellence (CoE) like AIIMS, PGI Chandigarh and JIPMER etc. For utilising their expertise in building the capacity of service providers at secondary and primary care levels.

- Knowledge hubs and teaching and training hubs are being created under NHM to support activities till DH level.

- NHM has been contributing in the States towards system capacity ramp up for handling emergency services. In any emergency/unforeseen situation, the States have been relying on NHM because of its flexibility which was also evident during COVID-19 times as detailed in Appendix 1.

B. Reproductive, Maternal, New-born Child plus Adolescent Health- RMNCH+A

RMNCH+A has been evaluated on peformance in respect to maternal care, child and newborn care, adolscent care and immunization program.

RMNCH+A component under NHM addresses the SDG and NHP-17 goals for maternal & infant mortality and immunization coverage. Mother and child health indicators have seen a steady improvement since the inception of NHM.

i. Maternal Care

As discussed in Chapter 2, health impact indicators like MMR, IMR, under-5 mortality rate, neonatal mortality rate and total fertlity rate have shown a continuous decline and can certainly be considered as successful outcomes of NHM's mother and child healthcare initiatives (Ministry of Health and Family Welfare, 2019).

Key Initiatives taken under Maternal Healthcare

- Building on the phenomenal progress of the JSY scheme, Government of India launched **JSSK** on June 01, 2011. JSSK entitles all pregnant women delivering in public health institutions to have absolutely free delivery, including caesarean section. The entitlements include free drugs, consumables, free diet during stay, free diagnostics and free blood transfusion, if

required. It also provides free transport from home to institution, between facilities in case of a referral and drop back home. The scheme has been expanded to cover complications during ante-natal and post-natal period and also sick infants up to 1 year of age. In 2018-19, 87% of pregnant women received free drugs, 99% free diagnostics, 60% free diet, 49% free home to facility transport while 27% received free drop back home after delivery (Ministry of Health and Family Welfare, 2019). Utilization of public health infrastructure by pregnant women has increased significantly as a result of JSY & JSSK. As many as 1.34 Crore women had institutional deliveries in Govt. facilities last year (2018-19) (Ministry of Health and Family Welfare, 2019).

- State of the art Maternal and Child Health Wings (MCH Wings) have been sanctioned at District Hospitals/District Women's Hospitals and other high caseload facilities at sub-district level, as integrated facilities for providing quality obstetric and neonatal care. 650 dedicated MCH Wings with more than 42,000 additional beds have been sanctioned. Total functional units are 244 and a total of 12,903 beds are functional as on 16th March 2020 (Ministry of Health and Family Welfare, 2020). Creation of MCH wings is reported as concrete step towards strengthening of health infrastructure to ensure better maternal and new-born care facilties (EY Primary Analysis: KIIs, 2019). Few States such as Uttar Pradesh have entered into public-private partnership mode for creation of MCH wings.

- Other initiatives introduced to improve the quality of maternal and child care; follow-up and continuity care, timely referral and action to reduce MMR and IMR (EY Primary Analysis: KIIs, 2019) are:

  o Institutionalization of **Maternal Death Reviews (MDR)** wherein 68% of estimated maternal deaths have been reported, 61% of which have been reviewed by the District MDR Committes;

  o **Comprehensive Abortion Care (CAC)** is provided after being identified as a critical element of reproductive healthcare as 8% of maternal deaths in India are attributed to unsafe abortion. 14,000 MOs have been trained in CAC trainings. **Capacity building** of medical health professionals and development and upgradation of **skill labs** is given importance;

  o **Dakshata program** was launched in 2015 in 7 states with an objective to improve quality of care at the time of birth, 16,400 healthcare providers have received Dakshata trainings and 743 health institutions have been saturated;

  o **Mother and Child Protection (MCP) Card** is being used as a monitoring tool for MCH and nutrition interventions;

  o **Mother and Child Tracking System (MCTS)** is being implemented to register and track every pregnant woman, neonate, infant for various immunisation, ANC, INC, PNC, FP services (Ministry of Health and Family Welfare, 2019); (Ministry of Health and Family Welfare, 2020). 17.47 Crore pregnant women and 14.90 crore children were registered in MCTS/RCH portal as on 6 November 2019 (Ministry of Health and Family Welfare, 2020).

To further accelerate the pace of decline in MMR following activities have been carried out: a) new operational guidelines for obstetric HDU & ICU have been prepared and disseminated to the States for screening of diagnosis & management of Gestational Diabetes Mellitus, Hypothyroidism during pregnancy, 259 Obstetric HDUs/ICUs have been approved; b) training of general surgeons for performing Caesarean Section; c) Calcium supplementation

during pregnancy and lactation; d) De-worming during pregnancy; e) Maternal Near Miss Review; f) Screening for Syphillis during pregnancy and Dakshata guidelines for strengthening intra-partum care; g) Guidance Note on use of uterotonics during labour; h) Guidance Note on prevention and management of Post-partum Hemorrhage; i) training manuals for facilitators and participants for the Daksh Skills Lab for RMNCH+A services are the latest guidelines released (Ministry of Health and Family Welfare, 2019). 1,184 Health personnel have been trained at National Skills lab and around 2,213 at State Skills lab from different cadre including Nursing tutors, Skills lab trainers, Professors, Medical officers, skills lab trainer etc (Ministry of Health and Family Welfare, 2020).

- **Surakshit Matritva Aashwasan (SUMAN)** is a unique initiative by the GOI that focuses on assured delivery of maternal and new-born health care services encompassing uniform and free of cost access to quality care services with zero tolerance for denial of services, management of complications, assured referral support and commitment for respecting a woman's dignity, feelings, choices and preferences during pregnancy and child birth. This was launched on October 10, 2019 (Ministry of Health and Family Welfare, 2019).

- **Midwifery Initiative**: GOI has taken a landmark policy decision to roll out midwifery services in the country in order to improve the quality of care and ensure respectful care to pregnant women and newborns. This initiative aims to create a cadre of nurse practitioners in midwifery who are skilled in accordance to competencies prescribed by the International Confederation of Midwives (ICM) and are knowledgeable and capable of providing compassionate women-centered, reproductive, maternal and newborn health care services (Ministry of Health and Family Welfare, 2019).

Janani Suraksha Yojana (JSY)

- Janani Suraksha Yojana (JSY) is a safe motherhood intervention under NHM. It is being implemented to reduce maternal and neonatal mortality by promoting institutional delivery among pregnant women. JSY is a Centrally Sponsored conditional cash transfer Scheme, which integrates cash assistance with delivery and post-delivery care. The scheme has identified Accredited Social Health Activists (ASHAs) as an effective link between the Government and pregnant women.

- JSY has been showing good results both in terms of number of mothers covered and expenditure incurred on the scheme. From a modest figure of 7.39 lakhs beneficiaries in 2005-06, the scheme currently provides benefit to more than one crore beneficiaries every year. Also, the expenditure of the scheme has increased from INR 38 crore in 2005-06 to INR 1835 crore in 2017-18. JSY is one of the important factors in increased utilization of public health facilities by the pregnant women seeking delivery care services (Ministry of Health and Family Welfare, 2019). As of September 2019, 48.21 Lakh beneficiaries have benefitted in the 2019 under JSY with an expenditure of INR 796.16 Crore (Ministry of Health and Family Welfare, 2020).

Figure 3-39: Year-wise physical and financial progress of JSY
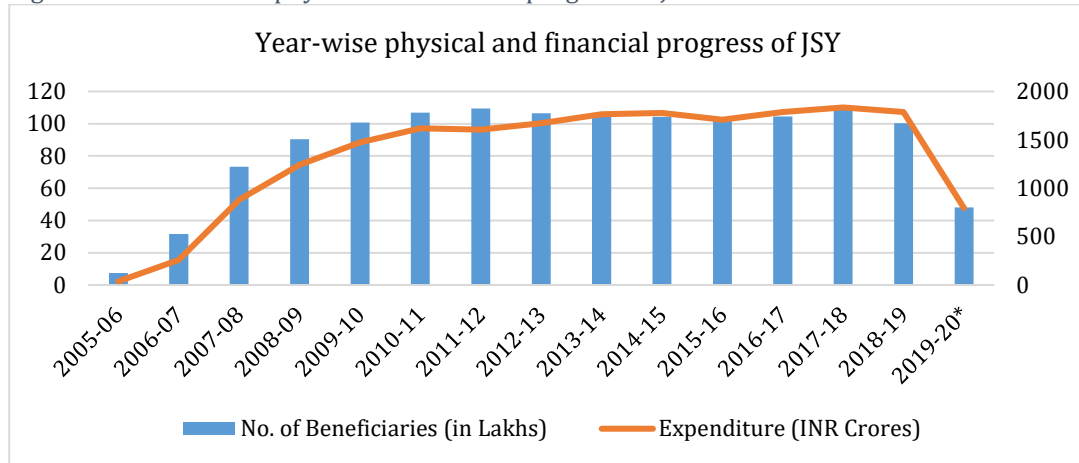
*2019-20 figures are for progress till September 2019
Source- Annual Report MoHFW 2019-20

- Under the scheme, the cash assistance is to be provided but the time period for the same varied from one beneficiary to the other. Majority of the respondents (42%) received the cash assistance within one month of the delivery. Cash assistance was received by the beneficiary at health facility, place of delivery, and in bank account etc. Majority (78%) of the respondents received the cash assistance directly in their bank account.

- 61% of the respondents were aware about JSY. Delhi, Telangana and Assam should focus on the awareness campaigns to make more people aware about JSY and benefit under the program. Overall, 62% of the eligible respondents confirmed receiving benefits under JSY (EY Primary Analysis Household Survey, 2019).

Figure 3-40: Awareness amongst respondents about JSY
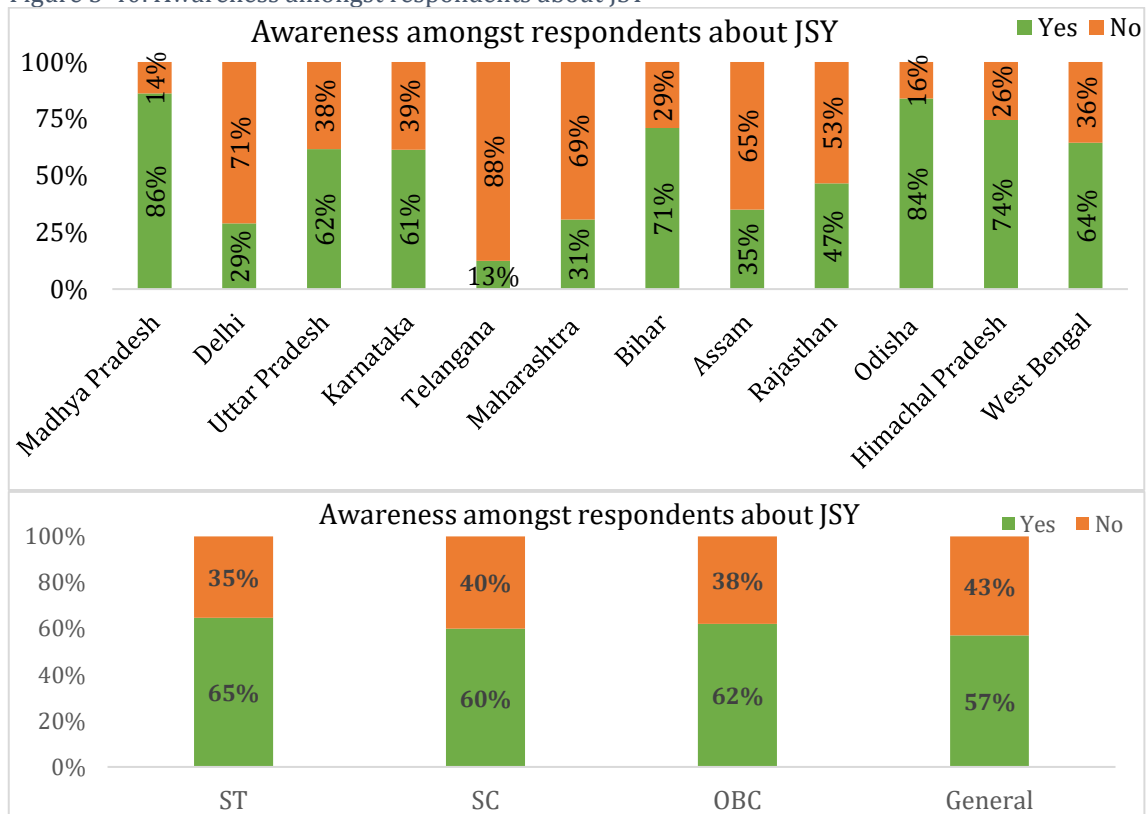
Source: EY Primary Analysis Household Survey, 2019

Chapter 3: National Rural Health Mission

Key findings for materal care:

As shown in Figure 3-41, the progress of NRHM towards mother and child healthcare services can be seen.

Figure 3-41 : Institutional deliveries and other RCH initiatives
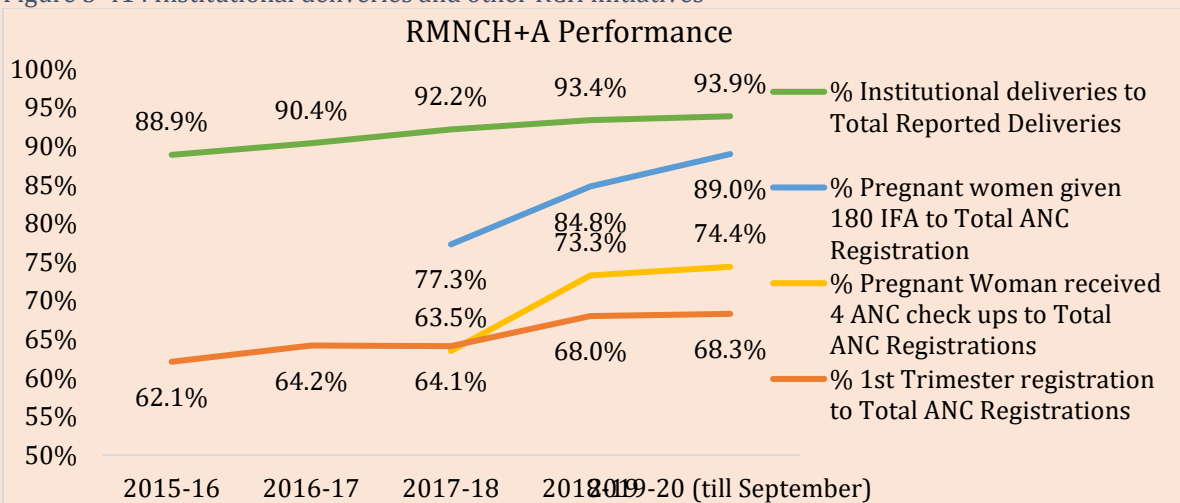
*The indicators were not recorded before 2017-1879
Source: HMIS data (till sept 2019)

- JSY program can be associated directly with increasing institutional deliveries;

- It is expected that for every 1000 live births increasing the coverage of Home Based Newborn Care (HBNC) could help avoid 9 sickness cases, 1 death and $613 in out-of-pocket expenditure (Nandi, et al., 2015).

- The sharp rise (from 2018 to 2019) in the percentage of women who received 4 ANC checkups can be attributed to PMSMA (Pradhan Mantri Surakshit Matritva Abhiyan) which was launched by GoI with the objective of providing quality ANC to every pregnant woman. It has been provisioned that private health professionals provide quality antenatal services specially for high risk pregnancies, one day in a month. The monthly one-day checkup is exclusive of the routine ANCs. There were 3 mandatory ANCs earlier which have now essentially increased to 4 minimum ANCs;

- It was observed that 89% respondents received the benefit under the Pradhan Mantri Surakshit Matritva Abhiyan (EY Primary Analysis Household Survey, 2019).

- Percentage of pregnancies registered in the first trimester out of total pregnancies registered for ANCs is provided in Figure 3-41. The trend shows a steady and significant growth. Early registration of pregnancies is a clear indication of increased public awareness in maternal and child healthcare;

- Early provision of healthcare is critical for pregnant women for improved survival and other positive health outcomes. In this respect, early registration of pregnant women for ANC

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[79] Instead of '% Pregnant Woman received 4 ANC check-ups to Total ANC Registration', '% Pregnant Woman received 3 ANC check-ups to Total ANC Registration' was recorded before 2017-18. 78.9% and 80.5% Pregnant Woman received 3 ANC check-ups in 2015-16 and 2016-17 respectively. Instead of '% Pregnant women given 180 IFA to Total ANC Registration', '% Pregnant women given 100 IFA to Total ANC Registration' was recorded before 2017-18. 80.1% and 81.3% Pregnant women were given 100 IFA tablets in 2015-16 and 2016-17 respectively.

check-ups has been improving since 2017-18 However, first trimester registration needs to be further improved beyond 68.3%;

- Under Weekly Iron Folic Acid Supplementation (WIFS), The Government has taken effective measures to improve nutritional outcomes of mother and children. Under this initiative, Iron and Folic Acid distribution to pregnant women has been improving since 2017-18;

- Despite remaining stagnant for 3 years, the rate of breastfeeding within 1 hour of birth has seen an increase in 2019-20. Also, health professionals working in the hospitals have a major role to play to further improve the initiation of breast feeding within 1 hour of birth from 89% to at least 94% which is the institutional delivery coverage in the country (new-borns available in hospitals for initiation of breast feeding)

- The proportion of new borns having low birth weight has deteriorated from 11.90% in 2017-18 to 13% in 2019-20

- Figure 3-42 shows that still ~6% deliveries are home deliveries in our country and a very small proportion (18.6%) of home deliveries have skilled attendant to assist. This points at the urgent need to expand the coverage of SBA for all pregnancies in the community by quality antenatal and natal coverage.

Figure 3-42: Skilled Birth Attendant Deliveries
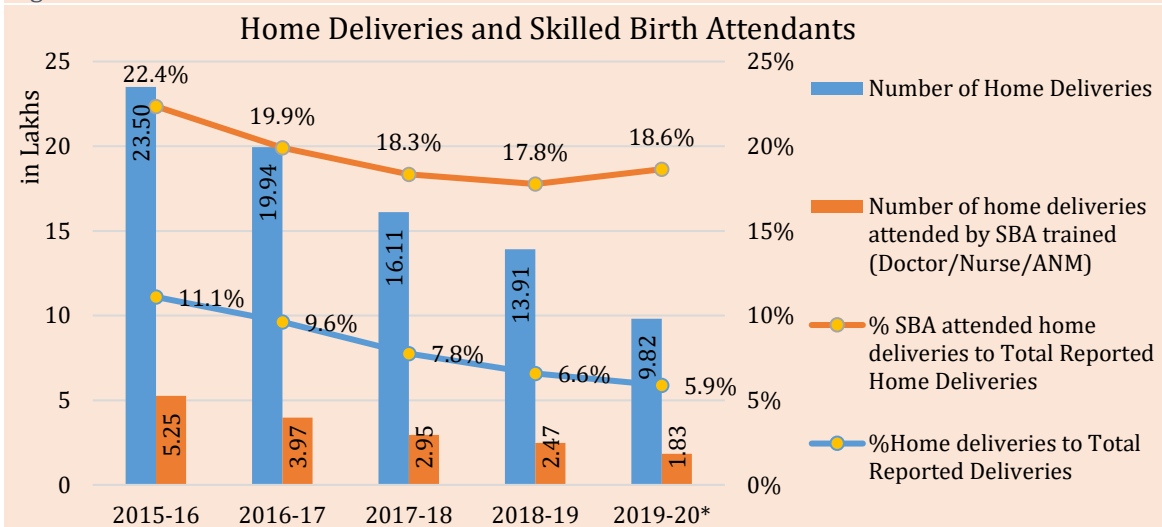
*2019-20 data reported till January 2020
Source: HMIS Data

- The home visits by skilled birth attendants (health workers qualified as SBA as per WHO definition) should be improved along with supportive supervision and capacity building of peripheral health staff of mid-level supervisors and medical officers to ensure that continuum of maternal care during the entire pregnancy cycle of women.

ii. Child and Newborn Care

Key initiatives under new born healthcare

- **India Newborn Action Plan (INAP)** launched in 2014 to attain the goal of "Single Digit Neonatal Mortality Rate" and "Single Digit Still-birth Rate" by 2030. INAP lays out a vision and a plan for India to end preventable newborn deaths, accelerate progress, and scale up high-impact yet cost effective interventions. INAP has a clear vision supported by goals, strategic intervention packages, priority actions, and a monitoring framework.

- **Navjat Shishu Suraksha Karyakram (NSSK)** is a program aimed to train health personnel in basic newborn care and resuscitation, has been launched to address care at birth issues i.e. Prevention of Hypothermia, Prevention of Infection, Early initiation of Breast feeding and Basic Newborn Resuscitation.

- **Home Based Newborn Care and Home Based Care of Young Children (HBNC/HBYC)** aims to reduce child mortality and morbidity and improve the nutrition status, growth and early childhood development of young children through structured, focused and effective home visits by ASHAs. More than 1 crore newborns were visited by ASHA each year. More than 1.2 Crore new-borns are visited by ASHA annually under Home Based New-born Care program (HBNC).

- Promotion of **Integrated Management of Neonatal and Childhood Illnesses (IMNCI)** for early diagnosis and case management of common ailments of children with special emphasis on pneumonia, diarrhea and malnutrition is being promoted for care of children at community as well as facility level. As of 2017, 505 districts and 5.96 lakh healthcare providers have been trained in IMNCI and 31,071 in facility based IMNCI training (Ministry of Health and Family Welfare, 2018).

- **Facility Based Newborn Care (FBNC):** There are at present 887 Special Newborn Care Units (SNCUs) at District Hospital / Medical College level, 2421 Newborn Stabilization Units at CHC/ FRU level, 20,336 Newborn Care Corners at Delivery Points established throughout the country and providing treatment to more than 10 lakhs sick and small babies annually (Ministry of Health and Family Welfare, 2020).

Case Study 19- Role of Facility Based Newborn Care (FBNC) in Reducing IMR at Jammu and Kashmir

Introduction

Due to the lack of infrastructure for FBNC's at secondary and primary health institutions, infant mortality was very high in Jammu and Kashmir. In addition to this, the steep terrain at J&K also makes the situation worse while transporting sick infants to tertiary care institutions located in cities. This initiative created high-quality Special New-born Care Units (SNCU) at the district level and reduced the J&K's IMR from 51 in 2007 to just 26 in 2015.

Key Stakeholders

- Ministry of Health and Family Welfare
- Government of J&K
- State Health Societies
- Government Medical Colleges
- Kalawati Saran Children Hospital, New Delhi
- National Collaborative Centre for FBNC, New Delhi

Implementation of the practice

- A gap assessment was conducted by the State Health Society and Government Medical Colleges to identify the gaps in the functioning of SNCUs, labour rooms & OTs in District Hospitals, and CHCs.
- 160 Medical Officers & Staff Nurses working in SNCUs at District Hospitals & NICUs in Govt. Medical Colleges were trained in Facility-Based New-born Care program for capacity building in managing sick neonates.

- 4 days training had been conducted by faculty from NCC for FBNC, New Delhi in different Government Medical Colleges of State followed by 14 days observership at Kalawati Saran Children Hospital, New Delhi.
- Labour rooms were also strengthened by providing infrastructure as per the MNH tool kit and special 21-day training for the staff deployed in the labour rooms.
- The National Collaborative Centre for FBNC, New Delhi, made regular visits for onsite mentoring and supportive supervision to improve new-born care in J&K.
- As per FBNC guidelines, protocol posters were prepared by State Health Society J&K and provided to all the Special New-born Care Units of the State.
- The state also used SNCU online portal of MoHFW to monitor the functionality of SNCUs & NICUs daily for improving accountability. Funds were also utilized on strengthening the tertiary care institution.

Interventions

- Strengthening of Labour Rooms & capacity building of SNs
- Rationalization of Staff
- Strengthening of NICUs in GMCs/SKIMS
- Monitoring through SNCU Portal
- Training of SNCU Staff at New Delhi & Onsite mentoring by NCC for FBNC team
- JSSK; SNCU & labour room Protocols
- Roping in of National Collaborative Centre (NCC) for FBNC , New Delhi
- High Level Monitoring Committee for reduction of IMR
- Involvement of GMCs in Gap assessment , FBNC trainings & supportive supervision

Results of the practice

- By adopting the practice, the functioning of SNCUs and labour rooms at the district level had improved significantly, leading to a drastic decrease in the IMR, NMR, and ENMR with a record 8-point decrease of IMR in one year from 34 to 26 (SRS 2015).
- The referral of sick infants from peripheral health institutions to district hospitals had increased, and referral to tertiary care institutions had significantly decreased.

Lessons Learnt

Along with the infrastructural and skill enhancement, this initiative had frequent monitoring and accountability checks. Firm administrative actions were also required to get good results.

Conclusion

The initiative proved that with proper guidelines and administration, it is possible to provide quality health care services at all geographical areas, including difficult terrain. With continued efforts, mentoring and supportive supervision of FBNC Units, this initiative aims to achieve SDGs as well.

Further reading

https://cdn.s3waas.gov.in/s384f7e69969dea92a925508f7c1f9579a/uploads/2020/06/2020062434.pdf

https://cdn.s3waas.gov.in/s384f7e69969dea92a925508f7c1f9579a/uploads/2020/06/2020062434.pdf

- 650 dedicated MCH Wings with more than 42,000 additional beds have been sanctioned. Total functional units are 244 and a total of 12,903 beds are functional as of March 2020.

- 1,075 Nutritional Rehabilitation Centres are functional and providing care to more than 1.8 Lakh Severe Acute Malnourished Children annually (Ministry of Health and Family Welfare, 2020). The undernutrition level has reduced from 42.5% in 2005-06 to 35.8% in 2015-16.

- Under Intensified Diarrhoea Control Fortnight (IDCF) program, more than 40 Crore ORS packets have been distributed to Under 5 Children since 2014-15. ORS use rate has also increased from 26.0% in 2005-06 to 50.6% in 2015-16. During IDCF 2019 round (May-June, 2019) more than 10 Crone under-5 children were visited by ASHAs and given ORS packets (Ministry of Health anf Family Welfare, 2020).

- The Biannual Deworming day is celebrated all over the country since 2015 and more than 180 Crore Albendazole tablets have been given to 1-19 years of Children during National Deworming Day (NDD) program till now. A total of 25 Crore (tentatively) children received Deworming tablet (Albendazole) during August 2019 NDD Round (Ministry of Health and Family Welfare, 2020).

Case Study 20 - Kangaroo Care Project – Uttar Pradesh

Introduction

Kangaroo care is a method of holding a baby with the skin to skin contact. KMC is an WHO recognized concept originated from Columbia. KMC care lessens the risk of premature babies. Universally this care prevented the death of 4,50,000 new-borns and 60,000 new-born deaths in UP alone.

Implementation of the practice

- The UP-Kangaroo Mother Care Project was implemented by UP Health department in 2016 in collaboration with Community Empowerment Lab. By 2018, it was rolled out to 13 CHCs of four districts and 42 District Women Hospitals.

- KMC is an innovative method that increases survival chances for underdeveloped, underweight and pre-mature new-borns. It is a simple technique, where the mother holds her new-born to her chest (>20 hours a day) and breastfeeds it. This skin on skin contact and the nutritive qualities of mother's milk, together, have proven to relax hyperventilation, bring down hypothermia (increase body temperature) and keep the child away from infections.

- In this initiative, Kangaroo Care lounges have been created under Special Neonatal Care

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- Units. The Kangaroo Care Lounges is a comfortable arrangement with large rooms where caregivers (usually mothers) can recline themselves by placing the baby over their chest and cover their body with linen to facilitate heat transfer.
- Key strategies attributing to the success of project:
  - Awareness of KMC has been created through an innovative hug program
  - Beautifully designed KMC lounges to maximize the comfort of the mother during a prolonged stay
  - CSR partnership has been made for essential supplies for KMC which includes cap, mittens, blankets, diapers, etc.
- Trained health workers provided IEC (information, education and communication) on KMC during the antenatal period along with essential new-born care messages. These messages were reinforced during the postnatal period.

Results of the practice

- According to WHO, kangaroo mother care is a safe and effective alternative to conventional neonatal care, especially in under-resourced settings, and may reduce morbidity and mortality in Low Birth Weight (LBW) infants as well as increase breastfeeding.
- This project avoided 60,000 new-born deaths in UP alone.

Lessons Learnt

This project shows that simple skin to skin contact care can improve the medical conditions of the babies and reduces the risks without any medications or machines. This method cuts the cost of incubators and reduces the need for repeated hospitalisation.

Conclusion

The simplicity of the project is the biggest strength for scaling the project. Awareness creation and acceptability is the biggest challenge in this initiative. Different approaches to increase awareness must be designed by analysing the cultural and social background of the community for the success of the project.

Further reading

https://www.who.int/elena/titles/kangaroo_care_infants/en/#:~:text=Evidence%20suggests%20that%20kangaroo%20mother,as%20well%20as%20increase%20breastfeeding.
https://nhm.gov.in/images/pdf/in-focus/MP/Day-1/Coffeetable_Book.pdf
https://my.clevelandclinic.org/health/treatments/12578-kangaroo-care

Chapter 3: National Rural Health Mission

Key findings for child and newborn care:

- As per latest Sample Registration System, 2017 Report; the U5MR in India is 37/1000 live births and IMR is 33/1000 live births. This translates into an estimated 9.6 lakh under-5 child deaths annually. The U5MR has declined at a faster pace in the period 2008-2017, registering a compound annual decline of 4.4% per year, compared to 3.3% compound annual decline observed over 1990-2007.

- Four States together contribute to 56% of all child deaths in the country, namely-Uttar Pradesh (2.45 lakh), Bihar (1.2 lakh), Madhya Pradesh (1.0 lakh) and Rajasthan (0.75 lakh).

- About 46% of under-five deaths take place within the first 7 days of birth, 62% within first one month of birth.

Figure 3-43: Causes of Neonatal Deaths in India
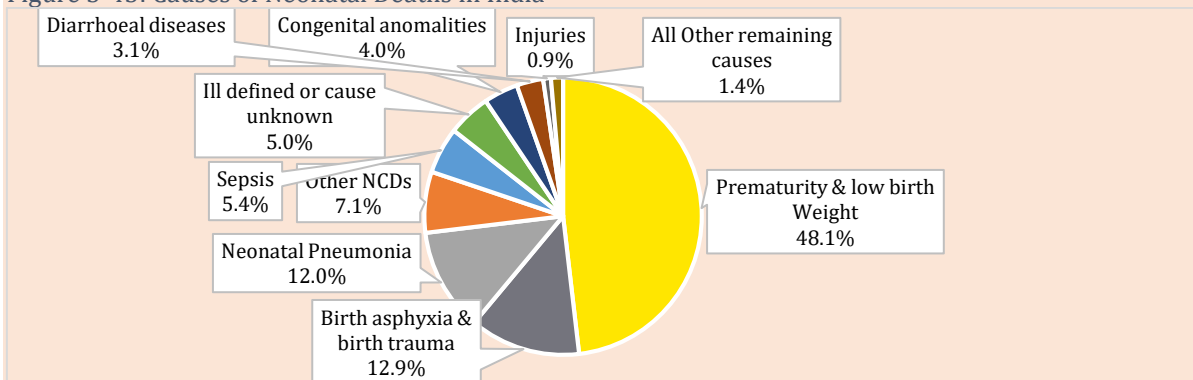
Source: MoHFW Annual Report 2019-20

- The New-born Mortality Rate in India is 23/1000 live births (SRS 2016) which translates into approximately 5.9 lakh deaths, annually. New-born deaths contribute to 61% of the Under-5 deaths in the country. The major causes of new-born deaths in India is prematurity & low birth weight (48%) as shown in Figure 3-43.

Figure 3-44: Diseases and Defects at birth screened under RBSK
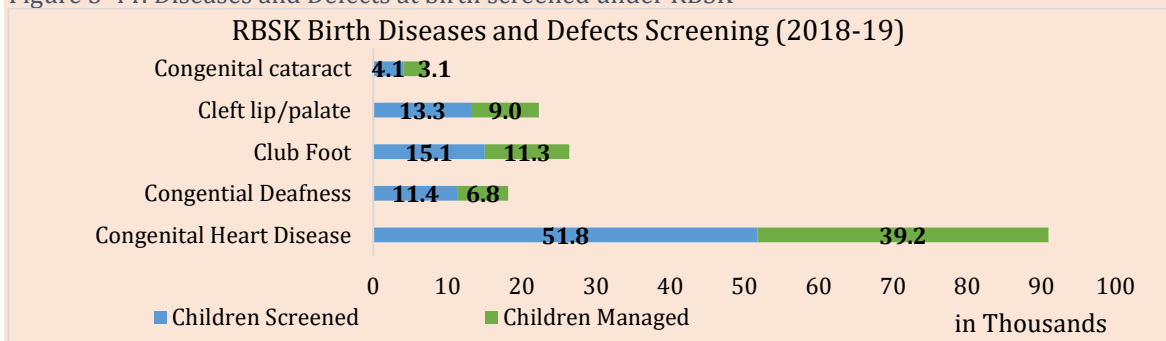
Source- MoHFW Annual Report 2018-19

- Child health screening and early intervention services are provided with an aim to improve the overall quality of life of children through early detection of birth Defects, Diseases, Deficiencies, Development Delays (4 Ds) and reduce out of pocket expenditure for the families.

- In 2018-19, 19.3 crore children were screened under RBSK, of which 5.63 crore were in 0-3year age group and 1.35 crore children had some problem in 4 Ds- Defects at birth, Deficiencies, Diseases, Development delays including disability, 53 lakh children received treatment at tertiary level.

- Under Rashtriya Bal Swasthya Karyakaram, more than 11,500 mobile health teams are working at block levels and nearly 254 DEIC are functional.

iii. Adolescent Care

In order to ensure holistic development of adolescent population, the MoHFW launched Rashtriya Kishor Swasthya Karyakram (RKSK) in January 2014 to reach out to 253 million adolescents; male and female, rural and urban, married and unmarried, in and out-of-school.

The interventions under RKSK can be broadly grouped as:

a. Community based interventions:

i. Under the Peer Education (PE) Program as on September, 2019, 2.69 lakh Peer Educators have been selected of which 70% lakh have been trained. Across the States, 53,949 Adolescent Health Days (AHD) were celebrated during the FY 2018-19 and 15,845 Adolescent Health Days (AHD) were celebrated till Sepetmber 2019 in FY 2019-20 (Ministry of Health and Family Welfare, 2020). .

ii. Under the Weekly Iron Folic Acid Supplementation (WIFS) Program during the FY 2018-19, 4.17 Crore beneficiaries (3.59 Crore in-school adolescents and 58 Lakh out of school adolescent girls) were covered under WIFS program which was carried out every month (Ministry of Health and Family Welfare, 2019). 33.8% of in-school beneficiaries and 21% of out- of-school beneficiaries were covered under WIFS program every month up to September 2019 (Ministry of Health anf Family Welfare, 2020).

Under the Scheme for Promotion of Menstrual Hygiene among Adolescent Girls in Rural India INR 4,254 lakh have been allocated to 16 States in ROP 2018-19 and INR 6,461 lakhs have been allocated to 14 States in 2019-20 for decentralized procurement of sanitary napkins under Menstrual Hygiene Scheme (MHS). The program has been rolled out in 9 States/ UTs and in 6 States/ UTs the procurement of sanitary napkins is under process (Ministry of Health and Family Welfare, 2019).

27% of the households reported that the elgible members received guidance for managing the menstrual cycle (EY Primary Analysis: Household Analysis, 2019). Across different social groups the percentage of households where guidance regarding menstrual cycle was received was STs: 29%, SC: 27%, and OBCs: 24%(EY Primary Analysis: Household Analysis, 2019). In case of Uttar Pradesh, Rajasthan, Himachal Pradesh and West Bengal, the responses were comparatively better, and the government should focus in the states/UTs like Delhi, Telangana and Assam.

Figure 3-45: Guidance for managing menstrual cycle across different states
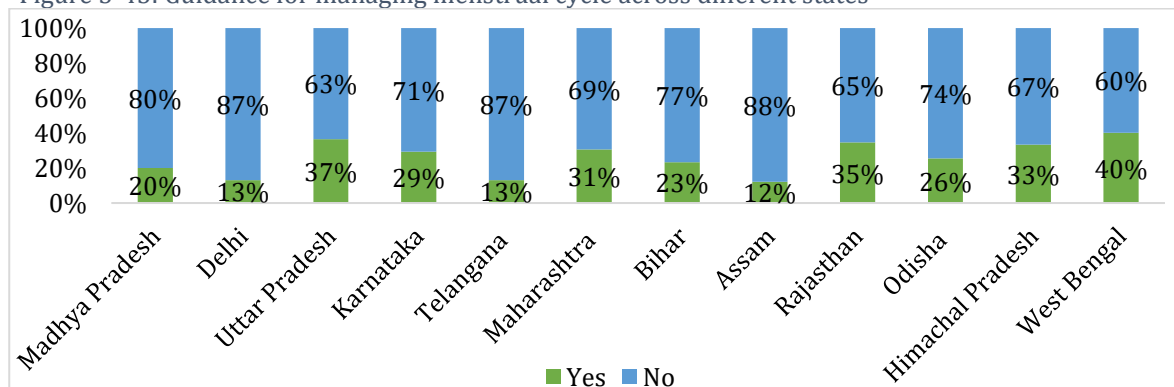
Source: EY Primary Analysis Household Survey 2019

b. Facility based interventions:

Adolescent Friendly Health Clinics (AFHC): Total 7917 AFHCs have been established across the country. 24.96 lakh adolescents availed counselling and clinical services from AFHCs up

to September 2019 for FY 2019-20.70.71 lakh adolescents availed counselling and clinical services from AFHCs during FY 2018-19 (Ministry of Health anf Family Welfare, 2020); (Ministry of Health and Family Welfare, 2019).

c. School based interventions: School based health promotion activities have been incorporated as a part of the Health and Wellness component of the Ayushman Bharat Program of the Government of India. With finalization of the training curriculum, the program will be implemented in 200 districts across the country (Ministry of Health and Family Welfare, 2020).

iv. Universal Immunization Program (UIP)

- UIP targets around 2.9 crore pregnant women and 2.67 crore new-born annually. More than 1.2 crore immunization sessions are conducted annually. It is one of the most cost-effective public health interventions and largely responsible for reduction of vaccine preventable Under-5 mortality rate (Ministry of Health and Family Welfare, 2019).

- As per the National Family Health Survey 2015-16 (NFHS-4), 62% children between the age of 12-23 months were fully immunized. As per the report of Integrated Child Health and Immunization Survey (INCHIS), the first 2 phases of Mission Indradhanush resulted in 6.7% increase in full immunization coverage in a year. This increase was more in rural areas (7.9%) as compared to urban areas (3.1%), shifting the program focus towards urban areas.

- Mission Indradhanush has completed six phases (from April 2015 to December 2018) covering 554 districts wherein:
  - o 3.39 crore children were reached
  - o 81.79 lakh children fully immunized
  - o 87.18 lakh pregnant women immunized

- India has maintained polio-free status as no wild polio virus case has been reported for more than 6 years after last case reported on January 13, 2011.

- Upon querying about the immunisation being received for the child by the health workforce, 87% of the responses were positive. States like MP, Bihar, Assam, Odisha, Himachal and West Bengal showed more than 90% of the positive response while the government need to focus in Delhi, Telangana and Rajasthan (EY Primary Analysis Household Survey 2019). Among the social groups of SCs, STs and OBCs, the OBCs were just little behind the national average of the result of primary survey (EY Primary Analysis Household Survey 2019).

Figure 3-46: Immunisation received by the health worker
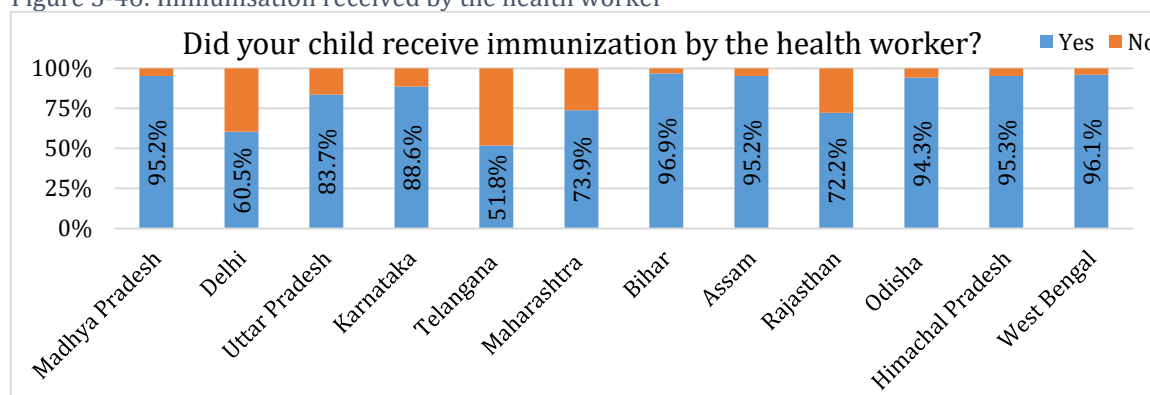
Source: EY Primary Analysis: Household Survey, 2019

Figure 3-47: State-wise Immunization 2018-19

% Child fully Immunized to estimation given by State/UTs (2018-19)

Below 65%
65-75%
76-85%
86-95%
More than 95%
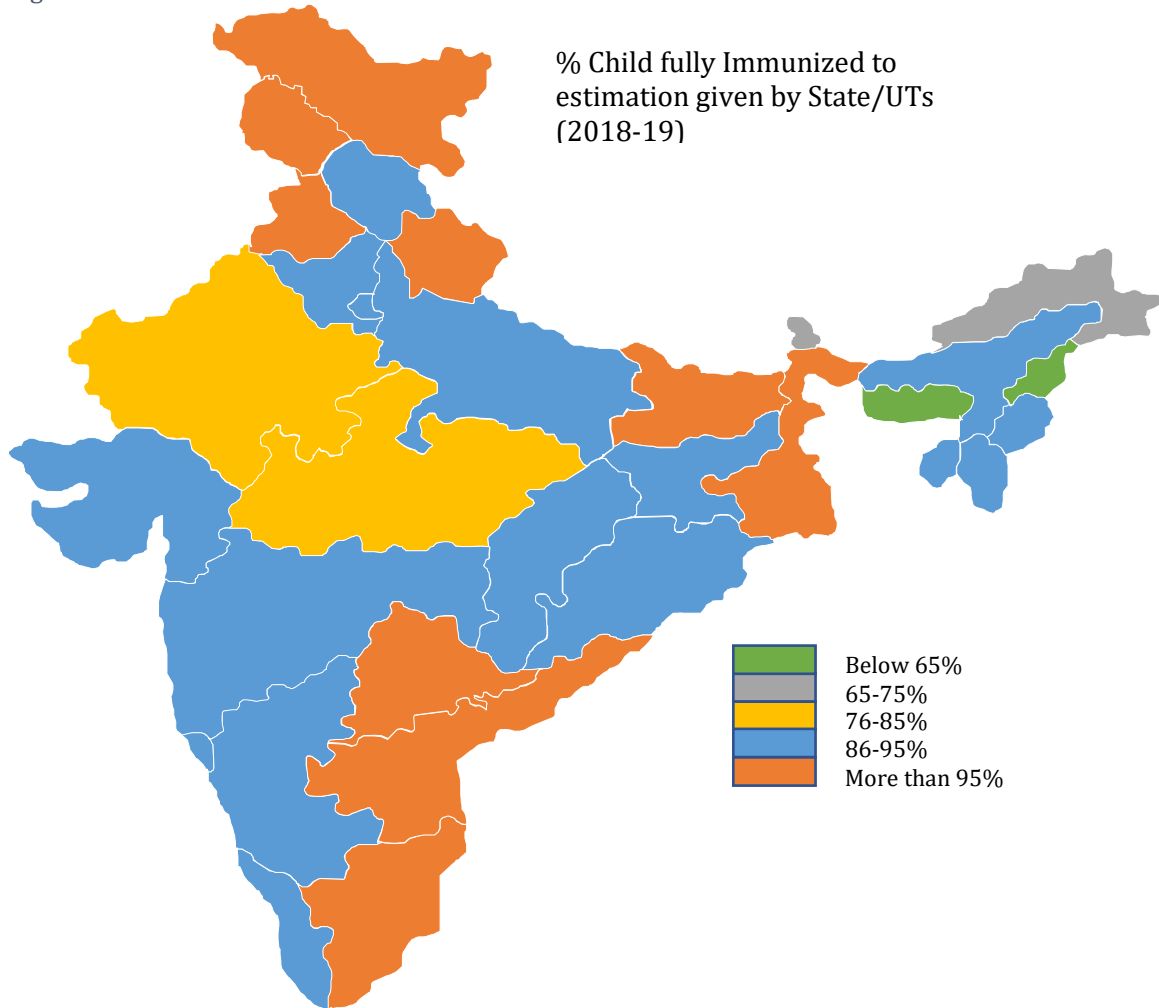
Source: HMIS-State-wise Immunization from 2016-17 to 2018-19

Key initiatives under infant and child care besides immunisation are:

- **Promotion of Infant and Young Child feeding practices (IYCF)** and **Mother's Absolute Affection (MAA):** Program to promote breastfeeding and infant feeding practices by building the capacity of frontline health workers and comprehensive IEC campaign.

- In MP, Telangana and Himachal Pradesh more than 90% households reported registration of their children at Anganwadi centres while Delhi reported the lowest (42%)

Figure 3-48: Child registered at Anganwadi centres
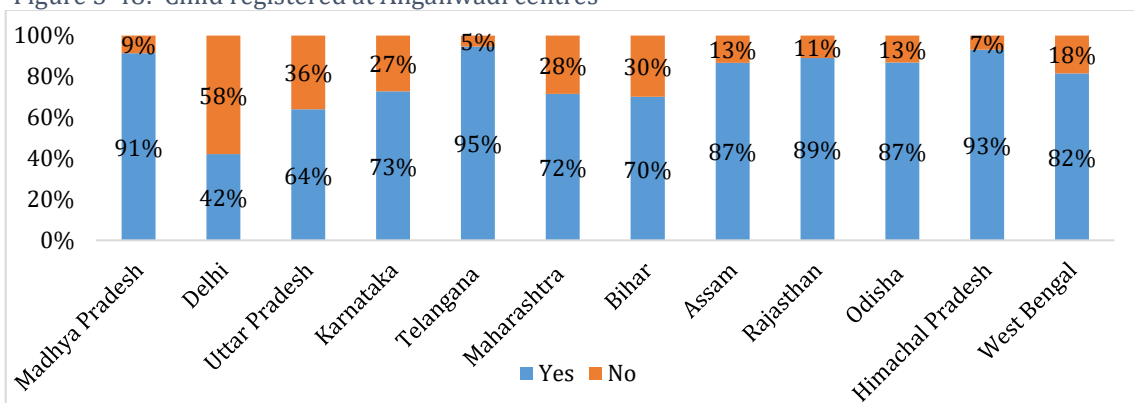
Source: EY Primary Analysis: Household Survey, 2019

Figure 3-49:Number of NRCs
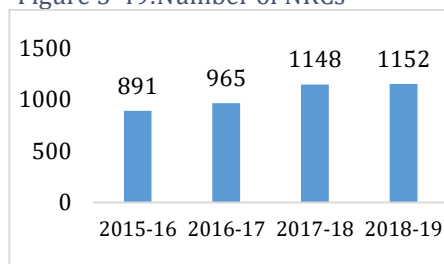
Source: MoHFW, Annual Reports

- **Establishment of Nutritional Rehabilitation Centres (NRCs)**: NRCs have been set up at facility level to provide medical and nutritional care to Severe Acute Malnourished (SAM) children under 5 years of age who have medical complications. In addition, the mothers are also imparted skills on child-care and feeding practices so that the child continues to receive adequate care at home (Ministry of Health and Family Welfare, 2020).

- **Anaemia Mukt Bharat (AMB)**: To address anaemia, National Iron Plus Initiative (NIPI) has been launched which includes provision of supervised bi-weekly Iron Folic Acid (IFA) supplementation by ASHA for all under-five children, weekly IFA supplementation for 5-10 years old children and annual/biannual de-worming. The operational guidelines for the same were released by Hon'ble Prime Minister on April 14, 2018 in Chhattisgarh. The strategy focuses on testing & treatment of anaemia in school going adolescents & pregnant women using newer technologies, establishing institutional mechanisms for advanced research in anaemia, and a comprehensive communication strategy (Ministry of Health and Family Welfare, 2020).

- Regarding the IFA tablets, the respondents gave positive feedback mainly. And it was observed that 75% of the respondents received the IFA Tablets (EY Primary Analysis Household Survey 2019).

- **National De-worming Day (NDD):** NDD is being observed annually on February 10, recognising worm infestation as an important cause of anaemia, targeting all children (1-19 years). A total of 44.54 crore de-worming tablets (Albendazole) were distributed to children aged 1-19 years during the National Deworming Day 2018-19 (August 2018 and February 2019).

- **Village Health and Nutrition Days (VHNDs)** are another nutrition related intervention for imparting nutritional counselling to mothers and to improve child care practices. In many states, ANMs plan for VHNDs, along with vaccines and logistics required, through a tablet-based application named ANMOL (Ministry of Health and Family Welfare, 2018). 11.19 crore village and health nutrition days have been held under NHM so far (Ministry of Health and Family Welfare, 2020).

Table 3-13: Output-Outcome Framework- RCH Flexipool

Reproductive, Maternal, New-born Child plus Adolescent Health- RMNCH+A					
Outputs 🟢					
Output	Indicators	Target	Data Status	Source	Status
Increase in number of Pregnant women who received 4 ANCs	% of pregnant women who received 4 ANCs out of total ANCs registered.	2% increase from 2018-19	AS per HMIS % of pregnant women who received 4 ANCs out of total ANCs registered. in 2019-20 (till Jan) was 79.7% and in 2018-19 was 73.5%	HMIS	Met

Increase per year in SBA deliveries	% of SBA (Skilled Birth Attendant) deliveries to total ANCs registered	1% increase from Previous year	As per HMIS % of SBA deliveries (Home + institutional) to total ANCs registered increased by 0.8% from 69.4% in 2018-19 to 70.18% in 2019-20.	HMIS	~Met
Full Immunization Coverage (FIC)	Increase in Full Immunization Coverage to 90%	Increase in Full Immunization Coverage to 90%	As per NFHS-4 (2015-16) 62% children (age of 12-23 months) were fully immunized.		Latest data not reported.
Increase in modern method contraceptive prevalence rate (mCPR)	Use of Modern methods of contraception	0.5% increase from baseline (baseline: mCPR = 47.8 as per NFHS 4)	As per NFHS-4 47.8% of married women age 15–49 years used modern methods of contraception while it was 48.5% in NFHS-3.		Latest data not reported.

Outcomes ●					
Outcome	**Indicators**	**Target**	**Data Status**	**Source**	**Status**
Reduction of MMR	Maternal Mortality Ratio (MMR)	Reduction of MMR to 110 by 2018-19	113 per 1,00,000 live births (2016-18)	SRS, 2020	SRS MMR Bulletin, 2020 gives data for 2016-18.
Reduction of Under Five Mortality Rate	Under Five Mortality Rate (U5MR)	Under Five Mortality Rate: 36 by 2018	36 per 1,000 live births (2018)	SRS Report-2018, 2020	Met
Reduction in Total Fertility Rate to 2.1 by 2020	Total Fertility Rate (TFR)	Reduction in Total Fertility Rate to 2.2 by 2018-19	2.2 births per woman (2018)	SRS Report-2018, 2020	Met

C. Strengthening of State Drug Regulatory System

A significant y-o-y increase in the budget allocations for strengthening of drug regulatory system has been observed. The component of strengthening of drug regulatory system which was initially under the budget head of NRHM has been identified as a separate budget head in the budget for 2019-20.

The scheme for strengthening of State Drugs Regulatory System for a period of two years upto 2019- 20 at a cost of INR 412 crores has been approved. The Scheme for strengthening includes setting up of 7 new drugs/ medical devices/cosmetics testing Central labs and 8 Mini labs at Airports and Seaports for assuring the safety, efficacy and quality of drugs, cosmetics and medical devices (Ministry of Health and Family Welfare, 2019).

Chapter 3: National Rural Health Mission

Figure 3-50: Strengthening of State Drug Regulatory System- Budget Allocation and Expenditure-
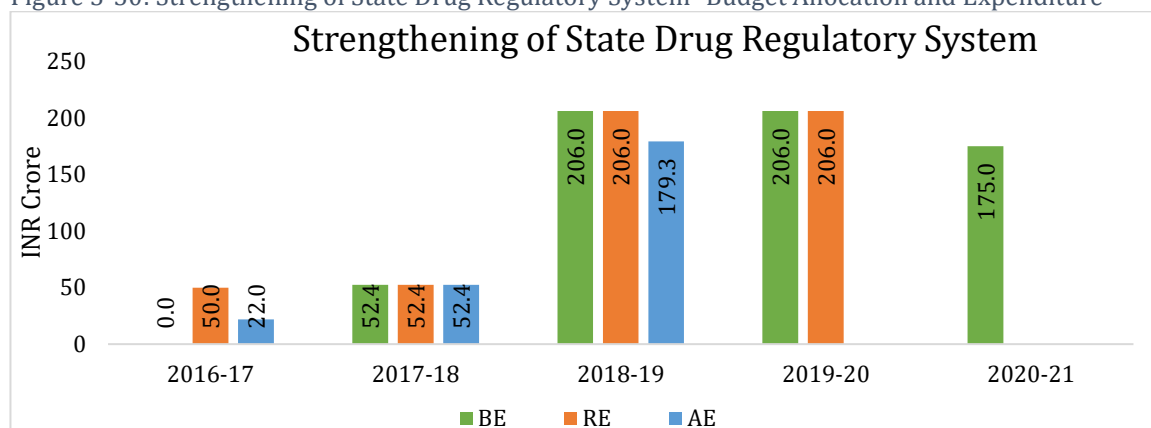
Source: Demand Nos. 42 & 43, Ministry of Health and Family Welfare, Union Budget 2019-20, 2018-19, 2017-18, 2016-17

A significant y-o-y increase in the budget allocations for strengthening of drug regulatory system has been observed. From the pattern of utilization of budget of various states and specifically of its State Drug Regulatory Authority and Drug Testing Labs, it was found that most States were unable to utilize their budget received from the centre or the states, due to lack of legislation and administrative approval by the States (National Institute of Health and Family Welfare, 2020). This has caused lack of development of infrastructural facilities and hampered the functioning of drug regulation in most states (National Institute of Health and Family Welfare, 2020).

The state of drug testing and the state of physical infrastructure of drug laboratories in India requires immediate attention. The Central Drugs Standard Control Organization (CDSCO) operates 8 laboratories (6 for drugs, 1 for vaccines and 1 for DNA and diagnostic kits), with a combined capacity to process 8,000 samples per annum (National Institute of Health and Family Welfare, 2020). All the central laboratories are NABL accredited. State-level laboratories vary greatly in terms of both quality and capacity. Number of testing facilities are limited (usually of HVAC and micro-biological are unavailable) (National Institute of Health and Family Welfare, 2020). The unavailability of qualified laboratory personnel in state drug laboratories has negatively affected the testing of samples. A shortage of HR in drug laboratories is a common complaint across States (National Institute of Health and Family Welfare, 2020). There are huge backlogs in samples and the samples often expire before they can be tested. Lack of infrastructure, specifically laboratories, digital databases, e-licensing and transport, are highlighted to be the key areas where increased focus, investment and expansion of facilities are required (Chowdhury et. al. 2015).

Drug Testing

- The number of samples tested on an average per month varies from 250 in Punjab, 350 in Andhra Pradesh to 1400 in Gujarat (National Institute of Health and Family Welfare, 2020).
- Out of all the drug samples tested only about 3.5 to 5 % samples fail the test and proved to be of 'Sub-Standard' or 'Not of Standard Quality'. Most of the samples failing tests were sourced from private sources (National Institute of Health and Family Welfare, 2020).

E-governance

- A portal www.cdscomdonline.gov.in has been launched for filing of applications of medical devices, their processing and tracking.

- SUGAM - a portal for submission and processing of applications for grant of permissions for marketing of New Drugs, Fixed Dose Combination New Drugs, Subsequent New Drugs, Vaccines, Recombinant Drugs, etc. has been developed.
- SUGAMLABS - a portal digitizing functionalities of seven laboratories under CDCSO has been developed to enable timely testing of drugs and maintain integrity & traceability of samples.
- Websites in several states remain un-updated and largely information is maintained in offline mode (National Institute of Health and Family Welfare, 2020).

Ease of Doing Business

- The requirement of No Objection Certificate (NOC) with respect to shipping bills from the port offices of CDSCO for the export consignments to any country has been removed.
- The power to issue NOC with respect to unapproved drugs for export has been delegated to States/UTs by CDSCO.
- Public Relation Office set up in 2018 acts as a single window for grievance redressal of stakeholders.

Intelligence Cell

- Set up in 2018, Intelligence Cell helps collect and collate information on suspected illegal activities. Total 141 raids were conducted across the country, of which 8 were in the area of FDCs, 4 in the area of New Drugs, 32 in the area of Cosmetics and 45 raids in the area of Medical Devices.

Quality

- It is mandatory for the applicants to submit evidence of stability, safety of excipients, etc. to the State Licensing Authority before grant of product manufacturing license.
- Submission of performance evaluation report by the manufacturer in case of in-vitro diagnostic medical devices is mandatory.
- 14 Steroids have been included under Schedule H to prevent their abuse/misuse.

Regulation of Cosmetics and Blood Banks

- Separate set of comprehensive rules have been published for cosmetics and draft notifications have been issued for amendment of Rules for Blood Banks.

Table 3-14: Output-Outcome Indicator- Strengthening of State Drug Regulatory System

Strengthening of State Drug Regulatory System					
Outputs					
Output	Indicator	Target	Data	Source	Status
Number of samples to be tested to increase	Number of drug samples to be tested	1,00,000			Not Available
Outcomes					
Outcome	Indicator	Target	Data	Source	Status
Increase in samples tested and better compliance with the Regulatory Mechanism so as to improve the Safety, efficacy and quality of drugs available to the patients.	Increase in sample tested and better compliance with the Regulatory Mechanism so as to improve the Safety, efficacy and quality of drugs available to the patients.	-			Not Available

Chapter 3: National Rural Health Mission

Key Findings:

- The Drug Testing Laboratories were functioning well in most of the states. Lack of adequate budgetary allocation is a major constraint in their effective functioning as it impedes with purchase and development of essential instruments such as construction of well-equipped drug testing laboratories etc. (National Institute of Health and Family Welfare, 2020) (EY Primary Analysis : KIIs, 2019).

- Websites in several states remain un-updated and largely information is maintained in offline mode (National Institute of Health and Family Welfare, 2020).

D. National Leprosy Eradication Program

India has already achieved elimination of leprosy at National level. All efforts are being made by the NLEP to achieve elimination of Leprosy at the sub-national level, i.e. upto the district level. All Efforts are made under NLEP to track and treat all leprosy patients and keep them under surveillance till they are released from treatment.

National Leprosy Eradication Program India observed a decrease in prevalence rate of 57.8/10,000 in 1983 to less than 1/10,000 by the end of 2005. India declared to have reached the World Health Organization (WHO) target of elimination as a public health problem when the prevalence rate was observed to be less than 1/10,000. After 2005, important and noticeable changes in the program were made by the National leprosy eradication program (NLEP) and the global leprosy program, which may have affected the new case detection (NCD) rate, disability, and child leprosy patterns, which do not show any decline (Rao & Suneetha, 2018).

60% of new cases reported for leprosy globally annually are from India. India is one of the 22 "Global Priority Countries" that account for 95% of world numbers of leprosy. In 2007, new cases detected in India were 137,685, and in 2016, the numbers were similar at 135,485. New cases detected in 2016 were significantly higher than the new cases detected in 2015, which were 127,326. This rise in number of new cases can be due to NLEP implementing the new strategy of innovative Leprosy Case Detection Campaign (LCDC) (Rao & Suneetha, 2018).

Figure 3-51 : Leprosy- Incidence and Prevalence
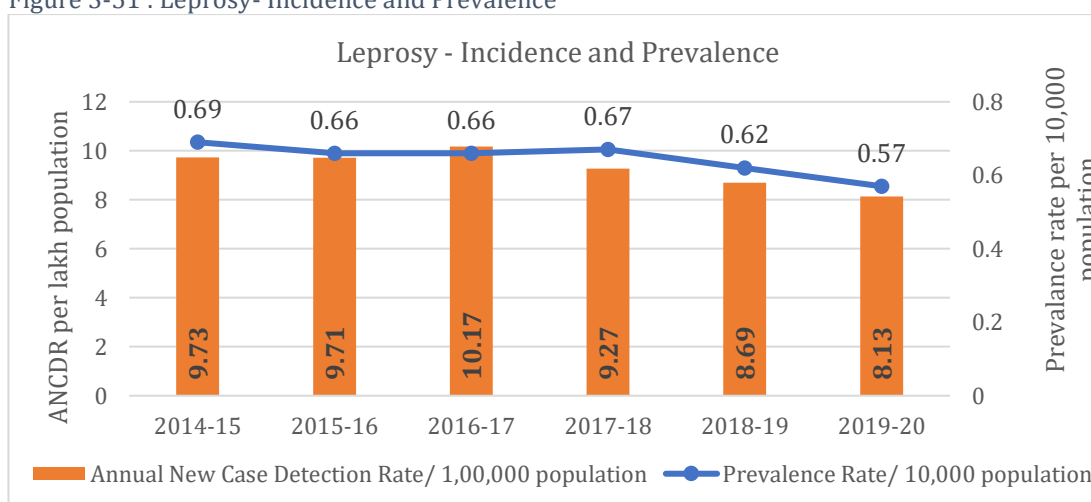
Source- MoHFW, 2020

All efforts are being made by the NLEP to achieve elimination of Leprosy at the sub-national level, i.e. upto the district level. A consistent progress is being made in this regard as is evident from the table 3-15:

Table 3-15: Number of districts with prevalence < 1

S. N	Financial Year	No. of districts with prevalence < 1
1.	2016- 17	554
2.	2017 – 18	572
3.	2018 – 19	588
4.	2019-20	607

Source: MoHFW, 2020

Under NLEP, One State (Chhattisgarh) and one U.T. (Dadra & Nagar Haveli) have so far never achieved elimination till March 31, 2018 (Ministry of Health and Family Welfare, 2019). Higher prevalence rate in certain districts is due to peculiar geographical challenges and also, in certain districts, due to detection of higher number of leprosy cases through active case search campaigns.

Leprosy cases observed in children is a critical indicator of recent spread of the disease and failure of leprosy control programs. Increased commitment is required to address the issue of missed and misdiagnosis of leprosy cases in infants and young children (Narang & Kumar, 2019). One of the major thrusts of NLEP has been to detect the child cases at the earliest possible in order to prevent Grade 2 Disabilities.

The program statistics show that not only the child cases have registered a constant declining trend, but the child G2D numbers have also consistently declined due to active case search activities carried out by the NLEP.

Table 3-16: Child leprosy cases and child disability

Indicator	2016-17	2017-18	2018-19	2019-20
Number of child cases	11,770	10,287	9,227	7,859
Number of child cases with G2D	156	85	84	63

Source: MoHFW, 2020

These statistics thus indicate the success of active case search activities. Recently leprosy screening has also been added under Rastriya Bal Swasthya Karyakaram (RBSK) with a view of detect the child leprosy cases at an early stage.

Further, leprosy elimination has never been interpreted as "zero leprosy".

Many cases on treatment leave or drop out from the multidrug regimen (MDT) due to various reasons. The drop out patients either do not opt for treatment until their leprosy worsens clinically or choose to consult private doctors or hospitals who may not recommend or prescribe a proper antileprosy drug regimen. Therefore, the patients who drop out and whose follow up is not taken put the community around them at risk by transmitting the disease in the community (Sengupta, 2018). Default in procedural treatment has been one of the major reasons for failure of the program. Trained health workers who make sure to monitor the regularity of the patients taking the treatment and that they do not leave the regime mid-way are required. Mobile networking can be used as an alternative to ensure the same (Sengupta, 2018). Follow-up visits to the leprosy patients by the supervisory staff found lacking in Chhattisgarh and Uttrakhand (12th CRM, 2020).

ASHAs and other community volunteers are incentivised for ensuring the complete treatment of Leprosy patients. GIS mapping is also being done by UTs like Dadra & Nagar Haveli to ensure the uninterrupted treatment of leprosy patients. The default in treatment takes place in some cases due to the migration of patients from one place to another on account of their profession or occupational requirements. A mechanism is being devised to track leprosy cases in migratory population as well through real time sharing of relevant information and data.

It has been realised that there has been too much of an importance given on "numbers" – prevalence of the disease and a new case detection rate instead of other more important

indicators of grade 2 disability, leprosy in the younger age group, and multibacillary disease (Rao & Suneetha, 2018).

Figure 3-52 : Grade II Disability due to Leprosy
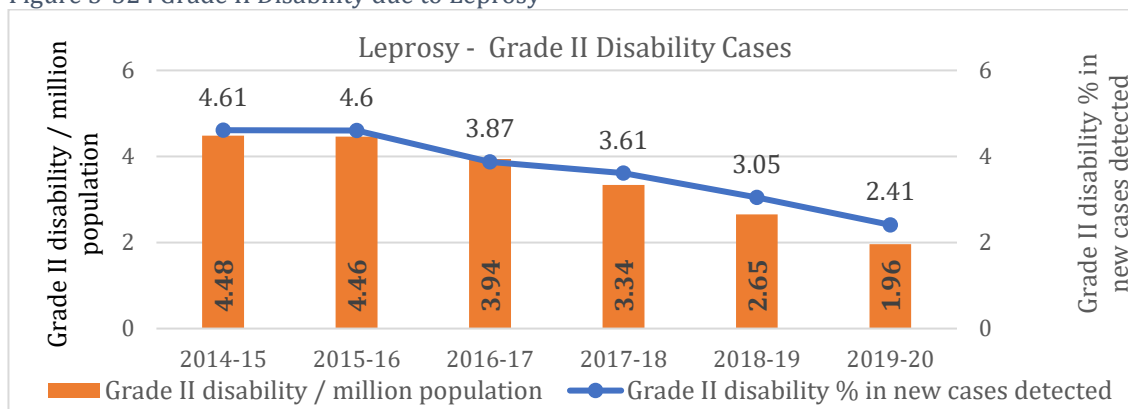
Source- MoHFW, 2020

Most of the high leprosy prominent zones are now restricted to the states of Odisha, Bihar, Uttar Pradesh, Madhya Pradesh, West Bengal, Chhattisgarh, and Dadra Nagar Haveli. In these areas there is an absence of sanitation and basic hygiene, essential for a good healthcare system (Sengupta, 2018).

Formal records for contact investigation activities to be maintained and monitored at most states. Entries in the master treatment register, individual patient treatment card and disability register were found to be inadequately filled (12th CRM, 2020).

Table 3-17: Output-Outcome Indicator- National Leprosy Eradication Program

National Leprosy Eradication Program					
Outputs ●					
Output	Indicator	Target	Data	Source	Status
Decline in percentage of Grade II Disability (G2D) cases among new cases	Reduction in percentage of detection of new Grade II (G2D) disability cases among new cases at national level	To be reduced to 2.5% or below by 2019-20	% of detection of new GrII disability cases among new cases fell from 3.05% (2018-19) to 2.41% (2019-20)	MoHFW	Met
Outcomes ●					
Outcome	Indicator	Target	Data	Source	Status
Elimination of Grade II disability (G2D) due to leprosy	Grade II disability per million population at national level.	To be reduced to 2.25 case per million population or below by 2019-20	A total of 2,761 Gr. II disability cases were detected amongst the New Leprosy Cases during 2019-20, indicating the Gr. II Disability at 1.96/ million population	MoHFW	Met

E. National Vector Borne Disease Control Program

The performance of National Vector Borne Disease Control Program has been evaluated on performance in regard to Malaria, Chikungunya, Dengue, Kala Azar, Lymphatic Filariasis and Japanese Encephalitis

India has made substantial progress in reduction of malaria burden. Prevention and control of communicable diseases, including locally endemic diseases- steady decline in incidence and mortality of communicable diseases is observed, the targets for most of the communicable disease are yet to be achieved.

As per NSS 76th Round, 15.2 % of households reported facing problem of stagnant water in or around the household premises. 10.1% (11.2% in rural and 7.9% in urban) of households reported Malaria/Dengue/Chikungunya/Encephalitis illness suffered by any of the household members during last 1 year (NSSO 76th Round, 2018).

Figure 3-53: % Households reporting Malaria/Dengue/Chikungunya/Encephalitis in last 1 year vs % households facing problem of stagnant water
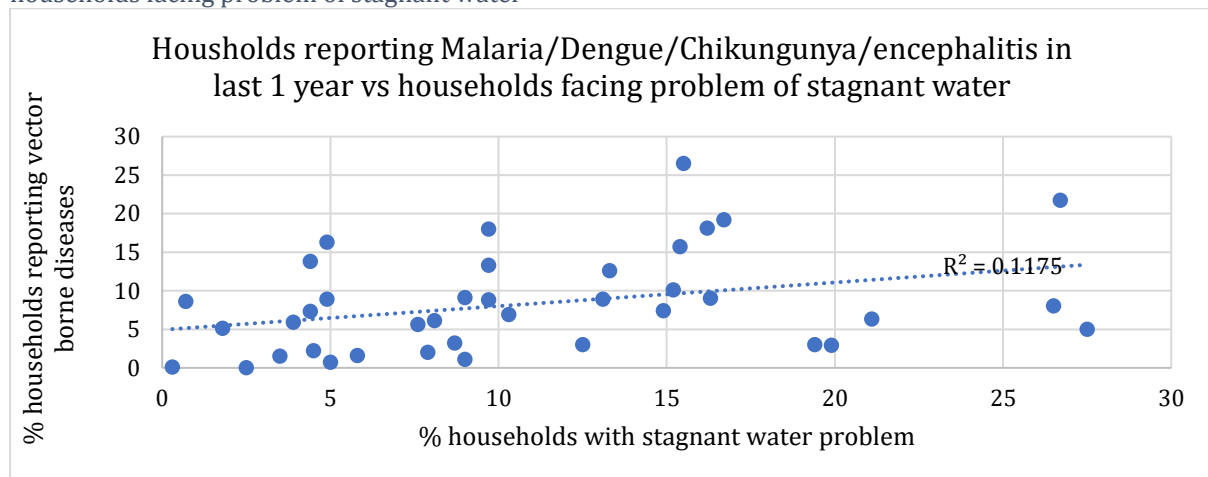
Source: NSSO 76th Round, 2018

From the NSSO 76th Round, it has been observed that there is a direct relationship between households facing problem of stangnant water and households reporting a vector borne disease (Malaria/Dengue/Chikungunya/Encephalitis) in the last 1 year (NSSO 76th Round, 2018).

Figure 3-54 : % Households reported Malaria/Dengue/Chikungunya/Encephalitis illness suffered by any of the household members during last 1 year
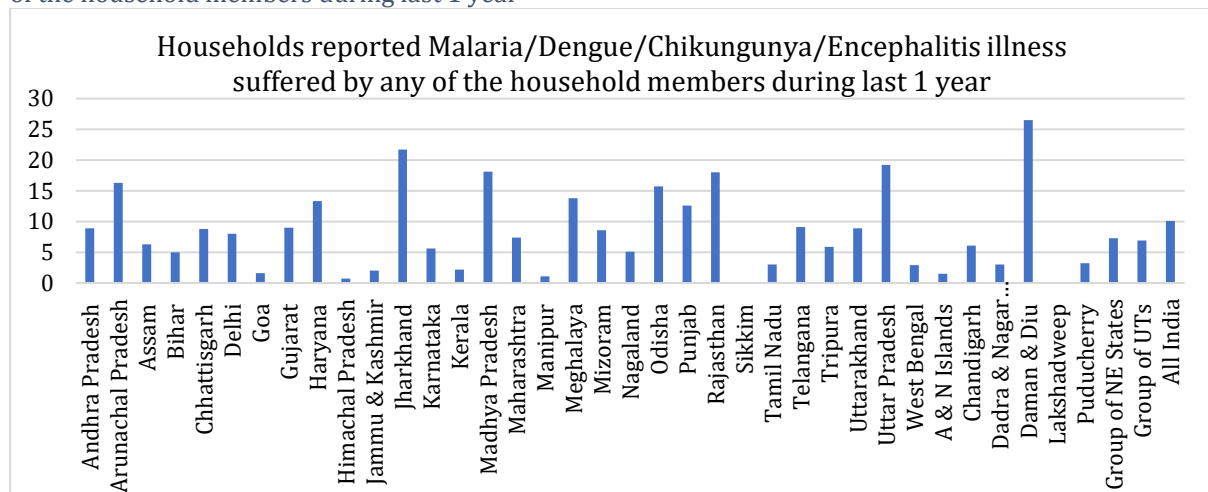
Source: NSSO 76th Round, 2018

Chapter 3: National Rural Health Mission

States such has Jharkhand, Madhya Pradesh and Uttar Pradesh reported the highest incidence of vector borne diseases.

i. Malaria

India achieved a reduction of 83% in malaria morbidity and 92% in malaria mortality between 2000 and 2019, thereby achieving Goal 6 of the Millennium Development Goals (50-75% decrease in case incidence between 2000 and 2018). Malaria cases have declined significantly by ~70% and deaths due to malaria have been reduced by ~80% in 2019 as compared to 2015. The total number of malaria cases reported in 2019 were 3,38,513 (P) in comparison to 4,29,928cases reported in 2018.

Against the SDG target of 90% reduction in malaria incidence till 2030 compared with 2015 baseline, the incidence rate (per 1000 population at risk) in India decreased by 23.17% from 9.97 in 2015 to 7.66 in 2017[80].

Figure 3-55 : Malaria- Cases and Mortality
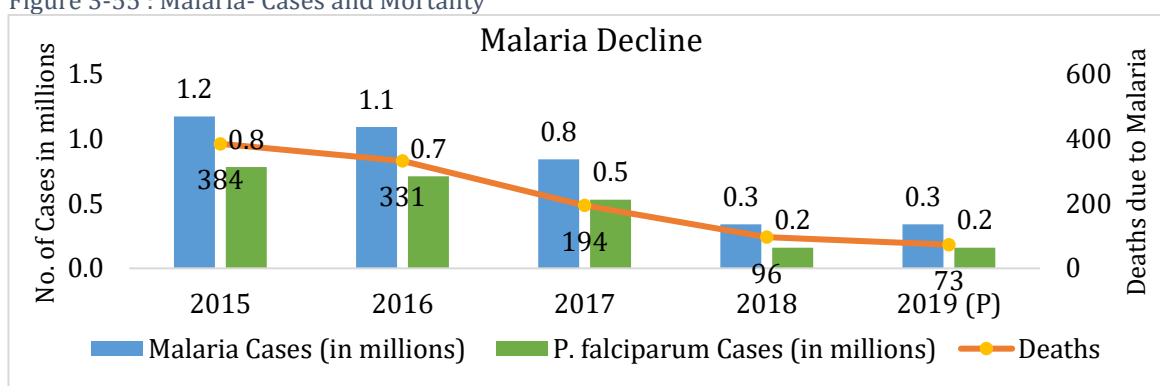
Central and northeast states contribute to approximately 80% of total positive cases (Rahi, et al., 2019). In 12 States decline in malaria deaths was observed whereas 19 States sustained Zero malaria deaths status.

ii. Chikungunya

After re-emergence of Chikungunya in 2006, the cases of Clinically Suspected Chikungunya were reported every year but gradually declined till 2014. However, due to the report of increased numbers of cases by few States, the disease shows an increasing trend in 2015 (Karnataka) and 2016 (Delhi and nearby States). Currently, Chikungunya is endemic in 26 States and 6 UTs. During 2018 a total of 57,813 suspected Chikungunya cases were reported from 28 States, whereas in 2019, a total no. of 81,914 clinically suspected Chikungunya cases were reported from 29 States/UTs. The maximum cases were reported from Karnataka (43,698) followed by Gujarat (8,084), Puducherry (7,084), Telangana (5,352) and Maharashtra (5,158).

The total reported cases of chikungunya have been rising in India in recent years, especially during 2016-2017 (Bharti, 2018). This was probably influenced by the high efficiency of case detection by introduced of new chikungunya detection kits developed by the National Institute of Virology and made available through NVBDCP.

Chickugunya Fever in India since 2015
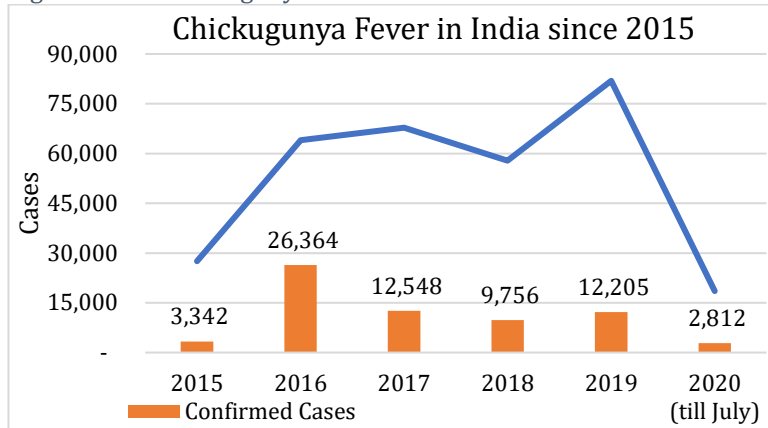
Source: NVBDCP website[82]

A key recommendation is that government hospitals till the district level should have the capacity, skilled workforce and necessary drugs and diagnostic infrastructure to tackle chikungunya infections, particularly in outbreak situations (Bharti, 2018). If there is unavailability of a facility in the vicinity with required facilities a prompt referral system should be in place (Bharti, 2018).

iii. Dengue

According to WHO and Global burden of disease in 2013, India has been identified as an epicenter of dengue. Dengue is endemic in 29 States and 6 UTs (except Lakshadweep). Recurring outbreaks of Dengue have been reported from Andhra Pradesh, Assam, Delhi, Goa, Haryana, Gujarat, Karnataka, Kerala, Maharashtra, Odisha, Puducherry, Punjab, Rajasthan, Tamil Nadu, Telangana, Uttar Pradesh and West Bengal.

During 2018, a total of 1,01,192 cases and 172 deaths were reported from 29 States and 6 UTs, whereas, in 2019, a total of 1,57,315 cases and 166 deaths were reported from 29 States and 6 UTs. Maximum cases were reported from Gujarat (18,219) followed by Karnataka (16,986)and Maharashtra (14,907),. Maximum deaths are reported from Maharashtra (29), Uttar Pradesh (26). Case Fatality Rate (CFR, deaths per 100 cases) which was 3.3% in 1996 has come down from 0.23 in 2015 to 0.1% in 2019, because of better management of Dengue cases.
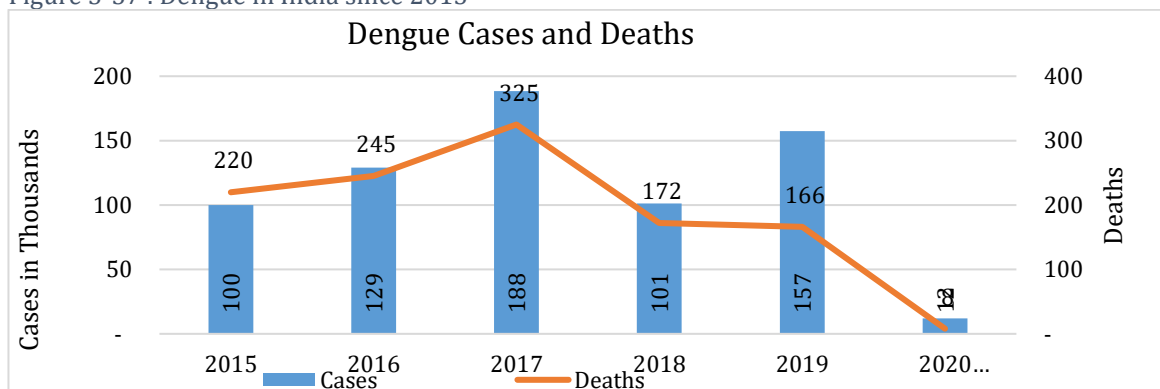
Source: NVBDCP website[83]

India has a lack of financial and human resources, poor availability of point-of-care diagnostics, and ineffective mosquito control methods and innovative research on dengue vaccines (Shet & Kang, 2019).

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[82] https://nvbdcp.gov.in/index4.php?lang=1&level=0&linkid=486&lid=3765 ; last accessed on 27 September 2020

[83] https://nvbdcp.gov.in/index4.php?lang=1&level=0&linkid=431&lid=3715 ; last accessed on 27 September 2020

iv. Kala Azar or Visceral Leishmaniasis (VL)

Kala-azar elimination is one of the important public health programs in the country and GoI is committed to its elimination within the shortest span of time. As per the National Health Policy (2002), KA was to be eliminated by 2015, however, the target could not be achieved due to prolonged treatment of 28 days leading to reduced compliance by the patients, development of resistance to the insecticide, lack of infrastructure mainly in terms of human resources at district and block levels and monitoring and supervision. Realising the above cited technical and administrative issues, GoI provided VBD consultants and KTS / MTS out of World Bank funds during 2012-13.

In India, Kala-azar cases are mainly reported from 54 districts of 4 states i.e. Bihar (33 districts), West Bengal (11 districts), Uttar Pradesh (6 districts) and Jharkhand (4 districts). Government of India has targeted Kala-azar elimination with a target to reduce the annual KA case incidence to <1 per 10,000 population at block level. Number of districts with prevalence of kala-azar less than 1 has increased to 588 in 2018-19 from 554 in 2016-17.

At the end of 2019 a reduction of 28.5% & 34.3% in VL and PKDL cases respectively was reported in comparison to corresponding period of 2018. Similarly (94.2%) blocks reported <1 case per 10,000 population at the end of 2019 leaving only (5.8%) blocks reporting >1 case per 10,000 population.

Figure 3-58 :Kala Azar- Incidence and Mortality
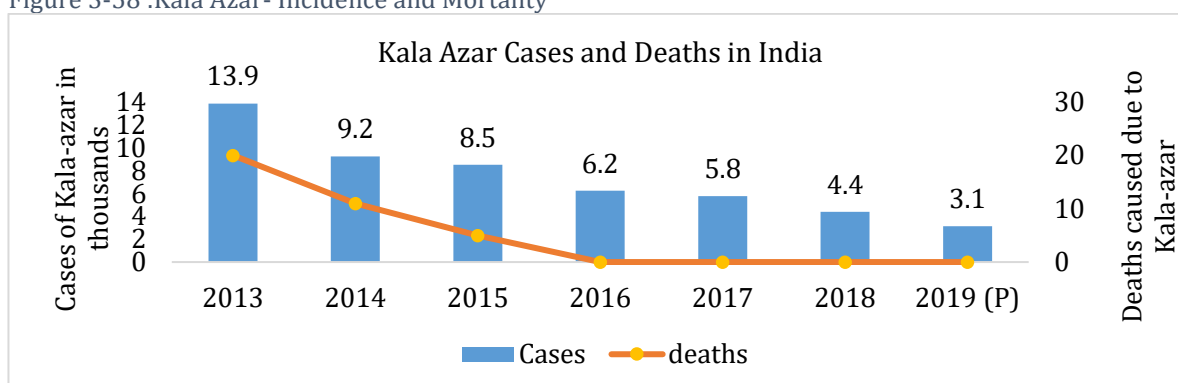
Source: NVBDCP website[84]

Goverment of Bihar and Jharkhand have been providing an incentive of ₹6,600/- as wage loss compensation to the VL patient for getting their treatment. GoI has also increased incentive to ASHA from ₹300-500 for detection and complete treatment of KA cases. ASHAs are also provided an incentive of ₹200/- for two rounds of IRS per year for motivating the community to get their houses sprayed in full.

Monitoring and Supervision by Central and State Governments has been significantly intensified especially during two rounds of IRS & other KAE related activities as a result of which GoI is inching very close to the target of elimination as only (5.8%) blocks have reported > 1 case/10000 population at the end of 2019. The technical reasons that delayed the target of elimination are as follows:

- Chronic nature of the disease with a variable Incubation Period ranging from 3-12 months.
- Appearance of new foci.

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[84] https://nvbdcp.gov.in/index4.php?lang=1&level=0&linkid=467&lid=3750 ; last accessed on 27 September 2020

- Health seeking of the community as they initially seek treatment from local practitioners and hence do not report early to health system.
- Prolonged treatment of 3 months (approx. 30 days) for PKDL cases.
- Significant time gap between appearance of symptoms and detection.

Kala-azar may be eliminated if the program ensures effective drugs, better insecticides and strict monitoring and supervision. As the disease occurs in focussed areas or zones, availability of strategic and efficient tools and interventions including latest drugs and diagnostics in the focussed area should make it possible to eliminate kala-azar. However, Close monitoring and evaluation of Program activities will be required along with technical support from subject experts, government and academic institutions (Thakur, 2016).Delayed diagnosis, low health seeking behaviour, cultural practices, engagement of private practitioners, faith healers are the major challenges inherent with the system (WHO, 2017).

Detection & treatment of PKDL cases is also equally important as these cases act as a reservoir of transmission and accordingly GoI raised the incentive towards wage loss of PKDL cases from ₹2,000 to ₹4,000 since March, 2018.

Figure 3-59 : Cases of Post-Kala-Azar Dermal Leishmaniasis
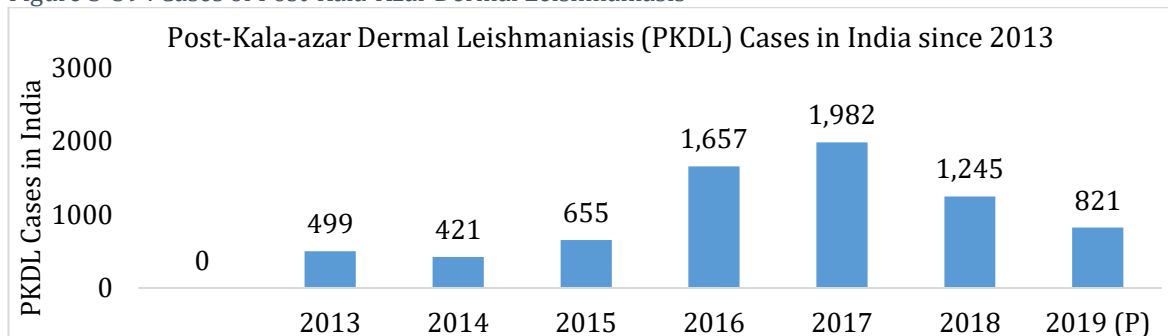
Source: NVBDCP website[85]

As per Global Health Observatory (GHO) data maintained by WHO, based on VL data of 2017, the contribution of India in Global VL burden has decreased from 51.6 % in 2011 to 26% in 2017.

v. Lymphatic Filariasis

As on 2018, a total of 12,98,233 Lymphatic Filariasis cases were reported from 16 States and 5 UTs (approximately 630 million population in 256 now 257 districts), wherein Lymphoedema and Hydrocele cases are 9,03,835 and 3,94,398 respectively. Till December 2018, a total of 1,48,736 hydrocelectomy operation were reported under morbidity management from 16 States and 5 UTs.

Among the 257 (includes 1 districts Simdega since 2019) LF endemic districts, 98 districts have achieved microfilaria rate <1% as verified by Transmission Assessment Survey (TAS-1) and stopped Mass Drug Administration (MDA). 13 districts have also achieved microfilaria rate <1% and need to be validated by TAS in 2020.

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[85] (https://nvbdcp.gov.in/index4.php?lang=1&level=0&linkid=467&lid=3750) ; last accessed on 27 September 2020

Chapter 3: National Rural Health Mission

District Level Program Coverage

Table 3-18: Status of Drug administration and assessment survey for Lymphatic Filariasis

Drug Administration and assessment Survey	No. of Districts
Total Lymphatic Filariasis endemic districts	257
Districts completed 5 Rounds of MDA (Mass Drug Administration)	256
Districts cleared 1st Transmission Assessment Survey (TAS) and Stopped MDA	97
Districts cleared 2nd Transmission Assessment Survey (TAS)	81
Districts cleared 3rd Transmission Assessment Survey (TAS)	32

Source- Annual Report MoHFW, 2019-20

As per NHP 2002, Lymphatic Filariasis was targeted for elimination by 2015 for which twin pillar strategy was adopted:

i. MDA for interruption of transmission i.e no new case.
ii. Managing morbidity and preventing disability (MMDP) to care of the patient who were already afflicted with the disease manifestation.

ELF Mass Drug Administration (MDA) campaign was started in the country in 2004. 98 districts achieved elimination i.e. Mf rate <1% which is validated by Transmission Assessment Survey (TAS) and stopped MDA.

Table 3-19: Lymphoedema, Hydrocele and Hydrocelectomy cases in India (2018)

	Status as of December 2019
Number of Lymphoedema cases	9,21,357
Number of Hydrocele cases	3,96,801
Number of Hydrocelectomy cases	1,57,458

Source: MoHFW, 2020

The desired impact could not be gained due to following reasons:
*   Lack of accountable human resource for drug administration
*   Acceptability of Drug Administrator in the community during Mass Drug Administration (MDA) campaign.
*   Huge geographical boundary (urban area) and population load in each Implementation Unit
*   Challenge to achieve the desired coverage and compliance (coverage needs to be more than 90 percent and the compliance more than 80 percent).
*   Lack of awareness level and acceptability of the program in community.
*   Quality of night blood survey (NBS) during 8.30 pm to mid night to assess the impact of MDA campaign
*   Monitoring and supervision during the different activities i.e. MDA, NBS, TAS etc.

To expedite the elimination of LF, Government of India launched the Accelerated Plan for Elimination of Lymphatic Filariasis (APELF) in India on 13th June 2018 by Hon'ble Minister of Health and Family Welfare in the Global Alliance for Elimination of Lymphatic Filariasis (GAELF) meeting at New Delhi. IDA (triple drug therapy) has been launched and in a phase of expansion in all the remaining districts.

vi. Japanese Encephalitis

JE is endemic in 271 districts of 22 states and every year the disease is spreading to newer districts. More than 70% of disease burden is contributed by Assam, Bihar, Tamil Nadu, Uttar Pradesh and West Bengal. High case fatality and disability are major concerns associated with the JE. Strengthening of Critical Care services was done by incentivizing ASHA for early referral of

AES/JE cases and establishment of 31 Pediatric ICUs (PICUs) in endemic districts. Strengthening of diagnostic service was done by supplying JE test kit (MAC ELISA) free of cost to the endemic states. Such strengthening activities resulted in 42% decline in case fatality rate in AES/JE cases from 18.6% in 2013 to 10.8% in 2018 (MoHFW, 2019).

Control of Japanese Encephalitis is challenge due to its complicated and difficult eco-epidemiology. The disease burden is not only related to the acute disease, but also to adverse aftereffects such as sequelae and long-term disability. Out of six vector borne diseases, JE is the only disease against which vaccination is available. This is most effective preventive tool available for JE.

Figure 3-60 : Japanese Encephalitis- Incidence and Mortality
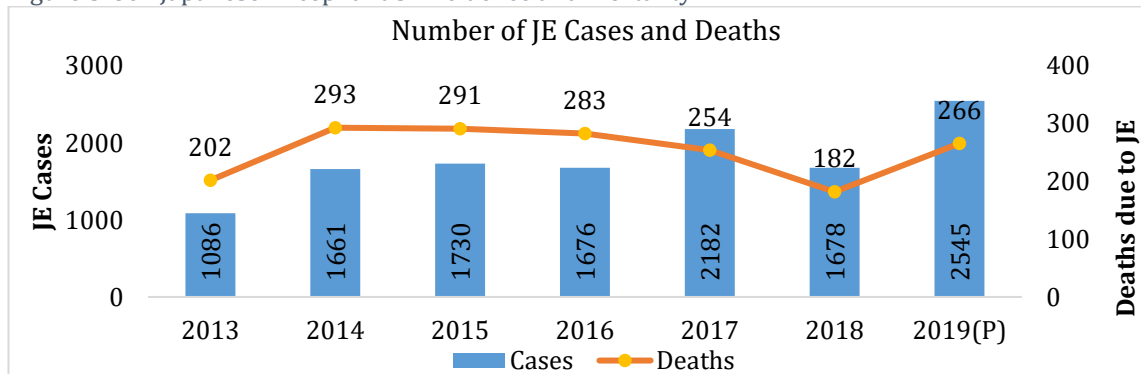
Source: NVBDCP website [86]

Table 3-20: Status of JE vaccination

JE Vaccination	No. of Districts
Districts covered under JE vaccination campaign	234
New districts identified in 2019 for JE vaccination campaign in children 1-15 Yrs	41
Districts covered for adult vaccination in Assam, Uttar Pradesh & West Bengal, in 2019	31

Source: MoHFW Annual Report 2019-20

The intervention resulted in around 42% decline in case fatality rate in AES/JE cases from 17.6% in 2014 to 10.2% in 2019.

Systematic surveillance work on vector species, commitment for JE prevention and monitoring & evaluation, development of diagnostic tools will have a positive public health impact. Rehabilitation of JE patients with disabilities needs to be included in conjunction with the capacity building. Restoring the vaccine deficit by scaling up the currently available interventions would be essential towards India's roadmap to development (Srivastava et. al., 2014).

Overall NVBDCP needs to work on delivery systems and services by ensuring continuity of vector control services across the rural and urban areas, establishing collaborative framework allowing simultaneous effort between preventive and curative services and similarly across primary and secondary centres (WHO, 2014).

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[86] https://nvbdcp.gov.in/WriteReadData/l892s/66796489131599048849.pdf ; last accessed on 27 September 2020

Chapter 3: National Rural Health Mission

Table 3-21: Output-Outcome Indicator- National Vector Borne Disease Control Program

National Vector Borne Disease Control Program					
Output 🟢					
Output	Indicator	Target	Data	Source	Status
Malaria: Reduction in number of cases.	Percentage reduction in no of cases compared to corresponding period in the previous year.	12% annual reduction	49.09% reduction in malaria cases from 2017 to 2018. Reduction from 2018 to 2019* is 33.46%. *upto October 2019	NVBDCP website	~Met
Kala azar: Reduction in PKDL cases	Percentage reduction in PKDL cases as compared to previous year	50% annual reduction	37.18% reduction in PKDL cases from 1982 in 2017 to 1245 in 2018. The number of cases due to PKDL in 2019 (till Nov) was 739.	NVBDCP website	~Met
3. Japanese Encephalitis (JE) /Coverage of JE in routine immunization at the national level	Percentage of population covered under routine immunization	90% by 2019-20			Not Available in public domain
Lymphatic Filariasis: Protect the population by Mass Drug Administration (MDA) in LF Endemic Districts	No. of LF endemic Districts observing MDA in eligible population	140 districts by 2019-20	151 districts out of the 257 endemic districts.	Annual Report MoHFW 2019-20	Met
Outcome 🟢					
Outcome	Indicator	Target	Data	Source	Status
Malaria reduction in API.	Percentage reduction in API at national level.	12% annual reduction	% reduction in API: 24.7% from 2016 to 2017. 50% from 2017 to 2018 21.87% from 2018 to 2019(P) 96% from 2019(P) to 2020(P)	NVBDCP website	Met
Kala azar: Kala azar elimination	Reduction in Number of endemic blocks reporting >1 KA case/10000 population at Block level.	54 blocks by 2019-20	94 % Kala-Azar endemic blocks (51 out of 54) have achieved the elimination target in 2018-19	MoHFW, 2020	~Met
JE: Reduction in JE cases	Prevalence of JE cases to <1 case/ 100,000 population at District level	20% annual reduction	More than 50% increase in JE Cases from 2018 to 2019.		Unmet

Lymphatic Filariasis: Stop MDA in Endemic Districts through TAS (Transmission Assessment Survey) verification	Number of LF Endemic Districts achieved Mf Rate <1% verified by TAS.	22 districts by 2019-20	98 districts achieved elimination i.e. Mf rate <1% which is validated by Transmission Assessment Survey (TAS) and stopped MDA. (38% endemic districts)	MoHFW, 2020	Met

F. National Tuberculosis Elimination Program

Under NTEP, a key development in India in 2017 was the political commitment to escalate private provider participation and involvement nationwide. The National Strategic Plan for Tuberculosis Elimination (2017–25) promises a huge increment of private provider engagement and invites a 600% increase in private notifications to 20 lakhs patients per year by 2020, which would represent 75% of the estimated tuberculosis incidence.

The estimated TB incidence in India is 27 lakh. In 2018, 21.5 Lakh cases were notified under RNTCP. As compared to 2017 this is a 16% increase and the highest year-on-year increment so far. Out of the total notification, 25% (5.4 lakh) cases were from the private sector; which is 40% higher than last year. From all the notified treatment was started for around 19.1 lakh cases (~90%), from both private and public sectors.

India achieved complete coverage for diagnostic and treatment services for multi-drug resistant TB (MDR-TB) geographically in 2014. (JMM WHO, 2015). The treatment success rate among MDR-TB patients in India is consistently about 46% and the death rate is around 20%, as against the global level of treatment success rate of 52% and death rate of 17% (MoHFW & WHO, 2016).

However, there were wide variations in the state-wise levels of drug resistance highlighting that national level estimates tends to mask the local and focal epidemics that need to be addressed with specific interventions (MoHFW & WHO, 2016)

Figure 3-61 : Tuberculosis incidence and mortality
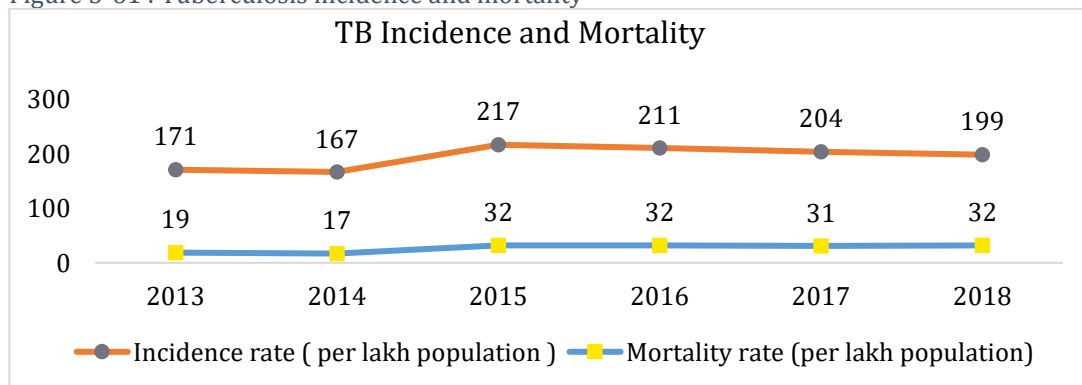
Source: WHO TB Report 2019- India Country Profile

Tb mortality is a key concern for NTEP, India. Rate of decline in deaths due to tuberculosis from 2000-17 in India is 3.6%. The loss value due to tuberculosis mortality is estimated $32 billion per year on an average in India (Reid et al., 2019). Another challenge that the RNTCP faces is private sector involvement. The private sector is very big, diverse and growing rapidly. Over 70% of people with TB first seek treatment from the private sector. Even with necessary notification, many patients are still not notified to the RNTCP (JMM WHO, 2015).

Performance and Achievement against Drug Sensitive TB- During 2017, 13,64,562 patients were notified as DSTB patients and the treatment success rate of 79% was achieved amongst them, by

the use of standardized treatment regimens, delivered in an uninterrupted manner to patients free of cost with the help of treatment supporter or Information & Communication Technology (ICT) enabled adherence monitoring mechanism like 99 DOTS, MERM, ZMQ V-DOT, etc.

Performance and Achievement against Drug resistant TB- During 2018, 58,347 MDR/ RR TB cases were diagnosed and 46,569 (80%) of them were put on either shorter or conventional MDR TB treatment. A surge in number of MDR/ RR TB patient (150%) was observed, poor coordination between decentralized diagnostic & treating health facilities could be the reason for reduction in the proportion patients put on treatment. Treatment success rate of 30,183 MDR/ RR TB patients initiated on treatment during 3rd Quarter of 2015 to 2nd Quarter of 2016 was reported to be 47% with 20% death and 19% loss to follow up. For 2,305 XDR TB patients initiated during 3rd Quarter of 2015 to 2nd Quarter of 2016, success rate was reported to be 27% with 42% death and 14% loss to follow up.

If National Strategic Plan (2017-25) succeeds, India will be the first major high-burden country with a higher private health-care sector participation than public health sector participation with respect to its tuberculosis program with the treatment seeking trends of its population (Reid et al., 2019)

Throughout, RNTCP has demonstrated unprecedented financial absorption capacity. While allocations have been lower than requested (JMM WHO, 2015).

Figure 3-62: NTEP Budget Allocations and Expenditure
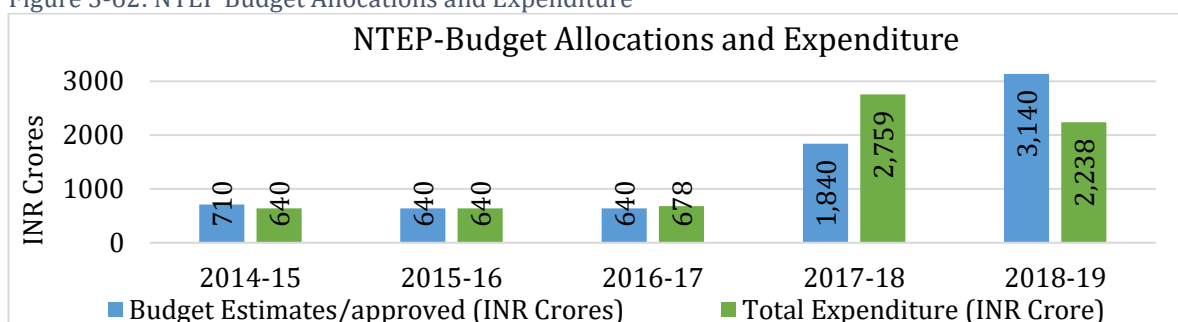
Source: India TB report, 2019

The RNTCP laboratory network is composed of a three-tier system with National level Reference Laboratories (NRLs), State level Intermediate Reference Laboratories (IRLs), and peripheral level laboratories as Designated Microscopy Centres (DMCs). (Revised National TB Control Program Technical and Operational Guidelines for Tuberculosis Control in India, 2016). At national level 6 National Reference Laboratories are there reporting to central TB division. There are 31 Intermediate Reference Laboratories (IRL) established in the country, at least one IRL in every state. IRLs provide technical support to C & DST laboratories in Medical College, Private and NGO laboratories. There are 80 TB C&DST Laboratories certified by RNTCP providing diagnostic services. 1180 CBNAAT machines have been deployed, across all parts of the country. 45 of them have been mounted and attached on mobile vans and supplied to the States for improving case finding (India TB Report 2019). Tuberculosis Unit (TU) one per Block/one per 1.5-2.5lac population is set up. At the peripheral level, networks of RNTCP designated microscopy centres (DMCs) are functional under District TB centres and supervised by sub-district TB units. under RNTCP (MoHFW, 2019). 16,574 DMCs (one per 1.0 lac population / one per 0.50 lac population in hilly, tribal, desert and difficult to reach areas) and 400,000 Treatment Support Centres make tuberculosis treatment available in every village of the country. (MoHFW, 2019) (India TB Report 2019).

Among the people who or whose family members have or had TB, 93% took the TB treatment in full. Overall, a majority of the people took TB treatment at government health facilities (88%). Among social groups, OBCs had the highest percentage of people opting for treatment at private health facility (17%). The percentage of people taking TB treatment at government health facility was 87% in rural areas & 92% in urban areas. Among the people who took TB treatment, only around 11% received government aid for their TB treatment. Majorly Direct Benefit Transfer (83%) was used to make the payment for providing aid to the people receiving TB treatment (EY Primary Analysis Household Survey, 2019).

Table 3-22: Output-Outcome Indicator- National Tuberculosis Elimination Program

National Tuberculosis Elimination Program					
Outputs 🟢					
Output	Indicator	Target	Data	Source	State
Increase in TB case notification	Annual percentage increase in TB cases notification (Public & Private) from 2018	8% increase, 23.22 Lakh new cases in 2019-20	In 2018, TB notification rate was 21.5 Lakh. This is a 16% increase as compared to 2017. The notification from private sector increased by 40% in 2018 as compared to 2017.	India TB Report 2019	~Met
Outcomes 🟡					
Outcome	Indicator	Target	Data	Source	Status
Reduction in TB incidence rate	Percentage reduction in TB incidence rate from 2018	-	2.45% reduction in TB incidence from 2017 to 2018.	WHO Country Profile – India 2019	Target unavailable
Reduction in TB mortality rate	Percentage reduction in TB mortality rate from 2018	-	As per WHO TB report 3.22% increase in TB mortality (excludes HIV+TB) from 2017 to 2018.	WHO Country Profile – India 2019	Target unavailable
Treatment success rate amongst notified Drug Sensitive TB Cases	Treatment success rate amongst Notified Drug Sensitive TB cases (Public & Private) from 2018	>80% by 2018-19	During 2017, 13,64,562 patients were notified as DSTB patients and the treatment success rate of 81% was achieved amongst them	India TB Report 2019	~Met

G. Integrated Disease Survelliance Program (IDSP)

IDSP strives to strengthen/maintain decentralized laboratory-based IT enabled disease surveillance system for epidemic prone diseases to monitor disease trends and to detect and respond to outbreaks in early rising phase through trained Rapid Response Team (RRTs)

- In 2018, a total of 1606 outbreaks were reported by the Integrated Disease Surveillance Program network.

- Other than Vector borne, Vaccine preventable and water borne disease outbreaks, re-emerging diseases like Kyasanur Forest Disease, Crimean-Congo hemorrhagic fever, Seasonal Influenza-A (H1N1), Anthrax, Brucellosis etc., have been successfully detected and contained by the State/ district surveillance units.

- In 2018, 626 media alerts for any unusual health events were verified through media scanning and verification cell.

- 292 District Public Health Labs (DPHLs) have been approved in 2018. Figure 3-63 shows the number of labs approved and labs performing as per tests recommended by IDSP in the last two years.

Chapter 3: National Rural Health Mission

Figure 3-63: IDSP Labs approved and performing as per standards
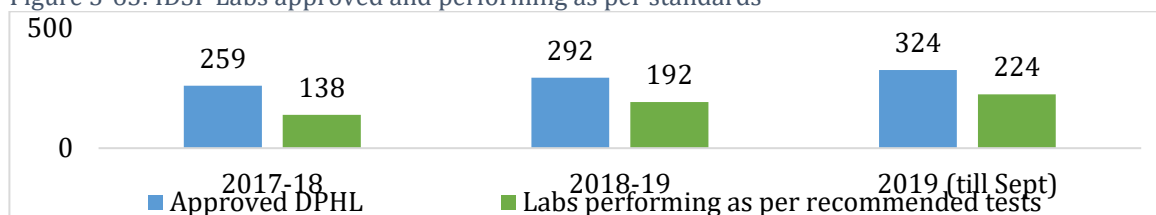
Source-Annual Report MoHFW, 2019-20

- Figure 3-64 shows the increase in the number of labs made functional in the last five years.

Figure 3-64: Number of functional Labs under IDSP
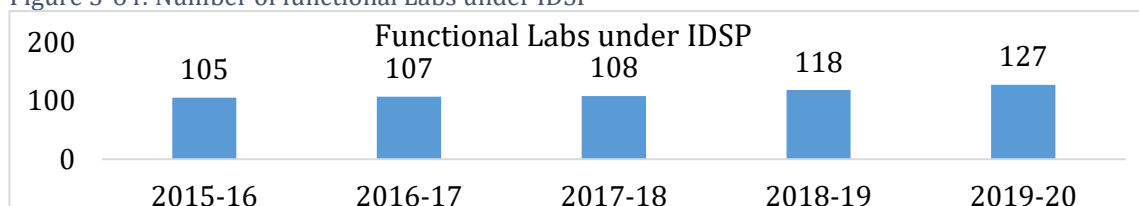
Source-Annual Report MoHFW, 2019-20

- A referral laboratory network has been established by utilizing the existing functional labs for providing diagnostic services for epidemic prone diseases during outbreaks. At present, the network has 127 labs in 23 States/UTs.

- In order to diagnose Seasonal Influenza including H1N1 (Swine Flu), surveillance for Influenza like Illness (ILI) and Severe Acute Respiratory Infections (SARI) has been strengthened. IDSP assisted 12 network laboratories to support testing, quality assurance, provide guidance etc. for Influenza.

- A near real time, web enabled electronic health information system called Integrated Health Information Platform (IHIP) has been developed and launched on 26 Novemeber 2020. The 1st phase was launched in Andhra Pradesh, Himachal Pradesh, Karnataka, Odisha, Uttar Pradesh, Kerala and Karnataka. States targeted for 2nd phase of IHIP roll out are: Punjab, Haryana, Rajasthan, Madhya Pradesh, Gujarat, Maharashtra, Bihar, Jharkhand, West Bengal, Assam, Goa and Uttarakhand (Ministry of Health and Family Welfare, 2019)

Table 3-23: Output-Outcome Indicator- Integrated Disease Surveillance Program

Integrated Disease Survelliance Program					
Outputs 🟢					
Output	Indicator	Target	Data	Source	Status
Improved capacity of Districts to detect and respond to disease outbreaks	District Public Health Labs (DPHLs) strengthened for diagnosis/ testing of epidemic prone diseases.	300 DPHLs strengthened for diagnosis/testing of epidemic prone diseases by 2019-20	Approved DPHLs – 324 Labs performing as per tests recommended by IDSP - 224	Annual Report 2018-19	~Met
Outcomes 🔵					
Outcome	Indicator	Target	Data	Source	Status
Laboratory confirmation of outbreak prone diseases under IDSP	Number of Laboratory generating L (Laboratory) form under IDSP	≥87% completeness of Lab Confirmed "(L)" form in all States and at National Level by 2018-195			Data Not Available

H. National Iodine Deficiency Diseases Control Program

Under the National Iodine Deficiency Disorders Control Program (NIDDCP), surveys are conducted to assess the magnitude of Iodine Deficiency Disorders (IDD). The quality of iodized salt is monitored by Salt Testing Kit through ASHAs at community level. IEC activities to raise awareness against iodine deficiency are organized.

In order to prevent and control the problem of Goitre in the country, GOI launched National Goitre Control Program (NGCP) in 1962 Subsequently, the Program was renamed as National Iodine Deficiency Disorders Control Program (NIDDCP) in 1992 so as to cover all Iodine Deficiency Disorders and is being implemented in all States/UTs. The Objectives of NIDDCP are to bring down the prevalence of IDD to below 5% in the country and to ensure 100% consumption of adequately iodated salt (>15ppm) at the household level. No State /UT is free from IDD.

After every 5 years, resurveys are conducted to study the impact of iodized salt. Iodized salt is supplied as a substitute to common salt to increase iodine intake. Information, Education and Communication activities are carried out to educate people about IDDs and benefits of iodized salt.

- Till 2017-18, 777 salt iodization plants have been established. (MoHFW, 2018)

- As per a survey conducted during 2018-19 in 427 districts across all States/UTs in India, 348 districts were found to be endemic with more than 5% Iodine Deficiency Disorders (IDD). (Annual Report 2018-19). No State /UT is free from IDD (Ministry of Health and Family Welfare, 2019).

Table 3-24: Endemic Districts for Iodine Deficiency Disorder

Year	Number of Districts Surveyed	Endemic Districts (Prevalence of Iodine Deficiency Disorder >5%)
2015-16	386	335
2016-17	390	333
2017-18	414	337
2018-19	427	348

Source: Annual Report MoHFW, 2018-19

- For an effective implementation of the scheme, 35 States/UTs have established Iodine Deficiency Disorders Control Cells in State Health Directorates (Ministry of Health and Family Welfare, 2019)

- To monitor the quality of iodized salt in the country at consumption level, a total of salt samples are tested using Salt Testing Kit by ASHA in all the States/UTs except Lakshadweep.

Table 3-25: Quality of salt samples tested under NIDDCP

Year	Total no. of salt samples tested by using Salt Testing Kit by ASHA	No. of samples conforming to Standards (iodine content > 15 ppm)
2015-16	18,20,398	13,55,406 (74%)
2016-17	42,02,534	36,05,263 (86%)
2017-18	20,45,290	14,90,879 (73%)
2018-19	1,25,64,759	1,15,35,819 (92%)
2019-10 (till Sept)	69,22,558	64,06,567 (92%)

Source: Annual Report MoHFW, 2019-20

Chapter 3: National Rural Health Mission

- To test the iodine content in salt consumed by community at national/state level, a total of 80,310 salt samples were collected and analyzed by States/UTs during 2018-19, out of which 71,948 (90%) salt samples were found conforming to the standard (iodine content > 15 ppm) (Ministry of Health and Family Welfare, 2019).

- A total of 25,291 salt samples were collected and analyzed by States/UTs during 2019 20 (up to August/September), out of which 22,832 (90%) salt samples were found to be conforming to the standard (iodine content > 15 ppm)

Table 3-26:Output-Outcome Indicator- National Iodine Deficiency Diseases Control Program

National Iodine Deficiency Diseases Control Program					
Outputs ●					
Output	Indicator	Target	Data	Source	Status
Review of implementation of NIDDCP	No. of States /UTs Reviewed for Program implementation	All States/UTs (36)	All States/UTs (36) during 2017-18	MoHFW, 2020	Met
Monitoring of availability and consumption of adequately iodized salt in all States/UTs	Availability of adequately Iodized salt in the country (>30 ppm at production level; >15ppm at consumption level)	Production of adequately Iodized salt (>30ppm) more than 60 Lakh Metric Tonnes and supplied to all State/UTs	The production and supply of Iodized salt during 2018-19 was 67.38 Lakh Tonnes and 66.98 Lakh Tonnes respectively	Annual Report MoHFW 2019-20	Met
Outcomes ●					
Outcome	Indicator	Target	Data	Source	Status
Improvement in quality of implementation of NIDDCP in all States/UTs.	Implementation of NIDDCP in the entire country	All States/UTs (36)	NIDDCP implemented in All States/UTs (36)	Annual Report MoHFW 2018-19	Met
Enhancement of availability of adequately iodized salt in the States/UTs and its consumption by the community	Iodized salt conforming to Standards (iodine content > 15 ppm) consumed by community at National/ State level.	>78% for 2018-19	2015-16 94% 2016-17 87% 2017-18 96% 2018-19 90% salt samples were found conforming to the standard	Annual Report MoHFW 2018-19	Met

I. *National Program for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS)*

India has been experiencing a health transition with the burden of non-communicable diseases superseding the burden on communicable diseases. NPCDCS aims to prevent and control this rise in non-communicable diseases in the country. States are provided financial aid under the NHM umbrella for NPCDCS activities at district level and below.

The focus is on strengthening of infrastructure in the form of establishment of District NCD Cells, District NCD Clinics, District Cardiac Care Units, District Day Care Centres and CHC NCD Clinics.

The graph below shows a rise in District NCD Clinics and CHC NCD Clinics as per the required numbers of additional 50 and 300 clinics respectively.

Figure 3-65 : Number of NCD clinics set up
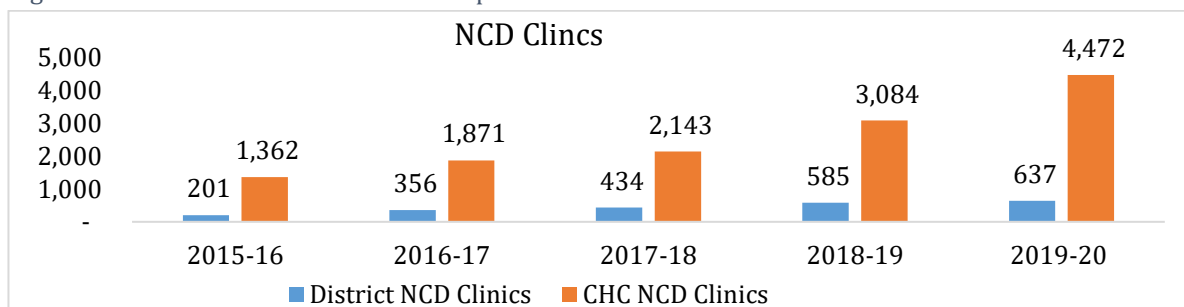
Source: MoHFW Annual report 2019-20

Table 3-27: Increase in NCD facilities

Type of facility	Status till 2013-14	Status till 2019-20
State NCD Cells	21	36
District NCD Cells	96	665
Cardiac Care Units	61	181
District Day Care Centres	38	218

Source: MoHFW

The screening services under NPCDCS have experienced a significant growth with total number of people screened increasing over the years. The graph below shows the rise in the number of people who attended NCD Clinics and were screened for NPCDCS. There has been an increase in the number of people screened over last year by 117.74%, 73.8%, 107.67% and 40.23% for the years 2015-16, 2016-17, 2017-18 and 2018-19 respectively. (Figure 3-66).

Figure 3-66 : No. of persons screened under NPCDCS
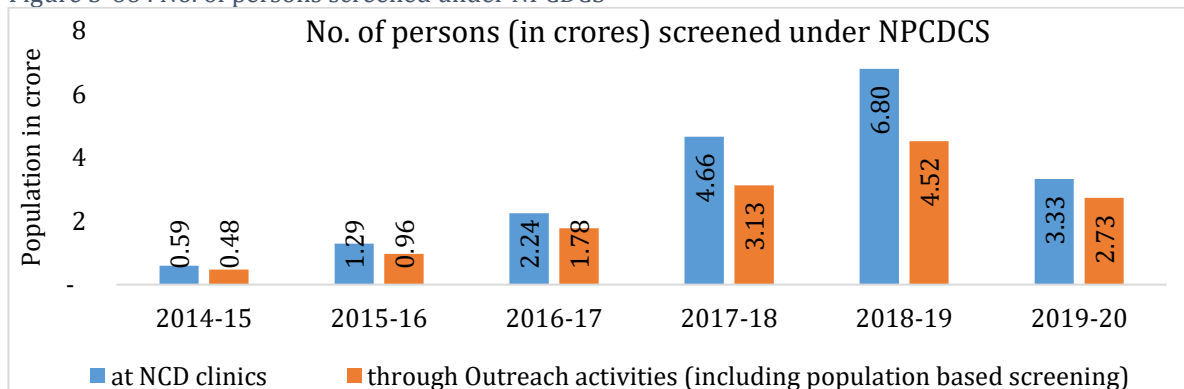
Source: MoHFW Annual report 2019-20

Among the selected states, Himachal Pradesh & Uttar Pradesh had the highest prevalence of Chronic disease (such as Cancer, Diabetes, Hypertension, Heart Diseases, Respiratory diseases), with 40% & 24% respectively (EY Primary Analysis Household Survey, 2019). Among the selected

Figure 3-67: Facility where screening done for chronic diseases
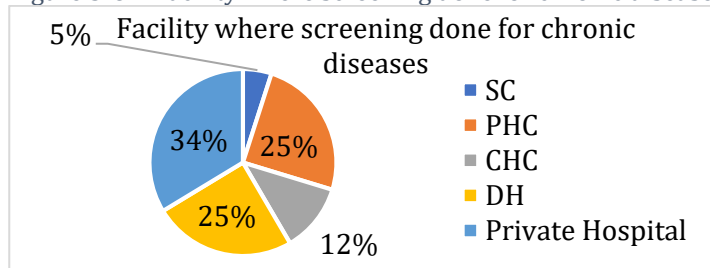
Source: EY Primary Analysis: Household Survey, 2019

states, Uttar Pradesh & Himachal Pradesh had the highest percentage of people, 81% & 80%

respectively, who got screened at a government health facility (SC, PHC, CHC & DH). Maharashtra & Rajasthan were the states in which a majority of the people, 100% & 80% respectively, got screened at a private hospital. There were no instances of respondents who got screened at VHSND (EY Primary Analysis: Household Survey, 2019). Several activities are taken up under the NPCDCS Program to increase the outreach of the program for prevention and management of NCDs.

Integration of AYUSH with NPCDCS is being run on a pilot basis in 8 districts, through which 13,64,781 people have been screened and 7,768 awareness camps organized as on 31.01.2019. Integration with NUHM has been undertaken especially in the urban slums.

Studies on surveillance and monitoring of burden of NCDs and Survey on prevalence of risk factors of NCDs have been completed with the Indian Council of Medical Research.

An App called m-Diabetes is being implemented and integrated with the national software for delivery of NCD services under Comprehensive Primary Health Centre (CPHC).

STEMI PROTOCOL for ST elevation MI (STEMI) Myocardial Infarctions has been implemented to provide timely intervention in critical cases. Tamil Nadu and Goa have implemented the Protocol while financial assistance has been approved for Assam, Chhattisgarh, Goa, Gujarat, Jharkhand, Karnataka, Madhya Pradesh, Maharashtra, Nagaland, Punjab, Telangana and Uttar Pradesh.

Population based prevention and control, screening and management initiative for common NCDs (PBS) (Diabetes, Hypertension and cancer viz. Oral, Breast and Cervical Cancer) is being implemented in 219 districts, targeting persons more than 30 years of age. Services are being provided through ASHA and ANM and referral support is being ensured through PHC, CHC, District Hospitals and tertiary care institutions.

Universal Screening has been rolled out in 24,016 SCs and till 31.12.2018, more than 1.08 crore people have been screened. For the effective implementation of PBS, a Software has also been developed in collaboration with CSR initiative of M/s. Dell India & Tata Trusts.

Social media, radio and TV channels have been utilised for creating awareness about common risk factors of NCDs and their prevention and control; and promotion of healthy lifestyle across the country.

Key achievements under the program:

- Pilot project on 'Integration of AYUSH with NPCDCS' has been implemented in 8 districts of the country. AYUSH facilities and methodologies have been integrated with NPCDCS services for prevention and management of common NCDs, wherein the practice of Yoga has been an integral part of the intervention. 17,71,749 person have been screened so far and 10,115 awareness camps have been organized upto September 30, 2019 (Ministry of Health and Family Welfare, 2020).

- "National Framework for Joint Tuberculosis- Diabetes Collaborative Activities" has been developed to articulate a national strategy for 'bi-directional screening', early detection and better management of Tuberculosis and Diabetes co-morbidities (Ministry of Health and Family Welfare, 2020).

- National Multisectoral Action Plan (NMAP) has been developed in consultation with 39 departments of Union Government and other stakeholders for prevention and control of NCDs. The plan offers a road map and menu of policy options to guide multisectoral efforts

towards attaining the NCD targets mentioned in the NHP-2017 and National NCD Monitoring Framework. An Inter-Ministerial Committee (IMC), to coordinate the multisectoral actions has been setup. Series of meetings including of IMC have been conducted so far.

Case Study 21 - Countrywide Integrated Noncommunicable Disease Intervention (CINDI) program in Bulgaria

Introduction

Countrywide Integrated Noncommunicable Disease Intervention (CINDI) Bulgaria is a WHO coordinated initiative that aims at preventing major non-communicable diseases. The program combines activities for disease prevention and health promotion, in line with the new public health achievements of medicine. The program targets population of working age (25-64), including groups at high risk for certain diseases. In 2004 the child component of the program was introduced – "Healthy Children in Healthy Families".

Key Stakeholders

o Ministry of Health
o Working-age population and children
o Other partners involved are: Municipality and the Municipal Council; Regional Health Inspections, Regional Health Insurance Fund, hospitals, medical and diagnostic consultative centres, dispensaries, media, NGOs, schools and kindergartens, companies, unions, clubs, youth homes, pharmaceutical companies, police, traders, manufacturers etc.

Implementation of the practice

- The objective of the program is to improve health by reducing mortality and morbidity from the major non-communicable diseases (cardiovascular, cancer, chronic respiratory diseases and others) through integrated collaborative interventions that prevent disease and promote health.

- CINDI also aims to reduce the risk of non-communicable diseases by reducing common risk factors, such as smoking, alcohol abuse, physical inactivity and unhealthy nutrition.

- Health education of the population to control the main risk factors for NCDs and health

- Capacity-building among medical specialists and program partners

- Participation of communities and institutions in program activities

- Development of guiding principles and guidelines of good practice for the professionals and partners

- Extensive IEC- campaigns, television and radio shows, publications in newspapers; conferences, lectures, seminars, consultations; health education materials, etc.

- Health education activities in CINDI zones were also directed to specific groups - ethnic minorities and disabled people. For example, for blind and people with residual vision, clubs with an exercise bike, treadmill and steppe were provided, whereas for people with chronic non-communicable conditions support groups were developed. Free medical examinations, consultations and training on healthy nutrition, physical activity, hygiene, etc. are also provided.

- The management of the program is carried out at the central and local level. There are Programme councils, working groups on issues, public health coalitions. The program is implemented at the local level and relies on local funding from the Ministry of Health. Also, the municipal council provides funds annually and further sources of funding are also used (communities, NGOs).

- On the national level the program was funded by the Ministry of Health and on the local level - by different communities and NGOs.

Result

The conducted monitoring demonstrated positive change in the population's behaviour on health for the 10-year program period established by the reduced levels of hypertension and cholesterol, the increased number of people with normal weight and the observed positive changes in nutrition. Overall, the mortality rates from major NCDs have decreased.

Main positive changes at a population level were:

- Decreased number of individuals who are carriers of two, three and four health risks (smoking, high cholesterol, hypertension, obesity, etc.)
- Decreased proportion of men with hypertension (by 6.2) as well as women (by 10)
- Reduced by 0.2 mmol/l the average levels of cholesterol, population levels of triglycerides - below 1.7 mmol/l
- Increased proportion of people with normal weight, slightly increased share of these with obesity, lower number of overweight individuals
- Positive changes in nutrition: almost every second individual consumes fish and chicken twice a week; reduced consumption of salt; increased consumption of fresh fruits and vegetables
- Smoking among men has decreased
- Alcohol abuse levels have reduced for men
- Overall, mortality rates from major diseases have reduced

Lessons Learnt

CINDI has proven an effective international model program for the prevention of chronic non-communicable diseases. The program combines activities for disease prevention and health promotion in line with the public health achievements of medicine. CINDI-Bulgaria managed to achieve positive results in the zones, with positive changes in the risk factors of health, with changes in the indicators of the health status of the population, which appear to be significantly higher results than the funds invested in the program.

Conclusion

The program was funded by the municipalities and the activities are carried out by teams of CINDI, with the support of many partner institutions and organizations, both at the central and local levels. The population actively participated in the activities and results demonstrated a positive change in population's health behaviour.

Further Readings:

Movsisyan, N. K., Vinciguerra, M., Medina-Inojosa, J. R., & Lopez-Jimenez, F. (2020). Cardiovascular Diseases in Central and Eastern Europe: A Call for More Surveillance and Evidence-Based Health Promotion. Annals of global health, 86(1).

Table 3-28: Output-Outcome Indicator -NPCDCS

National Program for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS)					
Outputs 🟢					
Output	Indicator	Target	Data	Source	Status
Additional 50 NCD-Clinics to be set up at District Hospitals.	NCD Clinics to be set up at District Hospitals.	Additional 50 NCD- Clinics to be set up at District Hospitals.	2015-16 – 293 2016-17 – 388 2017-18 – 495 2018-19 – 585 2019-20 – 637	NPCDCS Programme Data, MoHFW	Met
Additional 300 NCD clinics to be set up at CHCs.	NCD Clinics to be set up at CHCs.	Additional 300 NCD clinics to be set up at CHCs.	2015-16 – 1,587 2016-17 – 2,115 2017-18 – 2,519 2018-19 – 3,084 2019-20 – 4,472	NPCDCS Programme Data, MoHFW	Met
No. of Persons Screened for High blood pressure & High Blood Sugar - 10% increase over last year.	Screening for High Blood pressure & High Blood Sugar.	Screening for High blood pressure & High Blood Sugar - 10% increase over last year.	Number of screenings done at NCD clinics: 2015-16 – 1,29,00,368 2016-17 – 2,24,27,125 2017-18 – 4,65,75,176 2018-19 – 6,79,62,186 2019-20 – 6,60,95,757 No. of Persons Screened for NCD in PBS 2018-19 – 19,68,682 2019-20 – 1,10,93,571	NPCDCS Programme Data, MoHFW	Met
Outcomes 🔵					
Outcome	Indicator	Target	Data	Source	Status
10% Relative reduction in overall mortality from Cardiovascular diseases, cancer, diabetes, chronic respiratory diseases by 2020 (baseline of 2010) and proportion of known cases maintaining control status	Relative reduction in mortality. And proportion of known diabetic and hypertensive who continue to maintain control status	10% (y-o-y)	NCD date rate per 1,00,000 population- 2010- 622.7 2015- 600.8 2016- 597.5	Global Health Observatory (GHO) data, WHO[87]	Data for recent years not available

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[87] https://www.who.int/gho/ncd/mortality_morbidity/ncd_total/en/

Chapter 3: National Rural Health Mission

J. National Mental Health Program

Aligning the policies and laws of the country with the United Nations Convention on the Rights of Persons with Disabilities, the Government enacted the Mental Healthcare Act, 2017. Under the National Mental Health Program, the Government supports implementation of district level activities viz. District Mental Health Program, Mental Health services at CHC/PHC, Day Care Centres, Residential / long-term residential continuing care centres, Mental Health help line, Mental Health services and Public-Private Partnership model.

Key findings of the National Mental Health Survey conducted by MoHFW through NIMHANS, Bengaluru in 12 States (National Institute of Mental Health and Neuro Sciences, 2016)

 ➢ Common mental disorders (CMDs), including depression, anxiety disorders and substance use disorders affect nearly 10.6% of the population.
 ➢ 150 million people in India are in need of intervention for mental disorders.
 ➢ 1 in 20 person in the country currently suffers from depression out of which 39% suffer from Severe Depression
 ➢ 0.9 % of the population at high risk of suicide
 ➢ 3 out of 4 persons with mental disorders had
 ➢ disabilities affecting their work, family, education and other aspects of life.

- District Mental Health Program is responsible for detection, management and treatment of mental disorders/illness focusing on counselling in schools and colleges, work place stress management, life skills training, suicide prevention services and IEC activities for generation of awareness and removal of stigma associated with Mental Illness in the country.

- The Figure 3-68 shows the rise in number of districts with District Mental Health Program. So far, 692 districts have

Figure 3-68 : Number of districts with District Mental Health Program

Source: MoHFW Annual Reports

implemented the program. At the district level, funds upto INR 4 Lakh are provided to each district under DMHP for IEC and awareness generation activities.

- Day Care Centres provide rehabilitation and recovery services to persons with mental illness, enhance skills of the family/caregiver and provides opportunity for community living to people recovering from the illness. Financial aid of INR 6 lakhs per year is provided to Day Care Centres.

- Residential/Long Term Continuing Care Centres provide shelter to patients with chronic mental illness who are residents of mental hospitals. Such patients are taken through structured programs with the help of a multidisciplinary team consisting of psychologists, social workers, nurses, occupational therapists, vocational trainers and support staff. Financial aid of INR 9 lakhs per year is provided to Residential Centres.

- Under the District Mental Health Program, State/UT Governments can seek financial support for setting up of a 24-hour Mental Health Helpline for crisis management, information provision, and assistance on medico-legal cases.

- Mental health services provide support to mental hospitals/medical colleges to provide basic or advanced packages of mental health services. Financial aid of INR 15 lakhs per year is provided to each medical college/hospital/mental hospital.

- The State Governments have a provision of implementing mental health related activities in partnership with Non-Government Organizations/Agencies, for which INR 5 lakhs per NGO is provided as financial aid.

- There is a shortage of mental health professional i.e. psychiatrist, psychiatry social worker or psychologist in the country (Quarterly Review Meeting: NMHP, 2019).

- Through National Institute of Mental Health and Neurosciences (NIMHANS), Bangalore, Central Institute of Psychiatry (CIP), Ranchi and Lokopriya Gopinath Bordoloi Regional Institute of Mental Health (LGBRIMH), Tezpur, Assam, the government has established a Digital Academy conducting large scale training for service providers across the country to deliver mental healthcare services in the country.

- Through this method of Blended digital learning, NIMHANS, LGBRIMH & CIP are conducting large scale training for service providers. Status of trained professionals under the Digital Academy are discussed in Table 3-29.

Table 3-29: Status of trained professionals under the Digital Academy

Professionals	Candidates Enrolled			Total
	NIMHANS	**LGBRIMH**	**CIP**	
Medical Officers/ Doctors	1,644	21	120	**1,785**
Psychologists	864	56	18	**938**
Social Workers	633	29	6	**668**
Nurses	606	38	18	**662**
Total	**3,747**	**144**	**162**	**4,053**

Source: Quarterly Review Meeting: NMHP, 2019

Table 3-30: Output-Outcome Indicator- NMHP

National Mental Health Program					
Outputs					
Output	Indicator	Target	Data	Source	Status
Improved coverage of Mental Health Services.	Number of districts with a District Mental Health Program	630 districts by 2019-20	2015-16 – 241 2016-17 – 339 2017-18 – 517 2018-19 – 608 2019-20 - 655	MoHFW 2020	Met
	Number of District Mental Health Units operationalized	590 units by 2019-20	535 Districts	MoHFW, 2020	Unmet
Outcomes					
Outcome	Indicator	Target	Data	Source	Status
Improved coverage of Mental Health Services.	Increased registration of people with mental disorders at District Mental Health Units.	5% increase	26.26% increase	MoHFW, 2020	Met

Chapter 3: National Rural Health Mission

K. National Program for Control of Blindness and Visual Impairment (NPCBVI/NPCB)

The "Eye Health for All" strategy of NPCBVI focuses on delivery of comprehensive universal eye-care services. Under NPCBVI, free cataract surgeries, corneal transplants, free spectacle distribution and treatment and management of other eye diseases such as glaucoma, keratoplasty etc.

- In 2018-19, against a target of 66,00,000 cataract surgeries, 66,90,823 surgeries were performed, overachieving the target. Figure 3-69 shows the number of cataract surgeries performed in the past years.

Figure 3-69: Number of Cataract Operations performed
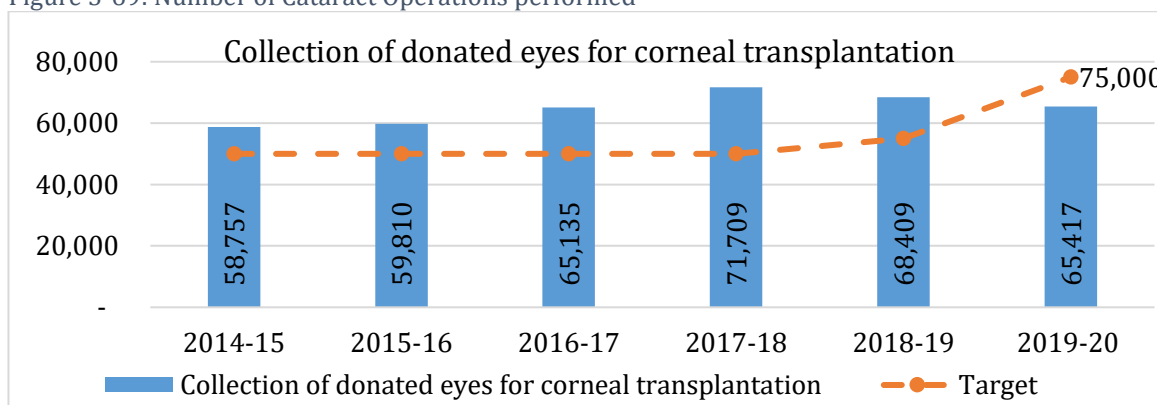
Source: MoHFW Annual report 2019-20

- Against a target of 55,000 corneal transplants, 68,409 transplants were done in the year 2018-19 (Figure 3-70). The achievement of corneal transplantation against a target of 50,000 in the past years has been represented in the graph below.

Figure 3-70: Number of donated eyes collected for corneal transplantation
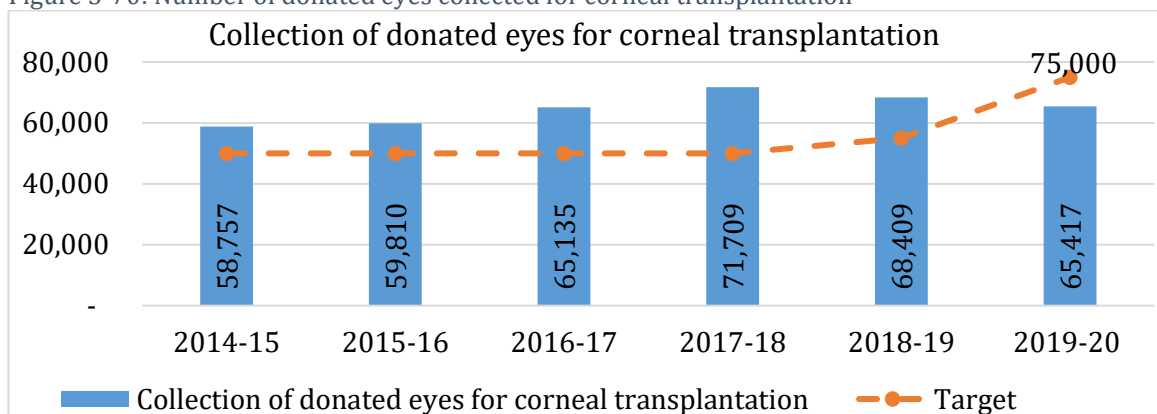
Source: MoHFW Annual report 2019-20

- Free spectacles are provided to school children suffering from refractive error under the School Eye Screening Program. The graph below shows number of free spectacles distributed to school children against a target of 9,00,000 (till 2018-19).

Figure 3-71: Number of free spectacles distributed to school children

Free spectacles distributed to school children
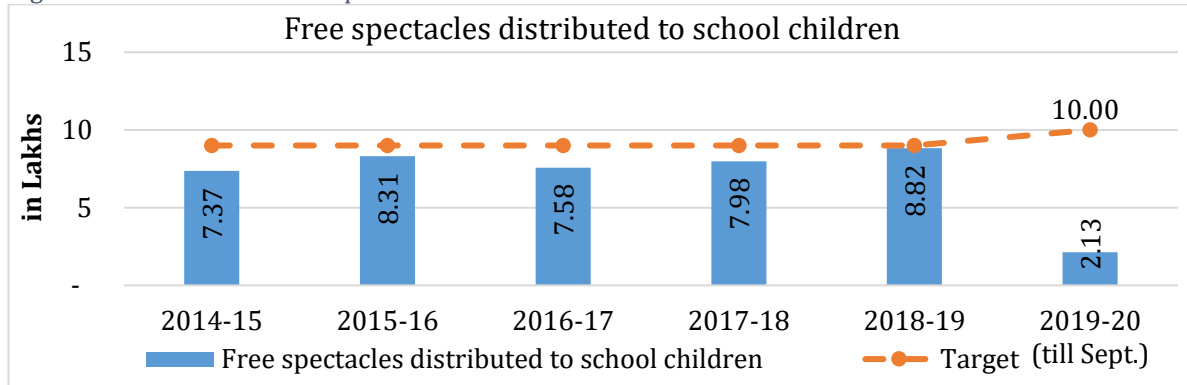
Source: MoHFW Annual Report 2019-20

- Special emphasis is given on the comprehensive eye care coverage by covering not just cataract but also other diseases like diabetic retinopathy, glaucoma, corneal transplantation, vitreoretinal surgery, treatment of childhood blindness including retinopathy of pre-maturity (ROP) etc. to eliminate avoidable blindness from the country. The graph below shows number of other eye diseases treated over the years against a target of 72,000.

Figure 3-72: Number of other eye diseases treated

Treatment/mgmt. of other eye diseases (Diabetic retinopathy, Glaucoma, Childhood blindness, Keratoplasty etc.)
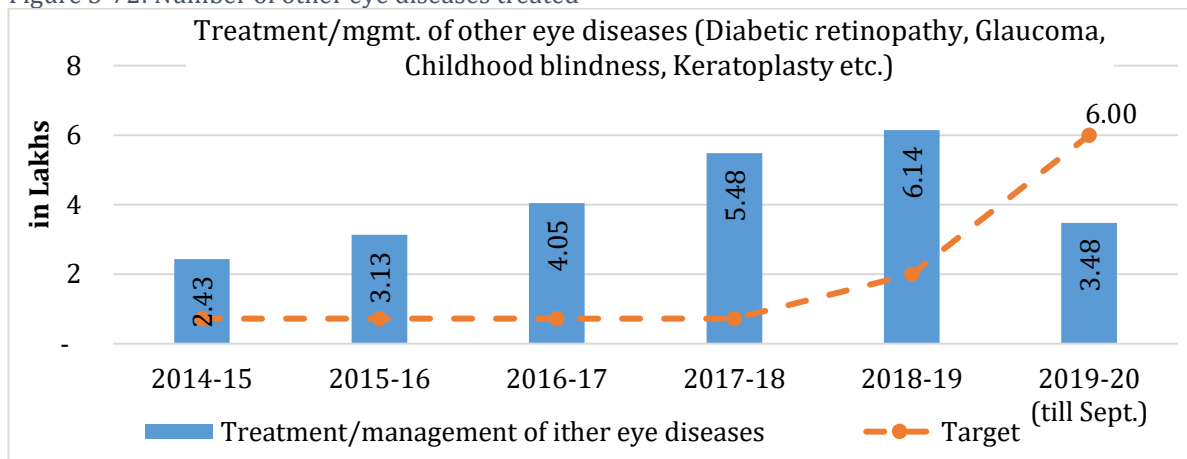
Source: MoHFW Annual Report 2019-20

- A study was conducted in Jorhat district to evaluate the cost-effectiveness of NPCBVI scheme through which it was found that 59% of the total expenses was spent on fixed head of which a major part was cataract surgery. It was concluded that the scheme is a cost-effective method of controlling and treating blindness (Laksar, 2015).

- Another study was conducted among medical and allied health workforce, engineering students and general public in a semi-urban area regarding the program. Almost half of the survey respondents were unaware of NPCBVI scheme and awareness about eye donation was about 75%. This suggests that utilization of the scheme can be increased by generating awareness and students can be involved in outreach programs (Sowmiya, Muthuramalingam & Ilango, 2018).

- The provision of providing free spectacles to the elderly suffering from presbyopia needs to be expedited in all the States.

- Innovations under NPCBVI- Initiating Diabetic Retinopathy Projects (at Karnataka, Tamil Nadu, West Bengal, Madhya Pradesh, Maharashtra etc). The objective of the project was to develop a model for capacity building at the government health facilities for screening,

diagnosis and management of diabetic retinopathy.

Case Study 22- Tamil Nadu Diabetic Retinopathy

Introduction:

The intervention aims to reduce the blindness caused due to diabetic retinopathy (DR). District level capacity at the government health system for effective screening, diagnosis and management (primary to tertiary) of diabetic retinopathy using technology were built. Arvind Eye Hospital (AEH) was partnered for the training of NCD nurses and doctors on treating diabetic retinopathy. The pilot project shows a widespread presence of DR.

Key Stakeholders

- Government of Tamil Nadu
- Arvind Eye Care System
- Public Health Foundation of India (for trainings and capacity building)

Implementation:

- The pilot model was implemented in Tirunelveli district at 5 CHC's and 13 PHC's
- *Training and Capacity:* Training of NCD staff, Government ophthalmologist and allied ophthalmic assistants, on relevant topics for DR screening and ophthalmic instrument handling was provided by Arvind Eye Hospital.
- *Patient's treatment flow:* Any patient with diabetes using that government health facility was screened for DR. NCD staff or nurses at that facility is in charge for the screening process, referral, and follow-ups.

Results

The project reveals the prevalence of DR among the registered population in 18 CHC/PHCs from five blocks in the Tirunelveli district where the project was implemented.

Lessons Learnt:

Patients follow-up were very low. Only 7% of them came for follow up check-up in one month NCD nurses were frequently transferred, so the training and capacity building had to re-done for the new staff

Conclusion:

This project harnesses the growth of technology and existing government health facilities to identify and treat the patient for diabetic retinopathy at district level. This scheme is easily scalable by training the existing workforce and establishing reading & grading centers at district level. Government of Tamil Nadu has planned to rollout the second phase in three other districts of Tamil Nadu with funding from Queen Elizabeth Diamond Jubilee Trust. AEH has been selected as training partner for the second phase as well.

Further Readings

http://www.nrhmtn.gov.in/gos/GoMsNo_47_19.pdf
http://www.ijo.in/article.asp?issn=03014738;year=2020;volume=68;issue=13;spage=78;epage=82;aulast=Ramakrishnan#ref7

- It has been observed that there are delays in NGO payments for performing cataract and treatment of other eye diseases, by District Programme Officers inspite of timely uploading

data in NPCBVI-MIS by the NGOs (EY Primary Analysis: KIIs, 2019).

- Many of the States do not have sanctioned posts of Ophthalmologists at district level (EY Primary Analysis: KIIs, 2019).

Table 3-31: Output-Outcome Indicator- National Program for Control of Blindness

National Program for Control of Blindness					
Outputs					
Output	Indicator	Target	Data	Source	Status
Eye care services under NPCB&VI provided at primary, secondary at District level and below level	Cataract Surgeries	66 Lakh Cataract Surgeries (2018-19)	2015-16 – 63,04,177 2016-17 – 64,81,435 2017-18 – 64,41,487 2018-19 – 66,90,823 2019-20 – 64,22,391	MoHFW	Met
	Collection of donated eyes for corneal transplantation operationalized	50,000 (2018-19)	2015-16 – 59,810 2016-17 – 65,135 2017-18 – 71,711 2018-19 – 68,409 2019-20 – 65,417	MoHFW	Met
Outcomes					
Outcome	Indicator	Target	Data	Source	Status
Reduction in cases of blindness due to cataract, refractive errors and other eye diseases including glaucoma by taking appropriate initiatives. Improvement in surgical skills and quality. Reduction of prevalence of blindness to 0.3% by 2020	Prevalence of blindness	Reduction of prevalence of blindness to 0.45%	0.36%	Blindness Survey (2015-18) report	Met

L. National Program for Health Care of Elderly

The National Program for Health Care of the Elderly aims to cover all the districts in the country by 31.03.2020. Geriatric services under NHM under Primary and Secondary care component are provided through District Hospitals (DH), Community Health Centers (CHC), Primary Health Centers (PHC) and Sub Centre/Health & Wellness Centers.

In 2019-20, 114 districts were sanctioned for implementation of program activities at district level, totalling 713 districts so far in the country. The physical progress of the program in terms of operationalization of institutions can be measured in terms of the geriatric services available:

Table 3-32: Physical progress under NPHCE

	Institutions operationalised	OPD	Indoor Wards	Physiotherapy services	Laboratory Services
1.	RGCs	18	16	14	13
2.	District Hospitals	525	463	414	494
3.	CHCs	1,936	-	920	1,735
4.	PHCs	5,368	-	-	-
5.	SCs providing screening of elder & home-based care & supportive appliances	10,954	-	-	-

Source: Annual Report MoHFW 2019-20

Chapter 3: National Rural Health Mission

Table 3-33: Total cases of Geriatric care service provided in 2019-20

S.No.	Services	RGCs	District Hospitals	CHCs	PHCs	SCs	Total
	Total cases of Geriatric care service provided in 2019-20						
1	OPD care services	1,33,545	75,67,744	70,16,670	90,32,922	28,43,211	**2,65,94,092**
2	In-door admissions	9,992	6,88,966	2,69,286	-	-	**9,68,244**
3	Physiotherapy care	34,637	7,54,186	7,44,964	-	-	**15,33,787**
4	Lab Tests	2,30,749	42,15,883	23,48,922	22,75,600	-	**90,71,154**
5	No of Elderly Screened & given Health card	-	5,99,908	7,19,021	5,26,754	2,73,850	**21,19,533**
6	No of Elderly Provided Home care services	-	11,157	92,657	68,674	68,783	**2,41,271**
7	No of Elderly Provided supportive devices	-	4,820	18,006	7,256	17,502	**47,584**
8	Cases referred	-	32,017	59,202	65,057	64,119	**2,20,395**
9	Cases died in hospitals	-	17,026	2,156	384	-	**19,566**

Source: Achievement of NPHCE 2019-20, 2020[88]

There has also been partial integration of NPHCE with National AYUSH Mission. In Chhattisgarh, wherever there is a co-location of AYUSH facility with an Elderly unit, both the services are being availed by the elderly whether it is inpatient care, or any other type of ambulatory service required;

Table 3-34: Output-Outcome Indicator- National Program for Health Care of Elderly

National Program for Health Care of Elderly					
Outputs 🟢					
Output	Indicator	Target	Data	Source	Status
Provision of primary and secondary Geriatric health care services at District Hospital and below	No. of District Hospitals with geriatrics OPD level services	425 (2019-20)	578 (2019-20)	Central Programme division, MoHFW, Report 2019-20	Met
	Number of DH with at least 10 beds reserved for elderly patients	425 (2019-20)	492 (2019-20)		Met
	Number of District Hospitals with physiotherapy services	425 (2019-20)	438 (2019-20)		Met
	Number of district hospitals with laboratory services	425 (2019-20)	524 (2019-20)		Met
	No of CHCs with geriatric OPD services	1200 (2019-20)	2,704 (2019-20)		Met
	No. of CHCs with geriatric physiotherapy services	1200 (2019-20)	974 (2019-20)		Unmet
Outcomes 🟢					
Outcome	Indicator	Target	Data	Source	Status
Number of geriatric patients provided treatment at District Hospitals and CHCs	Percentage increase in number of geriatric patients imparted geriatric OPD, Inpatient care, physiotherapy and laboratory services in district hospitals	10%	OPD – 95.19% increase Indoor – 108.54% increase Physiotherapy – 31.41% increase	Central Programme division, MoHFW, Report 2019-20	Met

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[88] https://nphce.nhp.gov.in/wp-content/uploads/2020/09/Achievment%20of%20NPHCE%202019-20.pdf ; last accessed on 27 September 2020

M. National Programme for Prevention and Control of Deafness (NPPCD)

Background

Hearing loss is the fourth leading cause for 'Years lived with Disability' (YLD), affecting 1.27 billion people globally (GBD study, 2016). WHO estimated that 63 million people in India are suffering from auditory impairment (MohFW, 2020). In India, the prevalence of deafness is 6.3%, affecting more than 80 million people. The most common cause is impacted wax, accounting for 15% cases, followed by CSOM (chronic infection of middle ear), responsible for 5.2% cases (EY Primary Analysis: KII, 2019).

Objectives

National Programme for Prevention and Control of Deafness was launched in 2006-07 with following objectives:
- To prevent the avoidable hearing loss on account of disease or injury
- Early identification, diagnosis and treatment of ear problems responsible for hearing loss and deafness
- To medically rehabilitate persons of all age groups, suffering with deafness
- To strengthen the existing inter-sectoral linkages for continuity of the rehabilitation program, for persons with deafness
- To develop institutional capacity for ear care services by providing support for equipment and material and training personnel

Strategies

- To strengthen the service delivery for ear care.
- To develop human resource for ear care services.
- To promote public awareness through appropriate and effective IEC strategies with special emphasis on prevention of deafness.
- To develop institutional capacity of the district hospitals, CHCs and PHCs selected under the Program.

Components

- Manpower Training & Development - for prevention, early identification and management of hearing impaired and deafness cases, training would be provided from medical college level specialists (ENT and Audiology) to grass root level workers
- Capacity building - for the district hospital, CHCs and PHC for ENT/Audiology infrastructure
- Service provision – Early detection and management of hearing and speech impaired cases and rehabilitation at different levels of health care delivery system
- Awareness generation through IEC/BCC activities – for early identification of hearing impaired, especially children so that timely management of such cases is possible and to remove the stigma attached to deafness.

Performance

- Till 2013-14, the funds used to be released to the State Health Societies. From 2014-15 onwards, release of funds is through the treasury route.
- In 2015-16, the program has been included in health system strengthening component of NHM.

Chapter 3: National Rural Health Mission

- Physical status for 2019-20 has been:

Total number of cases examined with deafness	4,75,769
Total number of ENT Surgeries performed	30,013
Total number of hearing aids fitted	23,889
Total number of people referred for rehabilitation	71,942

IEC Initiatives

- Radio channels like Fever FM, Radio Nasha and Radio One have committed to cover activities of the program.
- National Hearing Awareness Campaign- The campaign was inaugurated in March 2020. Various activities like awareness rally, quiz competition among the students, screening camps and gram sabhas at panchayat level have been organized for awareness generation among the public on hearing care/ preservation.
- Activities in the form of CMEs, lectures, plays, nukkad natak and various IEC activities in urban areas with the support of NGOs, local bodies, medical college etc.

Key Findings

- The physical status in 2019-20 for: total number of cases examined with deafness -4,75,769, total number of ENT Surgeries performed -30,013, total number of hearing aids fitted- 23,889, total number of people referred for rehabilitation- 71,942.
- IEC activities such as awareness campaigns, plays, radio communications etc for awareness generation among the public on hearing care/ preservation.

N. National Oral Health Programme (NOHP)

Background and Objectives

National Oral Health Programme (NOHP) is an initiative of the 12th Plan period launched in the year 2014-15 to strengthen the public health facilities of the country for an accessible, affordable & quality oral health care delivery. The objectives of NOHP are as under:

1. Improvement in the determinants of oral health e.g. healthy diet, oral hygiene improvement etc and to reduce disparity in oral health accessibility in rural & urban population.
2. Reduce morbidity from oral diseases by strengthening oral health services at Sub district/district hospital to start with.
3. Integrate oral health promotion and preventive services with general health care system and other sectors that influence oral health; namely various National Health Programs.
4. Promotion of Public Private Partnerships (PPP) for achieving public health goals

Components

The program has two components as under:

1. NHM Component

Support is provided to States to set up Dental Care Units at District Hospitals or below. Support is provided for the following components:
- Manpower support [Dentist, Dental Hygienist, Dental Assistant]
- Equipment including dental Chair
- Consumables for dental procedures
- Trainings
- IEC activities

States are advised to saturate their DHs with dental care units, followed by CHC and then PHC. With complete justification, the states also have the flexibility to request for mobile dental vans, dental specialist HR at the level of DH, dental laboratories and other dental specialty clinics.

2. Tertiary Component

For central level activities such as:

- Designing IEC materials like Posters, TV, Radio Spots, Training Modules
- Organizing national, regional nodal officers training program to enhance the program management skills, review the status of the program
- Preparing State/District level Trainers by conducting national, regional workshops to train the allied health functionaries associated in health care delivery
- Carrying out operational research in different aspects of health care delivery of the program through prominent academic institutions in the states.

The Center for Dental Education and Research at AIIMS, New Delhi was identified as the National Center of Excellence for implementation of NOHP in 2014-15. It provides technical inputs and advisory to the Ministry of Health and Family Welfare. On behalf of NOHP, CDER AIIMS, New Delhi develops oral health training manuals and IEC materials, conducts oral health trainings and informs policymaking.

Performance

Financial Performance

The funding pattern under NHM component is 60:40 for all states except the for Northeast and Hilly states, where Centre to State share is 90:10.

Table 3-35 : NOHP budgetary allocations

| | **NHM Component** | **Tertiary Component** | | |
	BE	BE/RE (in Cr)	AE (in Cr)	Utilisation with respect to BE
2015-16	Merged in Health System strengthening under Mission Flexi-pool	1.01	0.39	38.61%
2016-17	Merged in Health System strengthening under Mission Flexi-pool	1.01	0.92	91.09%
2017-18	Merged in Health System strengthening under Mission Flexi-pool	2.16	2.13	98.61%
2018-19	Merged in Health System strengthening under Mission Flexi-pool	11.17	9.36	83.79%
2019-20	Merged in Health System strengthening under Mission Flexi-pool	5.30	1.01	19.06%

Source: MoHWF, 2020

Physical Performance

- Under the NHM component, ~1,759 dental care units have been supported by NOHP across 35 states and UTs.
- NOHP has approved 703 dental care units across 36 states and UTs in 2019-20 (MoHFW, 2020)
- Establishment of TCCs in 301out of 313 Dental Colleges

Table 3-36: Physical progress under NOHP:

FY	Activities under NHM Component	Activities under Tertiary Component
2014-15	Funds released to 9 States/UTs for 13 dental care units	Grants released to CDER AIIMS to develop IEC, training modules
2015-16	Funds released to 28 States/ UTs for 95 dental care units	• Oral health posters sent to 10 States in multiple languages • On WOHD 2016, 5.37 Crore SMS sent in 10 States on oral health awareness • 2 National Workshops held for SNOs
2016-17	Funds released to 32 States/UTs for 185 dental care units	• Oral health posters sent to 14 States in many languages • In process for setting up National Level Referral and Research Institute for Higher Dental Studies • 1 National Review Workshop held for SNOs in January 2017 • IVRS portal on oral health launched on World Oral Health Day, 2017 – toll free number 1800-11-2032. • On World Oral Health Day, 2017, 685 patients were screened for oral health at a week-long camp at Nirman Bhawan • Oral health TV commercial, radio jingle and interactive games for school children launched on World Oral Health Day, 2017
2017-18	Funds released to 33 States/UTs for 471 dental care units. Total 764 dental care units have been approved.	• Oral health posters sent to 9 States in many languages • Pilot project on Pit & Fissure Sealants initiated with 12 dental Institutes pan-India with the aim to seal 53,750 molars. First training workshop was held on 1st May, 2017 at AIIMS, New Delhi • Hindi language added to the IVRS portal. • Oral health modules for school teachers and health workers released on World Oral Health Day 2018 • Week long AIR radio campaign on oral health aired on World Oral Health Day 2018 from 14th to 20th March 2018 • 3 Regional Review Meetings conducted for SNOs • AIIMS, New Delhi approved as the National Referral & Research Institute for higher Dental Studies (NaRRIDS) under NOHP
2018-19	Funds approved for 292 dental care units across 35 States and UTs	• "Operational Guidelines for Establishment of Tobacco Cessation Centers in Dental Colleges" released on World No Tobacco Day, 2018 • Three workshops for drafting a National Oral Health Policy held at MAIDS, New Delhi, PGIMER, Chandigarh and CDER AIIMS New Delhi • Initiated Pilot Interventional Project on Oral Health of Pregnant Women in collaboration with VMMC & Safdarjung Hospital • Initiated development of a website & mobile application for oral health in collaboration with CDER, AIIMS, New Delhi

FY	Activities under NHM Component	Activities under Tertiary Component
		• Held a Workshop on 25th Sept 2018 at Nirman Bhawan for Phasing Down Dental Amalgam in India under the Minamata Convention • 4 Regional Review Meetings for SNOs held for South, North, East and West Zones • IEC campaign held in cinema theatres in Hindi speaking states on oral health from 15th Feb to 1st March 2019 • Oral health training of AYUSH professionals held at CDER, AIIMS, New Delhi on 28th Feb 2019
2019-20	Funds approved for 703 dental care units across 35 States and UTs.	• Release of eDantSeva website and mobile application. • Release of Braille booklet and voice over for visually impaired people. • Release of IEC for pregnant mothers and infants. • Establishment of Tobacco Cessation Centres in 301 Dental Colleges out of 313 Colleges. • Initiated development of ToT manual to train Dental faculty for Tobacco Cessation Centre. • Initiated development of operational guidelines for phasing down Dental Amalgam. • Oral health training of Kendriya Vidalaya Teachers held at CDER, AIIMS, New Delhi in Septembe 2019 • Oral Health Innovation Conference held at CDER, AIIMS in September 2019.

Monitoring Framework

- Periodic meetings at national, regional & state level have been organized to review the status of program
- Central officials regularly visit the states/UTs to monitor the implementation of the program

Other Key Initiatives

1. National Oral Health Policy
   - The National Health Policy 2017 extends its support to oral health. In line with its vision, principles and policy thrust areas, the draft National Oral Health Policy is being drafted with the aim to extend affordable, accessible, quality oral health care services to the country's citizens.
   - Three stakeholders' workshops have been held in 2018-19 at Maulana Azad Institute of Dental Sciences New Delhi, PGIMER Chandigarh and CDER, AIIMS, New Delhi.
   - The Policy draft is currently under process for approval to disseminate to all other divisions within the Ministry.

2. Oral health trainings
   - Oral health manuals have been developed and released for school teachers and healthcare workers.
   - Oral health training of AYUSH professionals has been held at CDER, AIIMS, New Delhi in 2018-19.
   - Additional oral health trainings have also been planned for nurses, school teachers and healthcare workers in collaboration with CDER, AIIMS, New Delhi

3. Oral health awareness
   - TV commercial, radio jingle, posters and pamphlets for oral health have been developed and released.
   - States and UTs celebrate World Oral Health Day on an annual basis through community-based activities and treatment camps on 20th March every year.
   - Toll free National Dental and Oral Health IVRS Helpline developed and launched in English and Hindi (1800-11-2032).
   - eDantSeva, an interactive website and mobile application for oral health has been developed under NOHP in collaboration with CDER, AIIMS, New Delhi.
   - Braille booklet on Oral Health along with Voice Over and oral health posters for mothers and Infants have been developed under NOHP.

4. Tobacco Cessation Centers at Dental Colleges
   - Operational Guidelines developed and released on World No Tobacco Day 2018.
   - In process to develop training manuals to conduct training of dental colleges for Tobacco Cessation Centres in collaboration with Dental Council of India.

5. Pit and Fissure Sealant Pilot Project
   - Pit and Fissure Sealants are used to prevent dental caries in recently erupted teeth at risk of developing decay.
   - NOHP has initiated a school based, pilot project in collaboration with 12 dental colleges across the country to seal more than 50,000 molars in school children with the aim to prevent dental caries.
   - A preliminary analysis of the project is currently underway.

6. Establishment of a National Referral and Research Institute for higher Dental Studies (NaRRIDS) at AIIMS, New Delhi
   - To support and facilitate research in the field of oral health has been initiated.
   - One of the mandates of NaRRIDS is to conduct a National level Oral and Dental Disease Burden Survey. The planning of the same has been initiated.

7. Two-year Pilot Interventional Project on oral health of pregnant women at VMMC and Safdarjung Hospital.
   The objectives of the pilot interventional project are:
   - To screen pregnant females reporting for ante natal care at Safdarjang Hospital for finding out prevalence of periodontitis in such population
   - To implement periodontal intervention plan in 700 pregnant females infected with periodontitis
   - To compare the rate of preterm low birth weight in pregnant females with periodontitis and control population

8. Resource Centers for NOHP- In process to establish resource centers in the field of:
   - Oral Potentially Malignant Disorders at LHMC, New Delhi,
   - Tobacco Cessation and Oral Health at MAIDS, New Delhi
   - Oral health of children and elderly at PGIMER, Chandigarh.

9. Phasing down of mercury containing dental amalgam under the Minamata Convention. A stakeholder engagement workshop held at Nirman Bhawan in 2018-19. In process to develop Standard Operating Procedures and Operational Guidelines for the same.

Key Challenges

- Since oral diseases have negligible mortality there is differential priority towards oral health program among different states/UTs. The state administration doesn't give the program same importance compared to major programs like maternal & child health program, NPCDCS etc. There has been no uniformity in adoption and implementation of the program in different states. There is a need for guidelines from Centre regarding prioritising the implementation of Oral health program and integration with relevant national programs pertaining to prevention and promotion (EY Primary Analysis: KII, 2019).
- The fund disbursement pattern is skewed, since more than 60% of the funds are consumed by 3-4 good performing states. Other states generate a low demand and even lower absorption of the sanctioned funds (EY Primary Analysis: KII, 2019)
- National level data capturing regarding key indicators for NOHP is negligible since it is yet to be integrated with HMIS (EY Primary Analysis: KII, 2019)
- Need for mobile oral health care delivery facility for remote and inaccessible areas.

Key findings

- ~1,759 dental care units have been supported by NOHP
- Establishment of TCCs in 301 out of 313 Dental Colleges
- Oral health awareness through trainings, IEC etc.
- Lack of prioritization towards oral health program and need for integration with relevant national programs pertaining to prevention and promotion
- National level data capturing regarding key indicators for NOHP is negligible since it is yet to be integrated with HMIS

O. National Programme for Prevention and Control of Fluorosis (NPPCF)

Background

Fluorosis is caused by excess intake of fluoride mainly through drinking water. It results in major health disorders like Dental Fluorosis, Skeletal Fluorosis and Non-skeletal Fluorosis. To tackle the problem, Government of India launched the National Programme for Prevention and Control of Fluorosis (NPPCF) in 2008-09 as a health initiative under 11th Five Year Plan and has been expanded in a phased manner. From 2014-15 onwards, the NPPCF Programme has been brought under NRHM. As of April 2019, about 60 Lakh population in India are at risk of developing Fluorosis.

The programme adopts Fluorosis surveillance in the community; capacity building (Human Resource) in the form of training and manpower support; establishment of diagnostic facilities in the district; health education for prevention and control of fluorosis cases; management of fluorosis cases including supplementation, surgery and rehabilitation.

Objectives

The objectives of the program are as follows:

- To assess and use the baseline survey data of Fluorosis of the Department. of Drinking water & Sanitation;
- Comprehensive management of Fluorosis in the selected areas; and
- Capacity building for prevention, diagnosis and management of Fluorosis cases.

Chapter 3: National Rural Health Mission

Financial Performance

- The funds are allocated under the Health System Strengthening component of NRHM.
- The Centre to State ratio is 60:40 in 17 States provided in appendix 8 while that in 90:10 for Assam and J&K

Table 3-37 : NPPCF budgetary allocation and utilization

	BE	RE	AE	Utilization %
	(in INR Lakh)			(in respect of BE)
2015-16	6	1	0.8	14%
2016-17	6	6	5.0	83%
2017-18	6	126	7.9	133%
2018-19	123	100	61	50%
2019-20	50	50	Not Available	

Source: MoHFW, 2020

Physical Performance

- At present, 157 districts of 19 States have been covered under NPPCF Program. A year-on-year increased in districts covered in the study period is shown in Figure 3-73. A list of the States wise districts has been provided in appendix 8.

Figure 3-73: Number of districts covered under NPPCF Program since 2015-16
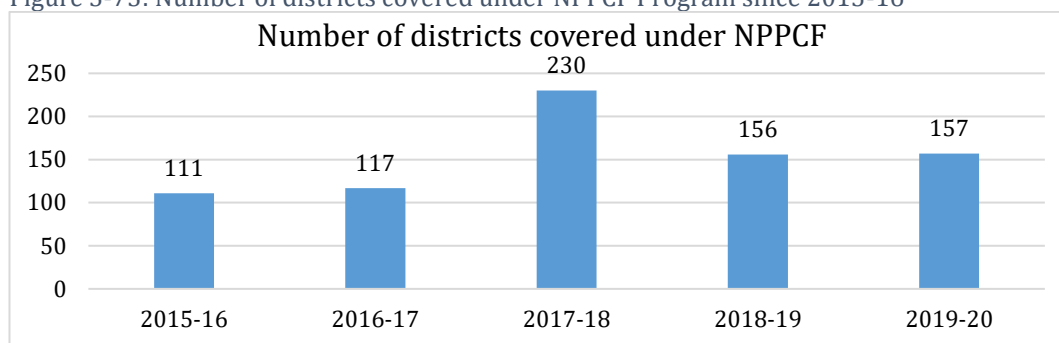
Source: MoHFW Annual Reports, 2015-16- 2019-20

- The prevalence of floride has reduced to 156 districts in 2018-19 leading to decrease in coverage in that year.
- Current floride prevalence is in 174 districts. The aim of the Program is to cover 166 districts in next 4 years (2023-24).
- District fluorosis labs have been established with procurement of ion meter in ~100 districts.
- National level training of trainers (State Nodal officers, District Nodal officers and District Consultants and District Lab Technicians) have regularly been conducted at N.I.N, Hyderabad.
- Implementing districts have also been:
  - Conducting regular trainings for medical officers, allied health staff, ASHA / Aganwadi workers, teachers, panchayati raj members, VHSNC members etc.
  - Undertaking surveys in schools & community in the Fluoride affected areas.
  - Carrying out water and urinary analysis for Fluoride levels
  - Conducting IEC activities and Coordination meetings.

- Fluorosis affected cases have been distributed Calcium, Vitamins and Minerals tablets.

Monitoring Framework

- Officers/ consultants from Nutrition & IDD Cell, Directorate General of Health Services (Dte. GHS) have been visiting all States implementing NPPCF for monitoring the Program activities.

Table 3-38: Monitoring Framework for NPPCF

Hierarchy of levels for monitoring	Frequency of monitoring	Medium of monitoring (dashboard / meeting)
Joint Secretary (in MoHFW)	Half-yearly/annual	• Program review meetings • Annual meeting
Additional DDG (in Dte. GHS)	Quarterly /annual	• Program review meetings • Annual meeting

- Review meeting cum capacity building workshops for State program officers from all the 19 States implementing NPPCF have been held regularly.
- To improve linkages and coordination with Department of Drinking Water and Sanitation, several meetings have been held between the two Departments

Initiatives and district level support under NPPCF

- Strengthening manpower in endemic districts by providing:
  o Consultant (1), Laboratory Technician (1), Field Investigators (3 for six months only)
- Purchase of laboratory equipment (including an Ion meter) for water and urinary analysis of Fluoride levels.
- Training of medical and allied health workers at various levels
- Supplementation with vitamins and minerals and treatment including reconstructive surgery and rehabilitation.

Table 3-39: Communication Framework for NPPCF

Medium	Frequency of usage	Key content
IPC	Regularly at PHC	Behaviour Change
Group Activities	Periodically at District Hospital	Attitude change
Mass Media	Regularly at State-Level	Knowledge change

- Health education and publicity- As part of the IEC strategy, posters and audio / video spots on prevention and control of fluorosis and arsenicosis have been circulated to the affected States from Central level.

Key Challenges

- Shortage of staff and funds for monitoring and regular review of the Program.
- The field investigators provided for first 6 months of initiation of Program in a new District are not sufficient since the survey work cannot be completed in 6 months' time, so, there is need to have at least one Field Investigator on a continuous basis for the entire year to conduct Survey work at the District level.
- Insufficient funds for regular trainings of health functionaries in the Districts implementing NPPCF, after the initial first year.

In order to address these challenges, the modifications have been granted approval by DGHS, Joint Secretary (concerned for NPPCF) and Internal Finance Division, MoHFW. After approval by Empowered Programme Committee (EPC) under chairpersonship of Secretary, MoHFW the proposals shall be submitted for approval by Mission Steering Group of NHM. The recommendations included creation of State Fluorosis Cell at each of the States implementing NPPCF Programme, provision of additional staff and funds to the State Programme Officer (NPPCF), inclusion of Districts having less than 10 Fluoride affected Habitations under NPPCF for conducting IEC and Training and others.

Chapter 3: National Rural Health Mission

Key Findings

- Program presence in 157 districts in 19 States in 2019-20
- 50% utilization of funds in 2018-19
- District fluorosis labs have been established in nearly 100 districts
- Shortage of staff and funds for monitoring and regular review of the Program
- Insufficient funds for regular trainings of health functionaries in the Districts implementing NPPCF, after the initial first year.

3.2.9 RESSI+E Framework Analysis

Table 3-40: Summary of evaluation of National Rural Health Mission based on REESI+E Framework

Theme	Remarks
Relevance	**+** All the objectives are still relevant and expected to remain relevant in the next decade. Targets may be redefined over a period of time **+** Reduction in child and maternal mortality – IMR declined from 58 in 2005 to 32 in 2018, MMR declined from 254 in 2004-06 to 113 in 2016-18. **+** Target IMR (25/1000 live births) and target MMR (100/1,00,000 live births) yet to be achieved. **+** Prevention and control of communicable and non-communicable diseases, including locally endemic diseases- while steady decline in incidence and mortality of communicable diseases is observed, the targets for most of the communicable disease are yet to be achieved, the increase in the NCD burden requires high focus and strengthening of NCD control programs. Strengthening of DH will be a major step towards it. **+** Access to integrated comprehensive primary health care- the introduction of HWC has been a positive initiative towards comprehensive primary health care. The pace of upgradation of facilities into HWC has to be increased. **+** Population stabilisation, gender and demographic balance- though progress has been made in this direction (reduced TFR and CBR), the objective is still valid in present context. **+** Revitalize local health traditions & mainstream AYUSH- NSSO reports that only 4.4% of ailments were treated by AYUSH. AYUSH mainstreaming and its high visibility through public awareness programs is therefore needed on continuous basis in future **+** Universal Health Coverage and access to essential services- The country still has high prevalence of maternal and child undernutrition, about 50 % pregnant women are anaemic and about 38 % of children under five are stunted (NFHS 4, 2016), with undesirable consequences in terms of high maternal and child mortalities and loss of productivity . NHM is India's principle vehicle to ensure Universal Health Coverage and access to essential services like immunisation, nutrition, emergency maternal and childcare and hygiene etc. which have shown positive impact and should be continued. **+** Promotion of healthy lifestyles- with the increasing NCD burden, especially in lifestyle diseases, this objective is still relevant in the present context.
Effectiveness	**+** Steady decline in mortality rates and improvements in other health outcomes **+** Strategies and tools have been quite effective as evident by – increased utilization of public health facilities and initiatives including JSY, LaQshya, SNCUs/NBCCs, MMUs, NQAS, community outreach sessions etc. **+** NHM has also been responding to the rising burden of non-communicable disease through NCD clinics and population-based screening through HWCs. But, the need of strengthening the same has been observed in the study. **–** Inadequate linkage for referral of patients identified through population-based screening for NCDs

Theme	Remarks
	− The improvement in the quality of the service delivery can be further enhanced through standard treatment protocols.
	− Targets for mortality rates and other health outcomes are yet to be met
Efficiency	+ Zero unspent balances left with states out of the central release since 2014-15
	+ Performance Based funding to States has been yielding positive results. Classification of States into five categories promote competitiveness(efficiency) amongst States while maintaining vertical equity (EY Primary Analysis).
	+ In order to have transparency & accountability, Public Financial Management System (PFMS) has been introduced leading to tracking of funds till the last mile (EY Primary Analysis)
	+ Introduction of Flexipool allows the States to utilise funds as per local health needs
	+ Increased utilisation of public health facilities
	− Frequency and quality of data reporting for output and outcome indicators.
Sustainability	+ Adopted a systems approach and encourages states to adopt innovative strategies for strengthening healthcare system towards increased sustainability.
	+ State share has been progressively increased. Since FY 2015-16, the funding pattern between GoI and the states has been reduced to 60:40 for all states except the North-eastern and three Himalayan states which is 90:10 which was earlier 75:25 for all states and 90:10 for NE and Himalayan states.
	− Technical capacity of State Directorates needs to be strengthened. Other aspects like recruitment and retention of HR at all levels also needs to be strengthened through initiatives like Public Health Management Cadre, HR Policy and linkage of medical education and public health service delivery needs to be comprehensively undertaken for a robust systems approach.
	− More time is needed by the states to own a complete financial responsibility
	− Also, some of the existing key risks/factors impacting sustainability of the mission are:
	− Sustained political willingness and commitment to assign high priority to the public health programs and higher budgetary allocation to health sector
	− Adaptation to needs of epidemiological disease and demographic transitions in the community.
Impact	+ Significant contribution towards SDG and NHP-2017 goals. IMR, U5MR, MMR have been reducing at a steady rate since inception of NHM.
	+ Use of technology has been scaled up e.g. m-health, telemedicine etc.
	+ Various initiatives have been scaled up to realize the NHM impact (through PPP):
	+ Engagement of private sector in disease control programs (especially TB)
	+ Introduction of free services like ambulance services, free drugs and diagnostics and urban healthcare services
	− DALYs from all causes (communicable and non-communicable diseases) remains high for India as compared to international benchmark
Equity	+ Free drugs, free diagnostics scheme, free dialysis and free transport services have specifically addressed the health needs of poor population
	+ State PIPs to address the local needs of vulnerable population and inclusion innovative health projects at local levels
	+ Government doctors are most preferred for consultation in case of illness specially for low HH Income levels and low education levels
	− Reporting of fund utilisation and outcome indicators for health under TSP and SCSP needs improvement
	− While there has been noticeable effort made on ensuring equity and social inclusion, there is still lot desired across the spectrum

Satisfactory	Average	Needs Improvement

Chapter 3: National Rural Health Mission

3.2.10 Cross Sectional Thematic Analysis

Table 3-41: Analysis of Cross-Sectional Themes for NRHM

Cross-Sectional Theme		Indicative Area of Enquiry	Key Questions	Remark
Accountability & Transparency	🟡	Availability of Data Records and Reports in public domain	Is data available for the scheme in public domain?	Yes. But quality and periodicity of data are big concerns
			What data records are available for the scheme in public domain?	✚ HMIS- health indicators; RHS- infrastructure details; NIKSHAY – Tuberculosis beneficiary data; Nikusht – Leprosy beneficiary data; CHC-NCD app; Cancer Registry etc. ✚ Data on key parameters for service delivery are available in HMIS and can be triangulated with data available from external surveys. The most important of these external surveys are the Sample Registration Survey (SRS), the District Level Household Survey (DLHS) and NFHS.
			What level of data is available in public domain National/State/District-level/Beneficiary level;	✚ National, State, District and beneficiary level data available ➖ Data quality and data integrity still remain areas of high focus.
			Is beneficiary-level data available? At what level?	✚ Beneficiary level data available in HMIS, nikshay, nikusht etc.
		Monitoring Mechanisms	What is the frequency of audits?	✚ NHM framework proposes a system of periodic concurrent audits and an annual audit.
			Has a social audit been conducted? When?	➖ No, • A need for Social audits in health sector have been identified. NHM framework also encourages social audits. • Data is not available on social audit conducted so far
			Does a robust monitoring mechanism exist and at what level?	✚ Yes, at National, State and District level. ✚ A major accountability mechanism is District Level Vigilance and Monitoring Committees (DLVMC) that function under the chairpersonship of the Member of Parliament (MP).
			What design aspects have been implemented for reduced leakages?	✚ Treasury system has been introduced to plug the leakages in fund flow ✚ Implementation of Public Financial Management System (PFMS) to track disbursal and utilization of funds

Cross-Sectional Theme		Indicative Area of Enquiry	Key Questions	Remark
		Evaluation Mechanisms	Process/Impact evaluation studies conducted in the last decade - Frequency, quality, coverage, Etc.	**+** Frequent evaluation studies conducted: • NRHM In 11th Five Year Plan (NHSRC) • Report on Analysis of Planning Process Under NRHM 2009 (NHSRC) • Evaluation study of NHM in 7 States, 2011 (Planning Commission) • Common Review mission started in 2007– 12 reviews conducted (Annually, with sample states covered) • Reports of High-Level Group on Health Sector available as inputs to 12th, 13th, 14th and 15th Finance Commissions. • Multilateral Organizations: World Bank, WHO etc • Central and State Agencies: NHSRC, NITI Aayog, ICMR etc. • Research and Academic Institutions: PFI, PGI, IIPH etc. • Other studies by Private Sector: ongoing evaluation by EY, IBEF etc.
		Citizen Accountability	Has a citizen charter been carefully drafted, adopted and publicized?	**+** CRM reports that in most states, the facilities displayed 'Citizen Charter'. - However, there is no uniformity in the Citizen Charters seen across facilities/ states.
			Are there functional grievance redressal mechanisms that successfully incorporate beneficiaries' and non-beneficiaries' concerns?	**+** Involvement of local government and community-based programs for planning and monitoring of health needs incorporating beneficiaries' and non-beneficiaries' concerns **+** 24×7 Toll free Helpline / Virtual Assistant (voice web) for authenticated health information developed by the National Health Portal (NHP) **+** Some form of grievance redressal mechanism has been established in all states except Rajasthan, Tripura, Telangana and Bihar (CRM, 2019). **−** Awareness and effectiveness of these mechanisms needs focus. **−** Only 44%, 23% and 29% of the surveyed DHs, CHCs and PHCs respectively, regularly collected patient feedback. 87%, 69% and 58% of the surveyed DHs, CHCs and PHCs respectively had a publicly displayed mechanism for complaints/grievance registration
			Is the RTI mechanism functioning effectively?	**+** Yes
		Financial Accountability	What funding mechanisms are being used?	NHM fund sharing pattern is 60:40 between Central Government and most of the States and UTs with Legislature (Delhi & Puducherry). For the States of Jammu &

Chapter 3: National Rural Health Mission

Cross-Sectional Theme		Indicative Area of Enquiry	Key Questions	Remark
				Kashmir, Himachal Pradesh, Uttarakhand and North-Eastern States including Sikkim, the sharing pattern is 90:10 between the Central Government and the States. For UTs without Legislature, funding pattern is of 100% Central Share.
				+ NHM funds flow through state treasury for better transparency and administrative control.
				+ Flexibility between different flexipools for fund utilisation for States to address local health needs has been introduced.
				+ Performance based funding to states has been yielding positive results in bringing equity and efficiency.
				+ Decentralised Planning and flexibility in funding is a best practice to be adopted by other sectors.
				+ Scheme is also subjected to CAG Audits
			Is DBT being used?	**+** Yes, For programs like NLEP, NTEP, JSY, ASHA etc. DBT mechanism is used for disbursement of incentives.
		Best Practice		**+** Fund allocations through flexipools allows the states to utilise funds as per their local health needs. This has been further discussed in Section 3.2.7.
				+ NHM has six financing components: (i) NRHM-RCH Flexipool, (ii) NUHM Flexipool, (iii) Flexible pool for Communicable disease, (iv) Flexible pool for Non communicable disease including Injury and Trauma, (v) Infrastructure Maintenance and (vi) Family Welfare Central Sector component.
				+ Within the broad national parameters and priorities, states have the flexibility to plan and implement state specific action plans. The state PIP includes key strategies, activities undertaken, budgetary requirements and key health outputs and outcomes.
Direct/ Indirect Employment Generation	🔵	Employment generation	What is the level of employment generation through schemes in the sector and overall sectoral contribution in National employment generation?	While the exact numbers for employment in health sector (especially in private sector) are difficult to estimate, the below statistics could be used as broad indicator: **+** From 2015 to 2018, a total of 8,963 doctors were given employment in DH (6,403), SDH (2,414) and PHCs (146). 9,909 health workers (female) in SCs,

Cross-Sectional Theme		Indicative Area of Enquiry	Key Questions	Remark
				PHCs and CHCs; and 30,706 allied healthcare staff in DH and SDH were given employment in the same period.
				+ With the increase in popularity of AYUSH, there is a steady rise in total number of registered AYUSH doctors in India from 744,563 in 2015 to 799,879 in 2018 (AYUSH in India, 2018).
				+ Total number of ANMs are 860,927; registered nurses and registered midwives are 2,048,979 in India till 2017 (National Health Profile, 2018). Further, there are 56,469 lady health visitors till 2017 and 1,125,222 pharmacists till March 2019 in India (National Health Profile, 2018).
				+ MoHFW has proposed transformation of 1,50,000 sub-centres and primary health centres into HWCs to be managed by newly created post of middle level care provider (designated as Community Health Officer). This will create job opportunities for nursing professional, AYUSH doctor, and other paraprofessionals.
				- Data is unavailable for non-clinical/administrative employment generated by the scheme.
			What is the proportion of Informal jobs converted into formal?	- Data unavailable
			What is the improvement in income levels?	- Data unavailable
			What is the improvement in availability of employment opportunities	- Data unavailable
			What is the women participation (%) in the Sector/Program	- Data unavailable
		Quantum of Self Employment, entrepreneurship generated	Is financial assistance provided through Mudra etc.?	Not applicable
			Quantum and kind of self-employment opportunities generated	Not applicable
Gender mainstreaming	🟠		Is there a specific mention of gender equality and equity considerations	+ Under NRHM, only RCH and family planning programs have gender specific considerations

Chapter 3: National Rural Health Mission

Cross-Sectional Theme		Indicative Area of Enquiry	Key Questions	Remark
		Inclusiveness in scheme design/planning	in the scheme guidelines/objectives, i.e. has the scheme been designed keeping gender considerations in mind?	− Changing societal norms and biases on gender issues requires continuous and concerted engagement with the community and multi-sectoral convergence. + Pre-Conception and Pre-Natal Diagnostic Techniques (PCPNDT) Act, 1994 has been enacted to stop female foeticides and the declining sex ratio in India. The act banned prenatal sex determination + Amendments in Medical Termination of Pregnancy Act
			Is gender budgeting being actively practised?	− Gender budgeting is not in practice for the scheme
			Are there any initiatives for the inclusion of transgender people?	+ Focused interventions are being implemented for the high-risk communities (MSM, Transgender, FSW, etc.) w.r.t HIV/AIDS control + NHP-17 envisages promotion of research on social determinants of health along with neglected health issues such as disability and transgender health
			Is gender disaggregated data available in terms of output (e.g. number of beneficiaries) or outcome/impact level?	+ Gender disaggregated data for only a very few health indicators is available in HMIS. However, gender disaggregated data is unavailable at various levels and is highlighted as a need.
		Gender-friendly infrastructure and policies	Are gender-friendly plans translating into greater empowerment of women in implementation?	− Data unavailable
			Are there women-friendly policies in place, like parental leave (maternity and paternity), crèches, flexible working hours, inclusion in decision-making etc.?	− Data unavailable
			Is there a gender wage gap, and any measures in place to mitigate the same?	− Data unavailable
			Are there sufficient safeguards to ensure a safe working environment	− Data unavailable

Cross-Sectional Theme		Indicative Area of Enquiry	Key Questions	Remark
			for women, including from physical injury, sexual harassment etc.?	
		Capacity Building	Is there any specific training offered for women to enhance job roles or assist career progression?	**+** ASHAs and ANMSs are given specific training in their work areas. **−** However, assistance in career progression is missing for ASHAs as they are contractual in nature.
			Are there sufficient awareness-raising communications or courses regarding women-friendly provisions/safeguards, sexual harassment policies, grievance redressal mechanisms etc.?	**−** Data unavailable
			Are there sessions/plans for sensitization of the work force on gender equality?	**−** Data unavailable
Climate change & sustainability including adoption of climate-change resilient practices & diversifications	🟢	Climate resilience	Is there a well-developed understanding of how climate change will affect the sector?	**−** Data unavailable
			Are appropriate climate resilient policies, for mitigation and/or adaptation, included in the scheme objectives and design?	**+** Yes, Bio-Medical Waste Management and Radiation Management from diagnostic equipment are well included in the design of NRHM.
			Are the planned design factors being successfully implemented?	**+** Yes, through compliance of BMW 2016 rules and AERB guidelines. Compliance of the AERB guidelines with specified safety requirements is important to ensure radiation safety for both, people operating these equipment as well as for the patients. In Uttar Pradesh, a project was initiated in 2016-17 for ensuring radiation safety compliance in all Radiological units of the state. Project is envisioned to get the real situational of compliance status and infrastructure conditions of all the State public health facilities with radiology equipment installed as per the AERB Compliance norms. Different project phases include: 1. Conduct safety regulations survey across all facilities (DHs & CHCs) to identify gaps from the AERB regulations 2. Upgrade the non-compliant installation in the facility as per AERB norms

Chapter 3: National Rural Health Mission

Cross-Sectional Theme		Indicative Area of Enquiry	Key Questions	Remark
				3. Issuance of AERB license for the facility The funds for the project are routed through NHM state PIP. The project has been distributed in 5 clusters (74 Districts, 479 Radiology Equipment). The states with AERB non-compliance could replicate this model through a tender program.
			Is there an appropriate disaster risk reduction plan in place?	Not applicable
		Sustainable Practices	Are there possibilities for circular economy development in the sector?	Not applicable
			Is there an appropriate/sufficient focus on diversification to reduce risk?	Not applicable
			Is there an effective waste management/ end-of-life system in place for resources used in the sector/schemes?	+ Yes, + Bio-Medical Waste Management Rules, 2016 Rules have been implemented to improve compliance and strengthen the implementation of environmentally sound management of biomedical waste in India. + The states need to undertake concerted efforts for disposal of Biomedical waste as per provisions of BMW Rules 2016 & subsequent amendments. Sub-optimal supply of the required consumables or knowledge, attitude & practice exhibited by staff for BMW management are the major bottlenecks. + AERB guidelines are to be strictly adhered to in the laboratories to ensure radiation safety of the operator and patient.
		Awareness and capacity building	Are there any training sessions held regularly for reducing pollution, adopting green practices, using local materials etc.?	+ Regular trainings related to BMW 2016 rules are conducted.
			Are the end beneficiaries aware of climate risks and possible individual mitigation/adaptation measures?	Not applicable
Social inclusion and Role of Tribal	🔵	Funds allocated under TSP/ SCSP and other	What is the fund allocated under TSP & SCSP the scheme?	RE 2018-19 (INR Cr) INR 5,632.23 Crore- SCSP; INR 2,930.19 Crore- TSP

Cross-Sectional Theme		Indicative Area of Enquiry	Key Questions	Remark
Sub-Plan (TSP) and Scheduled Caste Sub-Plan component of the scheme in mainstreaming of Tribal and Scheduled Caste population		provisions for vulnerable communities	What is the fund allocated under TSP & SCSP for each scheme in different states?	▬ Data unavailable
			How much of the fund been utilized overall and by each state?	▬ Data unavailable
			For what outputs has the fund been utilized?	▬ Data unavailable
			What has been the effect of the TSP & SCSP funds on improving equity?	▬ Data not available Direct mapping of utilisation of funds spent under TSP and SCSP plans with intended performance is not evaluated due to unavailability of data.
		Inclusion of vulnerable groups in scheme as well as sector	What are the interventions implemented for specific vulnerable groups?	**+** There is a section of the population who are not only poor, but also suffers from additional cause of vulnerability and marginalization. which includes the homeless, rag-pickers, trans-gender population etc. NHM framework ensures that these populations are adequately covered by NHM's social protection initiatives. Also discussed in Section 3.2.10
			What are the major challenges for inclusion?	▬ Data unavailable
			Are there any vulnerable groups not covered?	▬ Data unavailable
Use of IT/Technology in driving efficiency	🟡	Deployment of IT enabled mechanisms for monitoring of the Schemes	In case of a scheme to create physical assets, is geotagging and use of geotagged photographs being done?	**+** Yes, collected under National Health Resource Repository (NHRR) Project under CBHI.
			In case if the scheme intends to directly benefit an individual beneficiary or an enterprise or a collective, is JAM trinity and DBT being used?	**+** Yes, **+** For programs like NLEP, NTEP, JSY, ASHA etc.

Chapter 3: National Rural Health Mission

Cross-Sectional Theme		Indicative Area of Enquiry	Key Questions	Remark
			How is technology being used for on-ground data collection?	**+** Field workers like ANMs and ASHAs have been trained to digitally record beneficiary data for various databases such as HMIS, MCTS etc. mhealth
			Is there an online scheme MIS to ensure regular update of progress and effective supervision?	**+** Yes, HMIS
			What is the granularity of data available in MIS?	**+** It is quite granular for programs such as RCH and immunisation programs. However, there are no indicator reported for communicable and non-communicable disease control programs
			What is the frequency at which the information is being updated/reported on the MIS/Dashboard?	**+** HMIS dashboard is updated quarterly
			What are the benefits of, and challenges faced in implementation of MIS portals/ Apps?	**+** Accurate data reporting, integrity and standardisation have been identified as areas of improvement for HMIS. Use of HMIS data in planning health activities has to be emphasised to address local health needs.
			Are the IT-enabled mechanisms user friendly?	**+** Yes, **+** Capacity building of data collection and operating staff may further help
		Use of latest technology to improve efficiency and effectiveness of scheme implementation	What are the technologies being used in project implementation, service delivery?	**+** Telemedicine, teleradiology, teleconsultation, and tele-education are the recently launched IT mechanisms for better access to services.
			Which states are using the latest technologies?	Details on Interoperable health record, online services, telemedicine, DVDMS, other technological interventions have been discussed section 3.2.4
			How is technology adoption being encouraged?	**+** The guidelines encourage states to take up tele-health services to increase access in rural and marginalised areas.
Development, dissemination & adoption of innovative practices,	🟢	Fund allocation towards promotion of innovation	What percent of total allocation is directed towards development, dissemination and adoption of innovative practices and technology?	**-** Data Unavailable

Cross-Sectional Theme		Indicative Area of Enquiry	Key Questions	Remark
technology & know-how		Contribution of improved practices in increasing outcomes	What is the status of acceptance of innovative practices and technologies amongst the target beneficiaries? What are the possible challenges faced hindering acceptance of the same?	**+** NHM National Summit on Good and Replicable Practices and Innovations in Public Healthcare Systems in India is a platform for sharing of innovations supported by the NHM; **+** National Health Innovation Portal (NHiNP) represents the MoHFW efforts towards identifying and nurturing good practices and innovations.
Stakeholder and Beneficiary behavioural change	🟠	Fund Allocation	What percent of total allocation is directed towards Awareness generation or sensitization? What is the utilization rate? and How much impact has it been able to generate in terms of behaviour change?	**–** Separate budget allocation for IEC activities is not available
		Mechanisms to promote and ensure behaviour change	What are the existing mechanisms at State/District/Block level to promote beneficiary awareness and sensitization?	**+** Community outreach activities such as Monthly antenatal check-up days, Immunisation camps, ASHAs, VHSNDs, MMUs etc. **+** Counselling and guidance sessions for adolescent girls on menstrual hygiene and eligible couples on family planning are implemented under the program. **–** Majority of the people (67%) were unaware about the grievance mechanisms available at public health facilities. This information needs to be clearly communicated & displayed.
			What activities are undertaken at District/Block level to promote adoption of good practices?	**+** IEC/BCC activities under NHM have been described in detail in 'IEC/ BCC/ outreach activities and community interventions' section of sub chapter 1.2.1
Research & Development	⚪	Fund Allocation	What percentage of total allocation is directed towards R&D? How much of that percent is being utilized?	Not Applicable
		Institutes and departments dedicated for R&D	What is status of availability of any Institute or centre or department dedicated for R&D in the Sector?	For policy research and development of frameworks and guidelines: **+** National Health Systems Resource Centre (NHSRC) acts as the apex institution for technical assistance and evidence-based policy/strategy development and State Health Systems Resource Centre (SHSRC) provides additional technical support to the State's Department of Health and Family Welfare.

Chapter 3: National Rural Health Mission

Cross-Sectional Theme		Indicative Area of Enquiry	Key Questions	Remark
				+ The National Institute of Health and Family Welfare (NIHFW) acts as an 'apex technical institute' as well as a 'think tank' for the promotion of health and family welfare programs in the country. Further discussed in detail in Section 3.2.2
		Private Sector involved in R&D	What is the percentage of private sector participation in R&D?	Not Applicable
Unlocking Synergies with other Government Programs	🟠	Convergence (Inter-Ministerial/ Inter-Departmental/Financial/ Human Resource/Administrative/ Institutional/ Schemes)	What are the existing mechanisms to ensure convergence across Schemes, Departments at different levels (i.e. National/State/ District/Block)?	**+** Convergence with different ministries/department have been observed to be functioning well under NHM programs. Convergence discussed in detail in Section 3.2.2
			What activities are undertaken to ensure convergence at community level? Are there any Action Plans prepared at State/District/Block level to ensure the same?	**+** For finalising District Health Action Plans a meeting is held with stakeholders of various departments such as WCD, urban development etc. ensuring convergence at various ministries at ground level. Convergence discussed in detail in Section 3.2.2
Reforms, Regulations	🟢	Adoption of models acts and reforms at governance, institutional and administrative level	What are the acts/rules/regulations adopted at different levels (National/State/District)?	**+** As discussed under cross sectional themes at Sector Level including PNCDT Act- to stop female foeticides; MTP- allows for termination of pregnancy up to 20 weeks of pregnancy; clinical establishment act 2010 etc.
			What are the challenges faced in effective implementation of the Model Acts and Regulations?	**–** 100% compliance of the above mention acts/rules is still desired.
Impact on and role of private sector, community/ collectives/ cooperatives and civil	🟠	Private Sector Participation	What is the percentage of private investment in the clusters/ programs run by the government?	**–** Data unavailable
			What incentives are available to promote private investments in the Sector?	**+** Different PPP models have been developed for undertaking projects such as promotion of high-end diagnostic services in medical colleges and establishment of regional diagnostic centers through PPP, telemedicine, MMUs, 108 & 102 Ambulance services and promoting easy availability of generic drugs in shops etc.

Cross-Sectional Theme		Indicative Area of Enquiry	Key Questions	Remark
society in the scheme			How Private sector can help in improving value chain creation?	**+** Private sector can play an important role through – • increasing access to healthcare services in underserved regions. • Support through bringing in latest technology (such as telemedicine). • Capacity augmentation of public health sector • Involvement of NGOs and other civil bodies has proven to be successful and can further support better healthcare service delivery in the future.
			What are the challenges faced in attracting private sector participation?	**+** Low incentives and un-attractive terms and conditions are key challenges for private sector players to participate and invest.
		Public-Private Partnership	What provisions/incentives are existing to promote PPP in the Sector?	**+** NHM Framework has a provision for partnership with private service providers to supplement governmental efforts in underserved and vulnerable areas for deliveries, family planning services and diagnostics, etc.

⬤	Satisfactory	⬤	Average	⬤	Needs improvement	⬤	Not relevant/ applicable	⬤	Data unavailable

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Case Study 23- Mahila Master Health Check-up (MMHC) – Andhra Pradesh

Introduction

Andhra Pradesh is one among the top states with a high prevalence of Non-Communicable diseases. Early-stage detection and treatment became necessary to minimize the mortality and morbidity caused by NCDs. Further, in order to reduce the inequality in healthcare services for women in rural and urban areas, the state government decided to make use of technologies such as cloud and data analytics solutions for screening women above the age of 30 for non-communicable diseases.

Mahila Master Health Check-up (MMHC), a health care program for women of Andhra Pradesh was launched to improve the basic healthcare services for women. Under this program, over 6 million rural women between the age of 30 to 60 years were screened and referred for continuity of care

Key Stakeholders

Health, Medical & Family Welfare Department	• Implementing Agency • NCD Screening & Treatment covering **11,850** ANMs, **450+** doctors, **100+** Health Officials
Dell-EMC	• Technology Partner • Develop software solution for MMHC consisting of a tablet app for the health workers, web apps for the secondary level and tertiary level doctors and dashboards for the health officials
TATA Trusts	• Deployment Partner • Training & Capacity building

Implementation of the practice

Mahila Master Health check-up (MMHC), a health care program for the women of Andhra Pradesh, was inaugurated by the Health Department of Andhra Pradesh in collaboration with Dell-EMC as a technology partner and Tata Trusts as Deployment Partner.

This intervention has been implemented in more than 7000 health sub-centers across the state in the year 2016-17. Women between the age of 30 to 60 were screened for 7 health conditions, namely oral, breast and cervical cancers, hypertension, diabetes, hormonal disorders, and vision disorders.

MMHC Program Flow
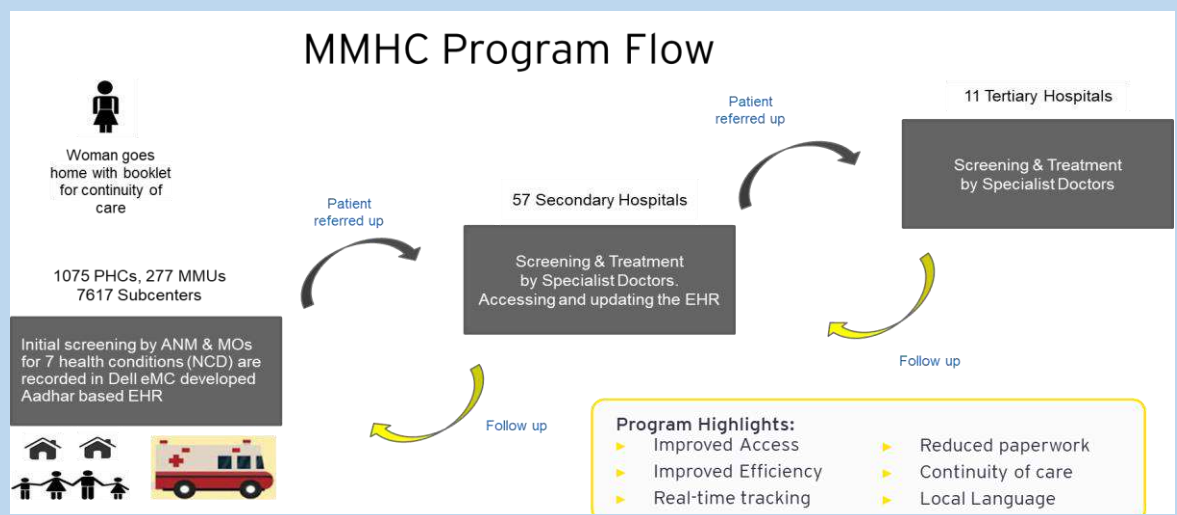
MMHC uses an integrated cloud-based software solution to improve efficiency and monitoring. 11850 Health workers, 350+ Doctors, were trained on the effective use of the application. The software technology is accessible through tablet applications for health workers, web apps for secondary and tertiary level doctors, and dashboards for health officials. Patient health records are created during screening are shared and tracked using the patients Aadhar card at primary, secondary, and tertiary levels. This ease of data sharing improves the quality of continuity care of the patient by increased the efficiency of health workers and doctors. Real-time tracking dashboards of the program enables the Health Department for improved administration and monitoring.

Image: Screen shot of Application used at PHCs
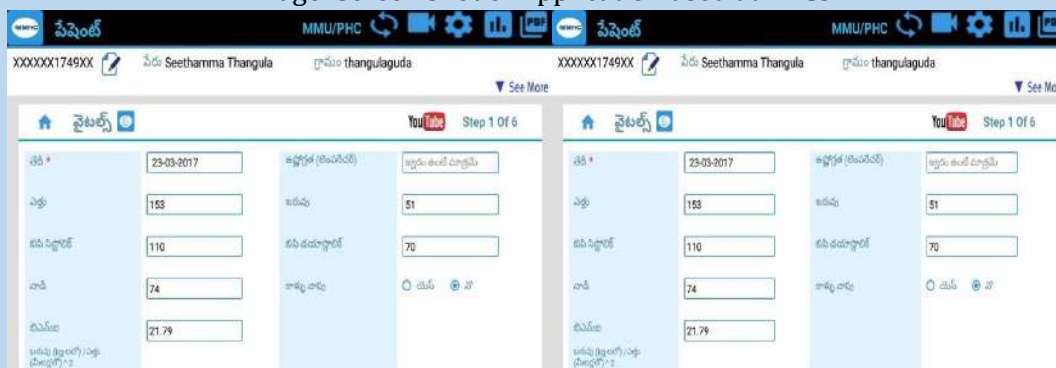
Results

Dashboard and Real-time data provided provides excellent value in the quality of services and tracking issues. User-friendly UI made in the local language made the application acceptable among the primary health care workers. Efficient screening and continuity are the major good outcome of this initiative. The initiative has led to increased value for all stakeholders:

Stakeholder	Benefits
Citizen – Improved Access	• Health records with Unique-ID
Health worker – Improved Efficiency	• NCD screening, enrolment, patient history. • Pictorial UI, Telugu, simple dashboard, help audio/video • Reduced paperwork. Intelligent Sync
Doctor – Improved Efficiency	• Comprehensive patient history • Easy management of patient info. Examination, lab tests, diagnosis, treatment and referral
Health Department – Improved Administration	• Real-time tracking of program progress with drill-down • Administrative monitoring of personnel performance
Policy Makers – Improved Coverage, Indicators	• Monitoring health indicators, performance • Improved planning, resource allocation

Lessons Learnt

Technology adaption by all health care workers is very critical. Tablets provided to ANMs had hardware, software, and connectivity related issues. Many ANMs didn't upgrade or sync the application regularly. This problem could have been rectified with additional training to ANMs.

Conclusion

Integrated data systems at all levels of healthcare services played a crucial role in improving the efficiency of health care workers, monitoring, and administration activities. Further, the data can also be used for policy creation, planning, resource allocation.

Further reading

http://www.nhmmp.gov.in/WebContent/IndoreSummit/Day%202/NCDs/MMHC%20for%20Indore.pptx

Case Study 24- Solar photovoltaic project at Yarrawonga Health

Introduction

Yarrawonga Health (Victoria, Australia) is Moira Shire's largest health service providing acute inpatient services, residential aged care and primary and community health services. The health centre reduced its carbon emission by installing 96 kilowatt photovoltaic solar array and demonstrated as a leader in environmental management within the local community.

Implementation of the practice

In 2013, Yarrawonga Health electricity cost had risen by approximately 60 percent than the previous year. Electricity is predominantly used for air conditioning, ventilation and lighting. In order to alleviate increasing energy costs, Yarrawonga Health with financial support from the Department of Health installed a 96 kilowatt photovoltaic solar array. In addition, the department supported Yarrawonga Health with an LED lighting replacement project that is currently being implemented.

Image: Photovoltaic solar array at Yarrawonga Health

Besides energy cost savings the system was chosen to reduce the organization's carbon emissions. The anticipated benefits from the solar array were annual savings of $25,000 to $30,000 and an annual reduction of ~200 tonnes in carbon emissions. The system consists of:

- 2 x 48 kW inverters
- 384 x 250 Watt solar panels
- cabling and racking, isolators and circuit breakers
- data logging and remote access, and
- safety access walkways and anchor lines.

The project was planned and facilitated by Yarrawonga Health with assistance from a structural and electrical engineer.

Results

Over the period 11 August 2013 to 31 January 2014 the project achieved the following outcomes, which suggest that the project will achieve the anticipated benefits:

- A reduction of 87,543 kWh of purchased electricity from the grid as compared to the same period in the year before
- Generated solar electricity of 83,311 kWh, averaging 13,885 kWh per month
- Cost savings of $14,163, averaging $2,360 per month, or about 15 percent reduction in electricity expenditure, and

- Carbon emission savings of 99.5 tonnes.

Additional electricity and carbon, and associated financial, savings are expected at Yarrawonga Health from the LED lighting project currently being implemented.

A related benefit from the project has been an ongoing organisational cultural change at Yarrawonga Health in relation to energy use. Staff have embraced the project and have a better understanding of energy efficiency and what they can do to reduce energy use.
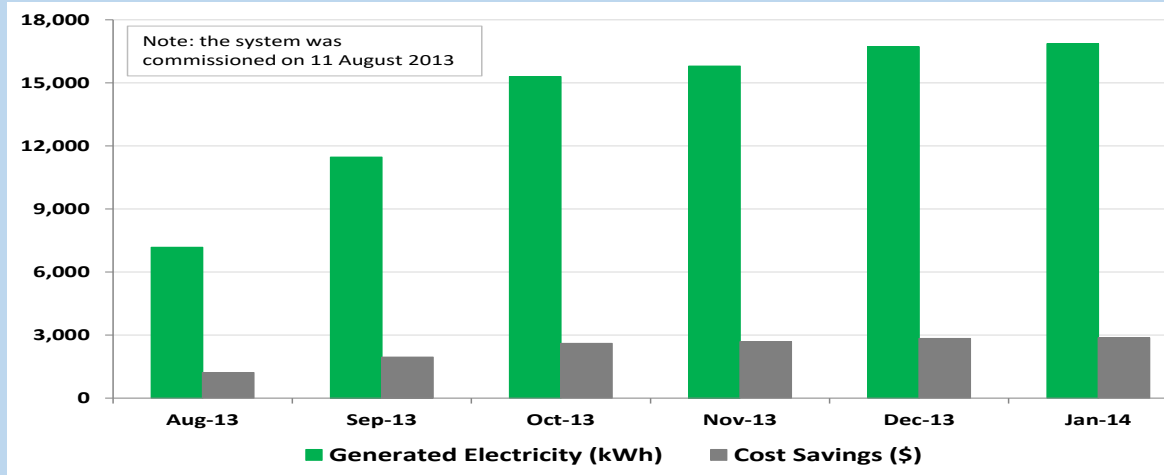
Image: Generated solar electricity and financial savings per month

Conclusion

In addition to the electricity, the solar panels on the roof serve as heat insulation to the building. The medical center also upgraded to energy-efficient LED lights which reduces energy consumption and carbon emissions into the atmosphere.

Best Practices on sustainable practices in public health facilities

1. Installing rooftop solar panels for energy resilience

Harborview Medical Center, Seattle has installed an ~100 kilowatt solar array on the roof of its West Hospital building, making it the most extensive system of its kind installed in a hospital. In addition to the electricity, the solar panels on the roof serve as heat insulation to the building. The medical center also upgraded to energy-efficient lights, fans, heating, and cooling system. These projects together reduced the medical center's carbon footprint by 155,394 pounds of CO_2, equivalent to 232,110 vehicle miles not driven.

2. Switching to reusable items from disposable items wherever possible, so it reduces wastage.

Switching to reusable sterilization containers, St. Cloud VA Healthcare System reduced waste by 7,350 pounds in the first three months. Initially created a list of total disposable items at healthcare centers, which can be reused through sterilization and compartmentalize these items according to the sterilization techniques and selected the items which are cost-efficient for sterilization cost.
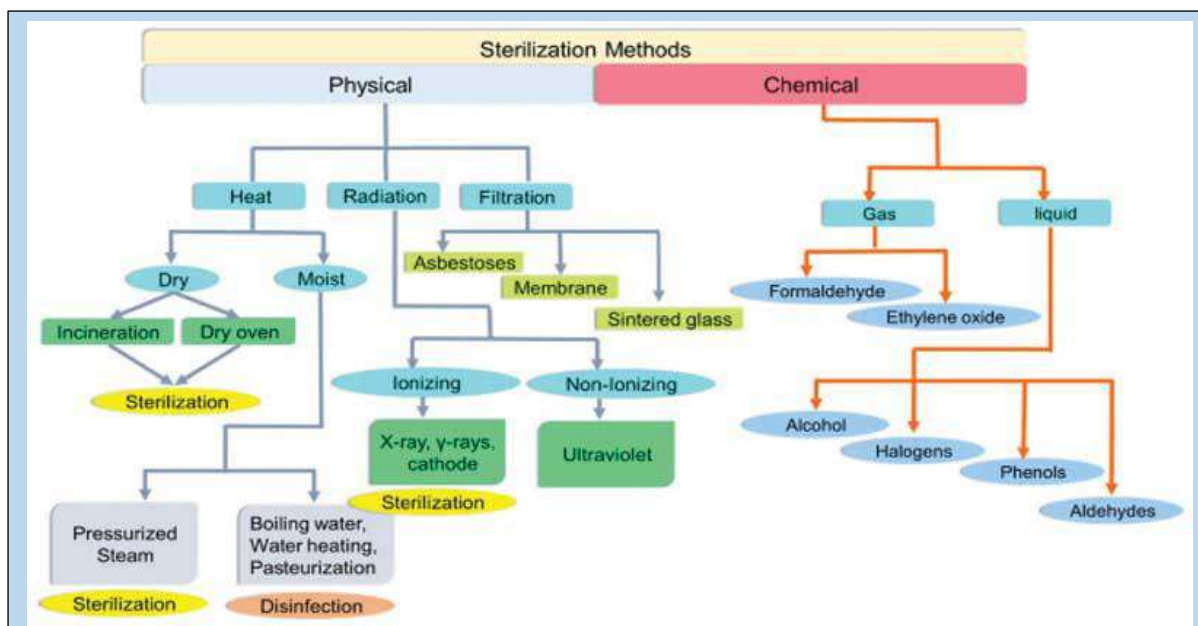
3. Rainwater harvesting system installation

Collecting the water from the rooftop and surface area of the building and redirecting it to the deep pit or cistern will help to recharge the groundwater level in the community of the located health center. Also, rainwater harvesting improves the building resilience through the reduced probability of flooding inside the building and additional water supply during firefighting

4. Changing hospital's green space into an on-site vegetable garden for the patients- Stony Brook University Hospital vegetable garden

Vegetable or edible gardens can be developed at outdoor landscapes of hospitals with pavements for walking and meditation. The harvested herbs, fruits, vegetables can be served to hospital patients. These edible gardens can be maintained with the same costs or with some little additional cost as viewing/walk-in gardens.

5. Use of Electric vehicles or alternate fuel vehicles inside the medical centers

James E. VanZandt VA Medical Center - Altoona, Penn, added 5,000 electric, hybrid, and alternative fuel vehicles to their fleets to reduce air pollution and greenhouse gas emissions

3.3 Issues & Challenges

Governance and Accountability

- Meetings held for preparation of District Health Action Plans have been sub-optimal due to lack of stakeholders' involvement and participation at the senior level (EY Primary Analysis: KIIs, 2019).

- Lack of coordination between State Health Mission and Directorate of Health Services has been observed in some states except for a few like Maharashtra, Tamil Nadu and Karnataka (EY Primary Analysis: KIIs, 2019); (IIPH & IIM-A, 2020).

- HRMIS database is not maintained/updated in most of the states. There is a need for common data sharing platform amongst different stakeholders (Directorate of Health Services, State Health Mission, State Health Society, Directorate of AYUSH) for information relating to recruitment, transfers and postings of health officials.

- Inadequate funding allocated towards monitoring & evaluation at State level which includes data reporting and documentation. The reporting required for data-based decision making and mid-course correction of implementation process needs more strengthening.

Core Health Outcomes

- It is reported that the percentage of second and higher order live births in a gap of 2-3 years (as against the recommended gap of 3 years) is increasing in rural areas.

- While NHM has contributed significantly to reduction of TFR in states with high TFR since 2005, the reduction has been insignificant since 2015.

- States with TFR more than 2.5 account for approximately 40% of India's population. This could be due to low awareness amongst males for participation in family planning. Low involvement of male health workers in IEC activities has been a reason for this.

- SNCUs and NBCUs are still not functional in many of the public health facilities. There is a strong need for linking institutional care with home-based care.

Health Facility Strengthening

- Percentage of total functional public health facilities operational as per IPHS norms remains to be very low. As per RHS 2019, only 3.4% SCs, 8.3% PHCs and 21.84% CHCs are functioning as per IPHS norms in rural areas.

- All CHCs are required to be 24×7 functioning facilities, but there is shortfall of 12.7% CHCs not functioning as 24×7. As on March 2019, there was a shortfall of 81.8% specialists in CHCs. Completely functional CHCs are few. This results in an increased pressure on the DHs.

- CPHC-NCD app has been developed to ensure follow up of screened patients for non-communicable diseases. Follow up reminders are sent to the mobile number of the patients. However, there is a need to further strengthen the follow up system.

- There has been an increasing trend for both- the in-position resources and the sanctioned posts, however, the increase is disproportionate. While an increasing trend in filling-up vacant posts for health workers is observed, shortage of specialists and mid-level health providers remains a concern towards delivering quality and continuum of services (RHS 2019, EY Analysis, 2019).

Chapter 3: National Rural Health Mission

Quality

- Proportion of public health facilities with accreditation certificates by a standard quality assurance program (NQAS/NABH/AHPI) remains low.
- Hospital Infection Surveillance and development and adherence to STPs is a concern in public health facilities.

Program Interventions

- Improved implementation of Free Drugs Service Initiative in terms of promoting use of generic drugs, conducting of prescription audits, developing anti-biotic policy for government hospitals, adherence to standard treatment guidelines and quality control of drugs needs to be done as per 44r3norms. Data pertaining to these parameters are not readily available for review.
- Inadequate follow up and continuity of maternal care. Only 74.4% of pregnant mothers received 4 ante-natal check-ups, 68.3% were registered in first trimester and only 60% of all registered antenatal cases had their deliveries conducted by skilled birth attendants.
- In case of home deliveries (6.4%), skilled birth attendant was available only in 18.6% cases.
- New born care and child immunisation coverage - Full immunisation coverage in under five children was only 59.2%.

Disease Control

- While screening of NCDs is being carried out at HWCs, there is a limited focus on NCD Clinics for case management.
- Diseases under NVBDCP like kala azar, leprosy and filariasis still fail to achieve their target prevalence despite efforts made by NHM.
- National Disease Control Programs (NTEP, NLEP, NVBDCP) have been less prominent with major focus on RCH.
- Disease control program for TB, Leprosy, Malaria are facing challenges in terms of human resources, information management, and technical supervision to achieve elimination targets.
- Non-Communicable Disease Control Program and National Mental Health Program need support in terms of case detection, setting up of the treatment clinics and follow up and public awareness and support-Population based screening for NCDs needs further improvement and NCD clinics below district hospitals are yet to be set up at many places.
- Public awareness regarding mental health program leaves much to be desired and there is an urgent need to address shortage of trained HR to provide mental health care.
- Beneficiary data is unavailable for National Mental Health Program.
- There is a social stigma regarding mental health which prevents people to come out and seek professional help.

Community Processes

- ASHAs need support in urban areas due to high work load and high attrition rate. ASHA trainings are not localized (Ministry of Health and Family Welfare, 2015).

- ASHAs have been reported to be overburdened.

- Support to ASHA (similar to ASHA facilitator in rural areas) is lacking in urban areas.

Financing

- Though the fund allocation for NHM has increased, there is still requirement to meet the threshold of 2.5% of GDP by 2025 as suggested by National Health Policy.

Accessibility

- While considerable progress has been made in last few years in improving access to health facilities and services in India, there still remains a need to focus on infrastructure (both physical and human resource) as per the prescribed norms (both Indian and International standards).

- The average radial distance from the community covered for Sub Centres, Primary Health Centres and Community Health Centres has been 2.46 km, 6.18 km and 13.35 km respectively. While the difficulty in physical reach to the health infrastructure has been decreasing, India is behind in terms of population-based requirement of sub-centres, PHCs and CHCs.

- There has been an asymmetry in access to health facilities between the rural and urban population.

- The National Ambulance Services of 102 and 108 are not optimally available in all the states as per the standard population norms, while some ambulances lack functioning critical equipment. Adequate availability of ambulance would increase accessibility of health facility.

Medical Education

- Due to absence of regulatory council, there was no record of para-medical professionals in a formal way.

Technology

- There are huge disparities in the data reported in HMIS and NFHS for same indicators measured across States and UTs. The data integrity of a State or UT also varies by the specific indicators evaluated. It was found that ineffective reporting and management of data could be key challenges in using the HMIS data.

- The MCTS monitoring Program has been observed to suffer from problems related to lack of appropriate training, poor internet connectivity, and frequent power failures.

- Implementation of a systematic Human Resource Management Information System (HRMIS) has either been delayed or only partially implemented (with only a few parameters entered in the system) in most of the states. This has made it difficult for states to maintain an accurate record of its workforce and its administration.

IEC

- TFR and NMR have found to be statistically different for rural and urban areas in all reported states indicating need for focussed efforts in family planning programs in rural areas.

3.4   Recommendations

Governance and Accountability

- District Health Action Plans should be reflecting the local health priorities, needs and better understanding of area wise disease burden. Increased involvement of community workers and district health officials/program managers should be ensured. States/UTs need to steer stakeholder involvement and engage with district and block leadership to make DHAP effective.

- NHM should develop guidelines, strategies and frameworks for integration between MD-NHM and directorate of health officials for implementation of NHM programs. States should develop strategies to build joint ownership and engagement for directorate and NHM. Also, NHM should have regular joint-reviews with directorate with respect to performance of NHM programs. The SHM should be integrated with directorate through regular deputation of employees from directorate to SPMU for technical support. This suggestion is in alignment with the suggestions proposed in Draft Report National Health Mission – Impact and Learnings for the future, 2019.

- HRMIS should be maintained and updated regularly by the States to ensure transparency and accountability between different stakeholders. Absenteeism of health officials should also be reported under HRMIS.

- Accurate data reporting and data integrity are identified as areas of improvement for HMIS. Capacity building for reporting mechanism using different interfaces and triangulation of data should be enhanced. Use of HMIS data in planning health activities has to be emphasised on to address local health needs. Creation of standardized statistical and narrative performance reports at State level may be encouraged for better bottom-up planning and data-based decision making. Directorate of Health Services officials may be involved in this.

Core Health Outcomes

- Male participation in family planning methods has been recognised as an important aspect under NHM. However, need for raising awareness and strengthening family planning programs to increase the percentage of second order births having an interval of more than the recommended period of 3 years.

- PRI should be involved in population stabilization programs. Male health workers should be hired for targeted outreach of family planning methods to the male population. Targeted policies/interventions for specific states with high population should be laid down.

- To further reduce IMR, operationalization of SNCU/NBCUs in district hospitals should be undertaken. Also, community involvement should be increased for discharged infants from SNCU/NBCUs follow-ups. Kangaroo mother care, exclusive breast-feeding and home-based care should be promoted.

Health Facility Strengthening

- Investment in infrastructure needs to be increased, which may be allocated from the additional budget (provided towards reaching the target of 2.5% of GDP by 2025). Efforts towards comprehensive primary health care such as system strengthening initiatives like increased uptake and upgradation of FRUs, SNCUs and 24×7 facilities along with upgradation

of HWCs can lead to sustainable positive impact. Investment focus in critical care areas and in such areas, which leads to OOPE needs to be increased.

- There is a need for strengthening of District Hospitals for 24×7 facilities, ICUs and HDUs.

- Linkage between health facilities for NCD screening, referral, and follow up compliance; and HWCs needs to be strengthened.

Quality

- Though the focus on quality of infrastructure and services has increased, more strengthening is required in the terms of implementing and ensuring quality norms in the facilities. The operation guideline states the quality assurance practices. These practices should be adopted.

- More focus should be given to Hospital Infection Surveillance and development and adherence to STPs.

- There is need for an increase in the number of drug testing labs with high-end equipment, supply of chemicals and adequate funds for infrastructure.

Disease Control

- For the programs for diseases under NVBDCP like kala azar, leprosy and filariasis to achieve their targets, implementation mechanism in line with initiatives undertaken for Tuberculosis program is recommended.

Community Processes

- Supervisory hand-holding structure for ASHAs to be linked with NHM.

- Since it has been observed that major part of the work performed by ASHAs is relating to data collection, data assimilation and integration through various platforms would reduce the ASHA burden. There is a need for increasing data integration b/w various departments and NHM programs.

- ASHA and ANM norms and functions can be revisited with regards to workload and service delivery to ensure quality.

- Dedicated support in the form of a public health manager/facilitator to lead and direct ASHAs can be provided in urban areas.

Financing

- Increase funding to meet the threshold of 2.5% of GDP by 2025 as suggested by National Health Policy. The funds may be utilized for strengthening of primary and secondary infrastructure.

- Program specific line items that exist in various sub-heads may be merged to increase flexibility in usage of funds. For instance, maternal health has 10 line items under service delivery budget head which can be merged as one sub-head to allow efficient usability of funds without denying service delivery or leaving funds unutilised.

- In PIPs, funding for certain items for a specific duration could be automated. An additional item could be included for any change in these items, if need be.

Chapter 3: National Rural Health Mission

Accessibility

- To encourage doctors to serve in rural/remote areas, states should be provided the flexibility to incentivize through extra credits to doctors with an experience of serving in rural areas during admission for PG courses.

- Ambulance services should be more robust, with improved administration in terms of ambulances not refusing services to patients and providing pick-up and drop services at the right location. Up-gradation of services, availability of trained allied healthcare staff and supplies, increased IEC and efficient monitoring mechanisms need to be ensured.

Medical Education

- There is a need to have a para-medical council at centre to regulate the sub-sector.

Technology

- Integration of multiple IT systems and databases into one for simplification and efficiency is required. Monitoring of quality of data reported needs to be ensured. Review and check systems can be introduced before data is uploaded on the system.

- Training of staff and ensuring internet and power connectivity can help in successful implementation and usage of MCTS.

- Implementation of a functional and effective HRMIS needs to be expedited across states. This should include work force management for both regular and contractual staff and training needs should also be integrated with HRMIS (as the Training Management Information System or TMIS).

- Ensuring continuity of care by establishing robust referral mechanisms and use of electronic health registers for patient records and linkages with CPHC-NCD application is required.

IEC

- Need for focussed awareness programs for family planning initiatives to address the higher TFR and NMR load in rural areas.

- NHM has performed satisfactory in generating awareness about different programs. However, with the ever changing influencers of IEC, strategy requires to be revisited periodically based upon its objectives, the targeted audience, cultural, social and political characteristics, and any facilitators or barriers that exists in a given situation.

Chapter 4: CSS- National Urban Health Mission

4. National Urban Health Mission

Section 4.1 provides background of the CSS-National Urban Health Mission detailing goals, objective, targets and other details of the CSS. Section 4.2 discusses the performance of NUHM. Section 4.3 highlights the issues and challenges of the CSS followed by recommendations for the CSS in section 4.4.

4.1 Background

As per the United Nations, population size of India has more than tripled since 1950 to 1.35 billion in 2018 and the level of urbanization nearly doubled, reaching 34 per cent in 2018. If urbanization continues in India with the current rate, 46% of the total population will be in urban regions by 2030 (UN Department of Economic and Social Affairs, 2018). With an increase in urbanization, there has been a rapid rise in the urban poor population living in slums and other illegal temporary settlements.

Regardless of the proximity to urban health facilities, access to such facilities is severely restricted due to inadequacy of the urban public health delivery system, ineffective reach, weak referral system, social exclusion, lack of information, and lack of economic resources in the urban set-up (Ministry of Health and Family Welfare, 2013).

According to NFHS-4, U5MR among the urban poor is higher than the urban average, a greater number of urban poor children are underweight and miss total immunization and slums have high incidence of vector borne diseases (Ministry of Health and Family Welfare, 2013). As per NFHS-4, indicators like anaemia status, percentage of people with cancer who have sought treatment, women who receive ANC from a skilled provider, neonatal mortality, infant mortality, child mortality and under-five mortality still show a rise with a fall in the wealth index in urban areas (Ministry of Health and Family Welfare, 2015-16).

In order to address the health concerns of the urban poor population, National Urban Health Mission (NUHM) was approved and launched as a sub-mission of the National Health Mission in May 2013. The scheme aims to meet the healthcare needs of the urban poor by providing essential primary healthcare services and reducing out of pocket expenditure on treatment. This is being achieved by strengthening the existing health care service delivery system, targeting the people living in slums and converging with various schemes relating to wider determinants of health like drinking water, sanitation, school education, etc. implemented by the Ministries of Urban Development, Housing & Urban Poverty Alleviation, Human Resource Development and Women & Child Development. The National Health Policy 2017 also prioritizes addressing the primary health care needs of the urban population with special focus on poor populations. Further collaboration with other sectors to address wider determinants of urban health is advocated (National Health Policy, 2017).

The goal of the scheme is to improve the health status of the urban population in general, but particularly of the poor and other disadvantaged sections, by facilitating equitable access to quality health care through a revamped public health system, partnerships, community-based mechanism with the active involvement of the urban local bodies.

The mission was designed to be launched in all cities/towns with a population of more than 50,000, all district headquarters and state capitals. The scheme planned an active involvement of the Urban Local Bodies (ULBs), and community level institutions like Mahila Arogya Samiti (MAS) and link workers called Accredited Social Health Activists (ASHA).

The core strategies to achieve the goal are:

Improving the efficiency of public health system in the cities by strengthening, revamping and rationalizing existing government primary urban health structure and designated referral facilities	**Strengthening public health through innovative preventive and promotive action**

Increased access to health care through creation of revolving fund	**Prioritizing the most vulnerable amongst the poor**	**Capacity building of stakeholders**

IT enabled services (ITES) and e-governance for improving access improved surveillance and monitoring	**Promotion of access to improved health care at household level through community-based groups: Mahila Arogya Samitis**	**Ensuring quality health care services**

The institutional structures created for NRHM at the national, state and district levels have been strengthened and used for NUHM operationalization. Following are governance structures and financial mechanisms serving the scheme (Ministry of Health and Family Welfare, 2013).

Table 4-1: Institutional structures under NUHM

Central Level	Mission Steering Group (MSG) under the Union Health Minister including Ministers of HUPA and Urban Development
	Empowered Program Committee (EPC) under the Secretary (H&FW), expanded by co-opting Secretary, HUPA and Secretary, Urban Development
	National Program Corordination Committee (NPCC) under the Mission Director
	National Program Management Unit (NPMU) to facilitate and monitor scheme implementation
	Additional Secretary & Mission Director, MoHFW is the Additional Secretary & Mission Director (NRHM and NUHM)
State Level	State Program Management Unit (SPMU)
	State Mission Director (NRHM) is State Mission Director (NUHM)
City Level	City Urban Health Mission/City Urban Health Society or existing structure of District Health Society/Mission under NRHM with additional stakeholders
	Urban Health Committee headed by the Municipal Commissioner/District Magistrate/ Deputy Commissioner/ District Collector/ Sub-Divisional Magistrate/ Assistant Commissioner
Seven Mega cities (Delhi, Mumbai, Kolkata, Chennai, Bangalore, Hyderabad, Ahmedabad)	Urban Local Bodies (ULBs)

Source: (Ministry of Health and Family Welfare, 2013)

Chapter 4: National Urban Health Mission

Key activities of the scheme contributing to the national targets of the NHP 2017 are:

Table 4-2: Key activities of NUHM

1. Creation of service delivery infrastructure	• Urban Primary Health Centre (UPHC) – functional for 50,000 population • Urban Community Health Centre (UCHC) and referral hospitals – 30-50 bedded for population >5 Lakhs and 75-100 bedded in metros • Strengthening of existing public health institutions like Urban Family Welfare Centres, Maternity Homes etc. • Addressing the over increasing NCDs in urban areas and improved health seeking behaviour through community-based interventions and referral mechanism • Utilization of AYUSH personnel in urban healthcare • Collaboration with District Hospitals/ Area Hospitals/ Sub District hospitals and local Medical Colleges is promoted in the scheme for strengthening the training support and supplement human resource at the U-PHC level
2. Outreach	• Outreach services through Female Health Workers (FHWs)/Auxiliary Nursing Midwives (ANM)
3. Targeted interventions for slum population and the urban poor	• Mahila Arogya Samiti (MAS) facilitates community mobilization, monitoring and referral, and manages grants • Link Worker/ASHA serve as an effective and demand generating link between the health facility and the urban slum population • Capacity Building Support is provided to MAS/community-based organization for orientation, training, exposure visits etc. • Outreach services like weekly medical camps are organized in slum areas.
4. Public Private Partnership	• Exploring partnerships with for profit and not for profit sector for urban health care delivery. PPP particularly with not for profit service is encouraged and innovations in public health to address city and population specific needs are supported
5. Role of Urban Local Bodies	• Active participation of ULBs in planning and management of the urban health programs is promoted
6. Funding/Budget Mechanism	• The State Health Societies and District Health Societies maintain separate accounts for NUHM and funds flow to the City Urban Health Society/District health Society through State Government/State Health Society
7. Convergence	• The scheme promotes both inter sectoral and intra sectoral convergence with national disease control programs like RNTCP, IDSP, NVBDCP etc., Department of AYUSH, Department of AIDS Control, Department of Health Research, Ministry of Urban Development and Ministry of Housing and Urban Poverty Alleviation (Rajiv Awas Yojana, Swarn Jayanti Shahri Rozgar Yojana), Ministry of Women and Child Development, Ministry of Human Resource Development (School Health Program, Adolescent Reproductive and Sexual Health), Ministry of Minority Affairs (Multi Sectoral Development Program) (Ministry of Health and Family Welfare, 2013) and engagements with Railways, ESIC and corporate sector (CSR) are encouraged
8. Other Aspects	• Public health Laboratories are strengthened for early detection and management of disease outbreaks and extensive use of technology is done for hospital management, monitoring and service delivery

Source: (Ministry of Health and Family Welfare, 2013)

4.2 Performance

The performance of NUHM is mapped on the following discussion points as per the achievement of objectives and targets and other contributions:

- Financial Performance
- Core Health Outcomes
- Output-Outcome Performance (Program Level)
- Cross Sectional Themes
- REESI+E
- Cross-sectional themes

4.2.1   Financial Performance

Under NUHM, the Centre-State funding pattern is 60:40 for all the states w.e.f. FY 2015-16, except all North-Eastern states and other hilly States viz. Jammu & Kashmir, Himachal Pradesh and Uttarakhand, for which the Centre-State funding pattern is 90:10. In the case of UTs, from FY 2017-18, the funding pattern of UT of Delhi and Puducherry has been revised to 60:40 and rest of the UTs without legislature are fully funded by Central Government.

In terms of financial performance, the RE and AE for NUHM over the last four years has been provided below in Figure 4-1 (in INR Crore).

Figure 4-1: NUHM- Budget Allocations and Expenditure
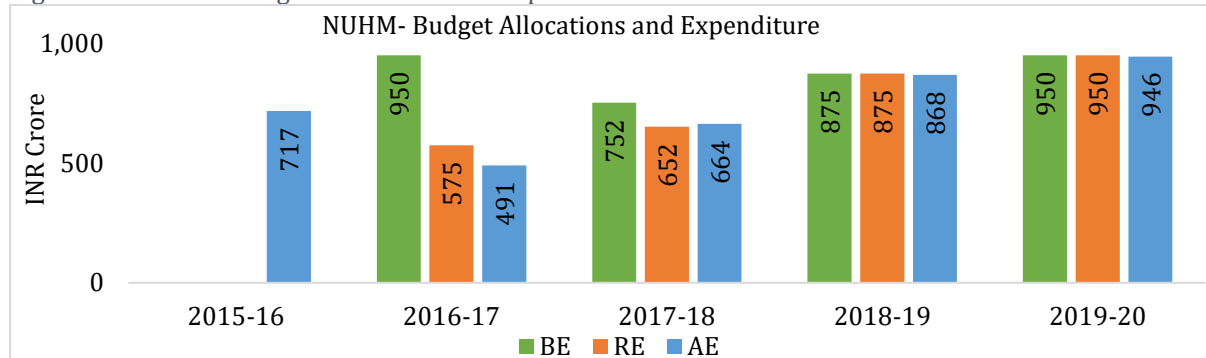
Source: Union Budget for Ministry of Health and Family Welfare 2019-20, 2018-19, 2017-18, 2016-17

Since the launch of NUHM in FY 2013-14 till the 2nd quarter of FY 2019-20, INR 6838.48 Crore and INR 5385.02 Crone have been allocated and released respectively to the States/ UTs for implementation of the program activities. Overall, the States have reported more than 70% of the expenditure till the 2nd Quarter of FY 2019-20 (MoHFW, 2020).

As it can be seen, the allocations have increased considerably from 2017-18 to 2018-19 (8% increase). The allocations show an increasing trend year on year. The utilization(AE/BE) of the allocated funds increased sharply from around 51.6% to over 88.9% from 2016-17 to 2017-18. The financial allocation and utilization have shown consistent improvement since 2016-17. The high utilization indicates good fund absorption capacity of the schemes. Therefore, the scheme has performed well in terms of utilization of its allocations.

4.2.2   Core Health Outcomes

The performance of NUHM on health indicators (no target year has been specified) against its objectives is shown below:

Table 4-3: NUHM performance

Objective	Target	Achieved
Reduce IMR by 40 % (in urban areas) – National Urban IMR down to 20 per 1000 live births by 2017	40% reduction in U5MR and IMR	14.8% reduction in Urban-U5MR and 13.7% reduction in Urban-IMR from 2013 to 2017 *(Source: SRS Data)*
Reduce MMR by 50 %	100% ANC coverage (in urban areas)	31.1% as of 2015-16 *(Source: NFHS-4)*
Achieve replacement level fertility	TFR 2.1	1.7 *(Source: SRS 2017)*
Achieve universal access to reproductive health including 100% institutional delivery	100% institutional delivery	88.7% *(Source: NFHS-4)*

Chapter 4: National Urban Health Mission

4.2.3   Program Performance (Output-Outcome performance)

- To address the healthcare needs of the urban population, NUHM provisions the establishment of infrastructure for its service delivery. Urban Primary Health Centres (U-PHC) catering to approximately 50,000 urban population and Urban Community Health Centres (U-CHC) in cities above 5 lakhs population are established as per gap analysis. The status of infrastructure under NUHM is as under:

- The Rural Health Statistics reports a total of 9,072 PHCs required in urban areas, while only 5,190 are operational. There is a shortage of 4,026 urban PHCs (RHS, 2019). 768 new UPHCs have been approved for construction, of which 464 (60%) have been completed. Similarly, 69 new UCHCs have been approved, of which 26 (38%) have been constructed.

Table 4-4: Number of UPHCs and UCHCs

Number of UPHCs	5190
Number of UCHCs	350

Source: Rural Health Statistics 2019

- In rural areas majority of the people (48%) visited PHCs & CHCs, while in urban areas majority of the people visited SDH, DH & Medical Colleges (69%) (EY Primary Analysis: Household Survey 2019). This can be attributed to the shortfall in the primary healthcare infrastructure (UPHCs).

- The average time taken to reach the government health facility was 25.2 minutes in rural areas and 19.6 minutes in urban areas (EY Primary Analysis: Household Survey 2019).

Table 4-5: Total number of 24×7 Facilities

	India	High Focus Non-NE (10)	High Focus NE (8)	Non-High Focus Large (11)	Non-High Focus Small & UTs (7)
Total UCHCs & Maternity Homes functional 24×7 under NUHM	208	30	2	150	26
Total UPHCs functional 24×7 under NUHM	340	62	13	264	1

Source: NHM Quarterly MIS Report- March, 2020

- Human resource under NUHM caters to two different aspects of program implementation. These can be broadly divided into: Service Delivery Staff and Program Management Staff. Service delivery staff is responsible for providing preventive, promotive and curative services through facility as well as community outreach services and management of the health facility. Specialist services can also be provided at the UPHC on a fixed day/hours basis depending on the local need and availability. The HR status under NUHM is shown below:

Table 4-6: Status of Human Resources under NUHM

Human Resource	UPHC	UCHC
Number of Medical Officers (3104) *	2,223	96
Number of Pharmacist (3631) *	2,714	40
Number of Lab Technician (3783) *	2,882	39
Number of Paramedics (others)	2,259	13
Number of Staff Nurses (8647) *	5,898	224
Number of Specialists (362) *		162
Number of ANM (16113) *	13,151	
Number of LHV	96	
Number of Public Health Manager (542) *	406	

PMU Staff	
Number of Staff at SPMU level	173
Number of Staff at DPMU level	649
Number of Staff at CPMU level	375

*Numbers approved (Source: Annual Report, MoHFW 2018-19)
Source: Quarterly NHM MIS report (Status as on 31st March 2020)

Table 4-7: Status of RKS in UPHCs and UCHCs

Indicator	As on 31-03-2020
No. of RKS created at UPHC	3141
No. of RKS created at UCHC	107

Source: Quarterly NHM MIS report March 2020

Differential timings are being advocated under NUHM and states are free to choose operational hours of UPHCs as per the local needs of the urban population. Timings are in two shifts 8am-12pm and 4pm -8pm in few states or 12pm -8pm in some others (MoHFW, 2020). Till March 2020, 88% mapping of urban health facilities and 87% slum mapping have been completed. 55% vulnerability mapping has been completed under NUHM till March 2020 (NHM Quarterly MIS Report March 2020).

For building and strengthening Institutional Capacity trainings for health management capacities at state level have been conducted through Indian Institute of Management (Ahmedabad). States like Haryana, Rajasthan were also provided support for carrying out trainings on mapping and other such areas (Ministry of Health and Family Welfare, 2020).

Kayakalp and Swachh Swasth Sarvatra (SSS) have been expanded to cover urban areas also and U-PHCs have been awarded Kayakalp awards. Various other training and capacity building activities for officials of both the State and ULB officials have been held with support of institutions as IIM, NHSRC, SHSRC etc (Ministry of Health and Family Welfare, 2020).

3,315 are UPHC-Health & Wellness Centres[89] are present in the country. Development of urban HWCs below the level of PHCs has been suggested under the Atmanirbhar Package to improve and the strengthen the outreach in urban settings.

> **Case Study 25- Systems strengthening for better urban healthcare delivery through collaboration with Medical Colleges – Karnataka**
>
> **Introduction**
>
> The Karnataka health department collaborated with Bangalore Medical College & Research Institute [BMCRI] to provide technical support like training, research and field activities medical academicians provide useful insights to improve public health system in urban areas.
>
> **Key Stakeholders**
>
> | Department of Community Medicine | • Implentation partner for National Health Mission and Bruhat Bengaluru Mahanagara Palike programmes
• Plans and carryout feild actitives like vaccination campaign, other intervention progammes etc. |
> |---|---|
> | Bangalore Medical & Research Institute | • Knowledege Partner
• Provides technical support, training feild workers, research activities etc. |
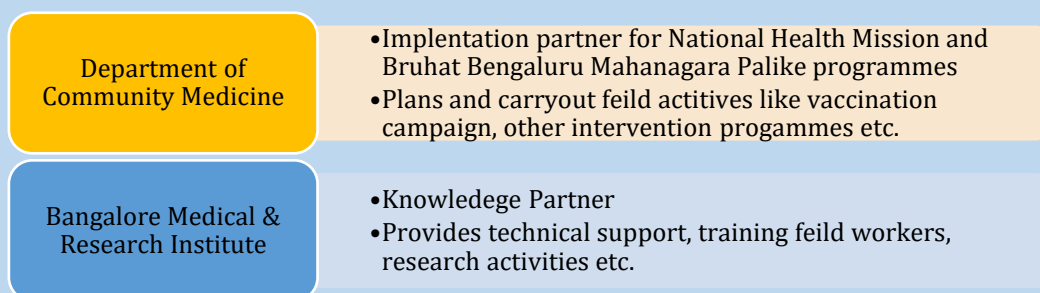
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[89] https://ab-hwc.nhp.gov.in/ ; last accessed on July 1 2020

Implementation of the practice

The Department of Community Medicine collaborated with Bangalore Medical & Research Institute to work on National Health Mission and Bruhat Bengaluru Mahanagara Palike initiatives. They offer technical support in to improve health care services as follows:

- Trained manpower for planning and field level activities like subject experts in respective fields, postgraduate and undergraduate medical students, students pursuing Diploma in Health Inspector (DHI), student nurses
- Field activities like: Pulse Polio campaign, Mission Indradhanush, surveys like Active Case Finding for TB, Leprosy Case Detection Campaign, Vulnerability assessment.
- Research activities like time motion study to decrease wait time at UCHC, Awareness & Client satisfaction of NUHM at UPHC, intermediate term evaluation of NUHM in BBMP, Focused Group Discussion on Drug Abuse & Illicit Trafficking
- Convergence through Urban Health Training Centres: Health care services are being provided to the patients visiting the Outpatient Department of the UPHC, assist in immunization sessions, ANC clinics, high risk pregnancy detection & in providing services at specialty OPDs like Medicine, Paediatrics, evening clinics of Surgery Orthopaedics, Psychiatry
- Space and resource persons for regular training activities

Results of the practice

The collaboration becomes a win-win situation for NHM and medical colleges. Participation of academicians in NHM programs brings in additional perspectives and innovative ideas to improve the standard of the programs. The inclusivity with medical college also provides the students and research participants a chance to solve real-life challenges.

Lessons Learnt

In long run, sustainability of the project will be a major challenge. The continual availability of the college guidance will be difficult in long run NHM programs due to the churn rate of researchers and human resources. An efficient knowledge management system is required

> to improve the knowledge transfer and continuity of the project. Scaling this collaborative initiative to other districts is also hard since infrastructure and robust networks of people are challenging in other parts of the state.
>
> **Conclusion**
>
> Apart from the scalability and sustainability challenges this collaboration provides availability of additional resources to the NHM, helps in upgrading and remains relevant to the changing needs of the community and growing requirements of the healthcare delivery system. Adapting to robust collaborative methods will deliver extended benefits to both the Karnataka health department and BMCRI.

4.2.4 Community Process

Community Processes is integral to NUHM, to enable coverage of quality health services for the vulnerable and marginalized. Focus in the urban areas has improved through several initiatives, namely Vulnerability Assessment, Household Surveys (HHS), Urban ASHAs, MAS, UHND and special outreach, along with focus on social determinants of health such as sanitation, potable water, control of mosquito breeding sites, as part of efforts to cover the urban population, with focus on urban slums, migrants and other vulnerable sections.

The ASHA and the Mahila Arogya Samitis deliver NUHM's community processes interventions. About 70,000 ASHAs and 97,000 MAS have been approved for effective community participation activities (MoHFW 2020).

ASHA trainings are not localized. Local challenges of both the health infrastructure and health needs to be taken into consideration for designing training curriculum for urban ASHAs (EY Primary Analysis: KIIs, 2019). Support to ASHA (similar to ASHA facilitator in rural areas) is lacking in urban areas (EY Primary Analysis: KIIs, 2019). High attrition rate of ASHA in urban areas is also reported (EY Primary Analysis: KIIs, 2019).

Outreach services under NUHM are provided through the Female Health Workers (FHWs), essentially ANMs who are headquartered at the Urban PHCs and are given an induction training of three to six months. These ANMs report at the U-PHCs and then move to their respective areas for outreach services (including school health) on designated days. They are provided mobility support for providing outreach services (UPHC under NUHM – Roles, Responsibilities and Management).

Mahila Arogya Samitis (MAS)

Mahila Arogya Samiti (MAS) per 250 - 500 population covering approximately 50 - + 100 households to act as community-based peer education group in slums. They are involved in community mobilization, monitoring and referral with focus on preventive and promotive care (Guidelines for ASHA and Mahila Arogya Samiti in the Urban Context, 2014).

All states except Haryana have MAS in place. Presently 28 out of 34 states/UTs have formed MAS. Total 77,003 (86%) MAS have been formed against the target of 89,446. The number of MAS which have bank account is 64,404 (83.6% against the target). Most of states/UT have on an average of 10-12 MAS members except Puducherry which has 30-40 members and Chhattisgarh reported that is no such norm exists in the state (Update on ASHA Program, 2019). MAS program has been identified as a successful initiative under urban health community interventions (EY Primary Analysis: KIIs, 2019).

Chapter 4: National Urban Health Mission

High focus states like Jharkhand, Odisha, Rajasthan and Uttarakhand has achieved 100% of their MAS formation and 86% of their MAS have bank accounts. Nearly all North east states have constituted above 80% MAS against the target except Nagaland that has about 77% MAS functional. In UTs only Puducherry and Andaman & Nicobar has MAS in place, remaining all have (Lakshadweep, Dadar & Nagar Haveli and Daman & Diu) not proposed any target for MAS (Update on ASHA Program, 2019). The Non-High Focus states together have achieved 86% of their target for formation of MAS, and 82% of MAS against the target also have a bank account.

Tamil Nadu does not have Mahila Arogya Samitis and relies on wide network of Self-Help Groups (SHGs) in urban areas to perform functions similar to MAS (Update on ASHA Program, 2019). In addition to health promotion & prevention and community awareness, these SHGs are also used for screening of NCDs in certain pockets of greater Chennai Municipal Corporation.

Table 4-8: Status of Mahila Arogya Samities

	Status
No. of cities where MAS is proposed	983
Target no. of MAS proposed	89,446
No. of MAS formed	77,003
Percentage of MAS formed	86
No. of MAS with bank account	64,404
Target (No. of MAS to be trained)	76,479
Total number of MAS trained in handbook	4,96,812
Total no. of MAS members trained in handbook	2,90,363

Source: Update on ASHA Program, 2019

The other interventions such as ASHAs, RKS etc, have been discussed in section 3.2.3 as the discussed community interventions are functional in both urban as well as rural areas.

Table 4-9: Output-Outcome Indicator for National Urban Health Mission

NUHM					
Outputs					🟢
Output	Indicator	Target	Data	Source	Status
Improving access to Healthcare in Urban India	Number of UPHCs and UCHCs providing comprehensive primary health care services with adequate staff.	25000 PHCs including urban PHCs & Sub Centres to be providing comprehensive primary health care services	UPHC – 5,190 UCHC – 350 (as on 31-03-2019) UPHC-HWC – 3,315 PHC-HWC - 16,423 SHC-HWC- 21,152 (as on 1-07-2020)	RHS 2019	Met
	Number of OPDs carried out at public health facilities in Urban India	5% increase from previous year	Number of OPDs carried out in urban health facilities as per HMIS data for last 3 FY are: FY 2017-18= 290,552,021 FY 2018-19= 358,796,012 FY 2019-20= 346,285,244 There is an increase in OPD from FY 2017-18 to FY 2018-19 (23%). The slight decrease for FY 2019-20 compared to FY 2018-19, may be due to data reporting issues.	HMIS	Unmet

Providing quality healthcare services in Urban India	Number of women getting at least 4 ANCs at all Urban Health Facilities	2% increase from last year	Women getting at least 4 ANCs at urban health facilities as per HMIS data: FY 2018-19= 3,484,522 FY 2019-20= 3,708,436 Shows an increase of 6.4% from 2018-19 to 2019-20.	HMIS	Met
	Number of children getting full immunization at all Urban Health Facilities	2% increase from last year	Children getting full immunization as per HMIS data: FY 2018-19= 4,246,543 FY 2019-20= 4,648,172 Shows an increase of 9.4% from 2018-19 to 2019-20.	HMIS	Met
	Number of UHNDs (Urban Health & Nutrition Days)/Outreach/ Special Outreach conducted by UPHCs	2% increase from last year	Number of UPHCs reported to have conducted Urban Health & Nutrition Day (UHNDs)/ Outreach / Special Outreach as per HMIS data: FY 2018-19= 5,25,145 FY 2019-20= 5,65,823 Shows an increase of 7.7% from 2018-19 to 2019-20.	HMIS	Met

Outcomes 🟠

Outcome	Indicator	Target	Data	Source	Status
Increased utilization of Public Health facilities	Percentage increase in annual OPD in Public Health Facilities	5% increase from previous year	Number of OPDs carried out in urban health facilities as per HMIS data for last three FY are: FY 2017-18= 290,552,021 FY 2018-19= 358,796,012 FY 2019-20= 346,285,244 There is an increase in OPD from FY 2017-18 to FY 2018-19 (23%). The slight decrease for 2019-20 compared to 2018-19, may be on account of data reporting issues.	HMIS	Unmet
Reduction in Maternal Mortality Rate	MMR	As per NHM	113 (2016-18) for pan India	SRS MMR Bulletin-2016-18, 2020	No target for urban setup
Reduction in Infant Mortality Rate	IMR	As per NHM (25/1000 live births)	For 2018 India – 32 Rural – 36 Urban - 23	SRS Report 2018, 2020	Met

Chapter 4: National Urban Health Mission

4.2.5 REESI+E Framework Analysis

Table 4-10: Summary of evaluation of National Urban Health Mission based on REESI+E Framework

Theme	Remarks
Relevance	+ NUHM's aim to meet health care needs of the urban population with the focus on urban poor, by making available to them essential primary health care services and reducing their out of pocket expenses for treatment still remains very relevant.
Effectiveness	− Has not been able to create the required infrastructure to meet the urban health care needs − Outcome targets do not have proposed timeline for achievement in the scheme framework

Efficiency	+ Financial utilisation of the scheme has increased since 2016-17
	+ Performance Based funding to States has been yielding positive results. Classification of States into five categories promote competitiveness(efficiency) amongst States while maintaining vertical equity (EY Primary Analysis).
	+ In order to have transparency & accountability, Public Financial Management System (PFMS) has been introduced leading to tracking of funds till the last mile (EY Primary Analysis)
	+ NUHM Flexipool allows the States to utilise the funds as per local needs within the pool
	+ Increased utilisation of public health facilities
	− Shortfall of different healthcare providers in urban PHCs and CHCs as follows:
	  − Health Worker [Female] / ANM At PHCs In Urban Areas: 44%
	  − Doctors at PHCs in Urban Areas: 17%
	  − Total Specialist at CHCs in Urban Areas: 46%
	  − GDMOs(allopathic) at CHCs in Urban Areas: 25%
	− 44.4% shortfall in the number of PHCs in urban areas against the estimated mid-year population till July 2019

Sustainability	+ Adopted a systems approach and encourages states to adopt innovative strategies for strengthening healthcare system towards increased sustainability − Technical capacity of State Directorates needs to be strengthened − More time is needed by the states to own a complete financial responsibility − Under NUHM, the Centre-State funding pattern is 60:40 for all the states w.e.f. FY 2015-16, except all North-Eastern states and other hilly States viz. Jammu & Kashmir, Himachal Pradesh and Uttarakhand, for which the Centre-State funding pattern is 90:10. In the case of UTs, from FY 2017-18, the funding pattern of UT of Delhi and Puducherry has been revised to 60:40 and rest of the UTs without legislature are fully funded by Central Government. − Framework should be redesigned to have better adaptability to needs of urban population
Impact	+ Contribution towards SDG and NHP-2017 goals − NUHM is on the path to achieving its target for urban IMR, U5MR, institutional deliveries and MMR (timelines for achieving the targets not defined)
Equity	+ NUHM was conceptualised for the vulnerable and poor section of the urban population which has low/no access to basic healthcare services. + NUHM also aimed at reducing the burden of high OOPE on healthcare on lower income vulnerable population in urban areas. Decrease in public IPD expenditure and marginal increase in OPD expenditure in urban areas observed from 2014 to 2017-18 as discussed in section 2.2.2. + Till March 2020, 88% mapping of urban health facilities and 87% slum mapping have been completed. − Only 55% vulnerability mapping has been completed under NUHM till March 2020 − Reporting of fund utilisation and outcome indicators for health under TSP and SCSP needs improvement − While there has been noticeable effort made on ensuring equity and social inclusion, there is still lot desired across the spectrum

◼ Satisfactory   ◼ Average   ◼ Needs Improvement   ◼ Data unavailable

4.2.6 Cross Sectional Thematic Analysis

Table 4-11: Analysis of Cross-Sectional Themes for NUHM

Cross-Sectional Theme		Indicative Area of Enquiry	Key Questions	Remark
Accountability & Transparency	🟡	Availability of Data Records and Reports in public domain	Is data available for the scheme in public domain?	**+** Yes, But quality and periodicity of data are big concerns
			What data records are available for the scheme in public domain?	**+** HMIS- health indicators; RHS- infrastructure details; NIKSHAY – Tuberculosis beneficiary data; Nikusht – Leprosy beneficiary data; CHC-NCD app; Cancer Registry etc. **+** Data on key parameters for service delivery are available in HMIS and can be triangulated with data available from external surveys. The most important of these external surveys are the Sample Registration Survey (SRS), the District Level Household Survey (DLHS) and NFHS.
			What level of data is available in public domain - National/State/District-level/ Beneficiary level;	**+** National, State, District and beneficiary level data available
			Is beneficiary-level data available? At what level?	**+** Beneficiary level data available in HMIS, nikshay, nikusht etc. **–** Limited data for urban population is available (HMIS reports only two urban indicators)
		Monitoring Mechanisms	What is the frequency of audits?	**–** NUHM framework proposes a system of periodic concurrent audits, an annual audit and quarterly audits of untied RKS funds

			Has a social audit been conducted? When?	**–** No
				  – A need for Social audits in health sector have been identified. NHM framework also encourages social audits.
				  – Data is not available on social audit conducted so far.

			Does a robust monitoring mechanism exist and at what level?	**+** NUHM Framework has provision of Concurrent audit right from the inception stage to identify discrepancies and take corrective actions. All the funds/ untied grants are to be audited on a quarterly basis.
			What design aspects have been implemented for reduced leakages?	**+** Treasury system has been introduced to plug the leakages in fund flow. **+** Implementation of Public Financial Management System (PFMS) to track disbursal and utilization of funds
		Evaluation Mechanisms	Process/Impact evaluation studies conducted in the last decade - Frequency, quality, coverage, Etc.	**+** Frequent evaluation studies conducted: • NRHM In 11th Five Year Plan (NHSRC)

Chapter 4: National Urban Health Mission

Cross-Sectional Theme		Indicative Area of Enquiry	Key Questions	Remark
				• Report on Analysis of Planning Process Under NRHM 2009 (NHSRC) • Common Review mission started in 2007– 12 reviews conducted (Annually, with sample states covered) • Reports of High-Level Group on Health Sector available as inputs to 12th, 13th, 14th and 15th Finance Commissions. • Multilateral Organizations: World Bank, WHO etc • Central and State Agencies: NHSRC, NITI Aayog, ICMR etc. • Research and Academic Institutions: PFI, PGI, IIPH etc. • Other studies by Private Sector: ongoing evaluation by EY, IBEF etc.
		Citizen Accountability	Has a citizen charter been carefully drafted, adopted and publicized?	**+** CRM reports that in most states, the facilities displayed 'Citizen Charter'. **−** However, there is no uniformity in the Citizen Charters seen across facilities/ states.
			Are there functional grievance redressal mechanisms that successfully incorporate beneficiaries' and non-beneficiaries' concerns?	**+** Involvement of local government and community-based programs for planning and monitoring of health needs incorporating beneficiaries' and non-beneficiaries' concerns **+** 24×7 Toll free Helpline / Virtual Assistant (voice web) for authenticated health information developed by the National Health Portal (NHP) **+** Some form of grievance redressal mechanism has been established in all states except Rajasthan, Tripura, Telangana and Bihar (CRM, 2019). **−** Awareness and effectiveness of these mechanisms needs focus. **−** Only 44%, 23% and 29% of the surveyed DHs, CHCs and PHCs respectively, regularly collected patient feedback. 87%, 69% and 58% of the surveyed DHs, CHCs and PHCs respectively had a publicly displayed mechanism for complaints/grievance registration
			Is the RTI mechanism functioning effectively?	Yes
		Financial Accountability	What funding mechanisms are being used?	NHM fund sharing pattern is 60:40 between Central Government and most of the States and UTs with Legislature (Delhi & Puducherry). For the States of Jammu & Kashmir, Himachal Pradesh, Uttarakhand and North-Eastern States including Sikkim, the sharing pattern is 90:10 between the Central

Cross-Sectional Theme		Indicative Area of Enquiry	Key Questions	Remark
				Government and the States. For UTs without Legislature, funding pattern is of 100% Central Share. ✚ NHM funds flow through state treasury for better transparency and administrative control. ✚ Flexibility between different flexipools for fund utilisation for States to address local health needs has been introduced. ✚ Performance based funding to states has been yielding positive results in bringing equity and efficiency. ✚ Decentralised Planning and flexibility in funding is a best practice to be adopted by other sectors. The fund flow and planning are discussed in detail in Section 3.2.7.
			Is DBT being used?	✚ Yes
Direct/Indirect Employment Generation	🔵	Employment generation	What is the level of employment generation through schemes in the sector and overall sectoral contribution in National employment generation?	▬ Data Not Available
			What is the proportion of Informal jobs converted into formal	▬ Data Not Available
			What is the improvement in income levels?	▬ Data Not Available
			What is the improvement in availability of employment opportunities	▬ Data Not Available
			What is the women participation (%) in the Sector/Program	▬ Data Not Available
		Quantum of Self Employment, entrepreneurship generated	Is financial assistance provided through Mudra etc?	No
			Quantum and kind of self-employment opportunities generated	▬ Data Not Available

Chapter 4: National Urban Health Mission

Cross-Sectional Theme		Indicative Area of Enquiry	Key Questions	Remark
Gender mainstreaming	●	Inclusiveness in scheme design/planning	Is there a specific mention of gender equality and equity considerations in the scheme guidelines/objectives, i.e. has the scheme been designed keeping gender considerations in mind?	**+** Yes
			Is gender budgeting being actively practised?	**–** Data Not Available
			Are there any initiatives for the inclusion of transgender people?	- No
		Gender-friendly infrastructure and policies	Are gender-friendly plans translating into greater empowerment of women in implementation?	**–** Data Not Available
			Are there women-friendly policies in place, like parental leave (maternity and paternity), creches, flexible working hours, inclusion in decision-making etc.?	**–** Data Not Available
			Is there a gender wage gap, and any measures in place to mitigate the same?	**–** Data Not Available
			Are there sufficient safeguards to ensure a safe working environment for women, including from physical injury, sexual harassment etc.?	**–** Data Not Available
		Capacity building	Is there any specific training offered for women to enhance job roles or assist career progression?	**–** Data Not Available
			Are there sufficient awareness-raising communications or courses regarding women-friendly provisions/safeguards, sexual	**–** No. **–** Awareness and information, from a gendered perspective, to bust the myths and misconception regarding sterilization needs to be focused upon.

Cross-Sectional Theme		Indicative Area of Enquiry	Key Questions	Remark
			harassment policies, grievance redressal mechanisms etc.?	
			Are there sessions/plans for sensitization of the work force on gender equality?	**-** Data unavailable
Climate change & sustainability including adoption of climate-change resilient practices & diversifications	🟡	Climate resilience	Is there a well-developed understanding of how climate change will affect the sector?	**-** Data unavailable
			Are appropriate climate resilient policies, for mitigation and/or adaptation, included in the scheme objectives and design?	**+** Yes, Bio-Medical Waste Management and Radiation Management from diagnostic equipment are well included in the design of NRHM.
			Are the planned design factors being successfully implemented?	**+** Yes, through compliance of BMW 2016 rules and AERB guidelines.
			Is there an appropriate disaster risk reduction plan in place?	Not applicable
		Sustainable practices	Are there possibilities for circular economy development in the sector?	Not applicable
			Is there an appropriate/sufficient focus on diversification (eg. agrobiodiversity) to reduce risk?	Not applicable
			Is there an effective waste management/end-of-life system in place for resources used in the sector/schemes?	**+** Yes **+** Bio-Medical Waste Management Rules, 2016 Rules have been implemented to improve compliance and strengthen the implementation of environmentally sound management of biomedical waste in India. **+** The states need to undertake concerted efforts for disposal of Biomedical waste as per provisions of BMW Rules 2016 & subsequent amendments. Sub-optimal supply of the required consumables or knowledge, attitude & practice exhibited by staff for BMW management are the major bottlenecks.

Chapter 4: National Urban Health Mission

Cross-Sectional Theme		Indicative Area of Enquiry	Key Questions	Remark
				+ AERB guidelines are to be strictly adhered to in the laboratories to ensure radiation safety of the operator and patient. **+** Financial support has been provided to state and UTs for equipment, supplies and consumables required for biomedical waste management, Training and capacity building. (through PIP mode) under NHM till DH level. MoHFW has been encouraging establishment of CBMWTF (Common Biomedical Waste Treatment Facilities) and all facilities are expected to develop linkage with CBWTF.. The number of operational CBMWTF have increased to 211 (2017) from 178 (2008). Most of these are operating as outsourced model. To improve the supply of equipment, consumables and bar coding facilities, the responsibility has been assigned to CBMWTF
		Awareness and capacity building	Are there any training sessions held regularly for reducing pollution, adopting green practices, using local materials etc.?	**+** Regular trainings related to BMW 2016 rules are conducted.
			Are the end beneficiaries aware of climate risks and possible individual mitigation/adaptation measures?	Not applicable
Social Inclusion and Role of Tribal Sub-Plan (TSP) and Scheduled Caste Sub-Plan component of the scheme in mainstreaming of Tribal and Scheduled Caste population	●	Funds allocated under TSP/ SCSP and other provisions for vulnerable communities	What is the fund allocated under TSP & SCSP for each scheme?	NUHM INR 113.20 Crore- SCSP; INR 26.33 Crore- TSP
			What is the fund allocated under TSP & SCSP for each scheme in different states?	**−** Data not available
			How much of the fund been utilized overall and by each state?	**−** Data not available
			For what outputs has the fund been utilized?	**−** Data not available
			What has been the effect of the TSP & SCSP funds on improving equity?	**−** Data not available

Cross-Sectional Theme		Indicative Area of Enquiry	Key Questions	Remark
		Inclusion of vulnerable groups in scheme as well as sector	What are the interventions implemented for specific vulnerable groups?	**+** NUHM was launched to address the needs of urban poor and vulnerable populations only. **+** Mapping of slums, migratory groups and other vulnerable populations in urban areas is done under the scheme for developing and implementing targeted interventions.
			What are the major challenges for inclusion?	**+** Migratory population is the major challenge towards improving the health of the urban poor.
			Are there any vulnerable groups not covered?	No
Use of IT/Technology in driving efficiency	🔴	Deployment of IT enabled mechanisms for monitoring of the Schemes	In case of a scheme to create physical assets, is geotagging and use of geotagged photographs being done?	No
			In case if the scheme intends to directly benefit an individual beneficiary or an enterprise or a collective, is JAM trinity and DBT being used?	**+** Yes, (same as NRHM) **+** For programs like NLEP, NTEP, JSY, ASHA etc.
			How is technology being used for on-ground data collection?	**+** Field workers like ANMs and ASHAs have been trained to digitally record beneficiary data for various databases such as HMIS, MCTS etc. mhealth
			Is there an online scheme MIS to ensure regular update of progress and effective supervision?	**+** Yes, HMIS. **−** No separate MIS for NUHM.
			What is the granularity of data available in MIS?	**−** Only 2 Urban health indicators are reported under HMIS. A separate urban data reporting platform is missing.
			What is the frequency at which the information is being updated/reported on the MIS/Dashboard?	**+** HMIS dashboard is updated quarterly

Cross-Sectional Theme		Indicative Area of Enquiry	Key Questions	Remark
			What are the benefits of and challenges faced in implementation of MIS portals/ Apps?	**+** Accurate data reporting, integrity and standardisation have been identified as areas of improvement for HMIS. Use of HMIS data in planning health activities has to be emphasised to address local health needs. **-** Need to report urban health indicators also identified.
			Are the IT-enabled mechanisms user friendly?	**+** Yes, Capacity building of data collection and operating staff may further help
		Use of latest technology to improve efficiency and effectiveness of scheme implementation	What are the technologies being used in project implementation, service delivery?	**+** NUHM uses technology resources of NRHM for disease control programs, HMIS etc. **+** Telemedicine, teleradiology, teleconsultation, and tele-education are the recently launched IT mechanisms for better access to services.
Development, dissemination & adoption of innovative practices, technology & know-how	🟡	Fund allocation towards promotion of innovation	What percent of total allocation is directed towards development, dissemination and adoption og innovative practices and technology? How much of it is utilized?	**-** Data Not Available
		Contribution of improved practices in increasing outcomes	What is the status of acceptance of innovative practices and technologies amongst the target beneficiaries? What are the possible challenges faced hindering acceptance of the same?	**+** NHM National Summit on Good and Replicable Practices and Innovations in Public Healthcare Systems in India is a platform for sharing of innovations supported by the NHM; **+** National Health Innovation Portal (NHiNP) represents the MoHFW efforts towards identifying and nurturing good practices and innovations.
Stakeholder and Beneficiary behavioural change	🟡	Fund Allocation	What percent of total allocation is directed towards Awareness generation or sensitization? What is the utilization rate? and How much impact has it been able to generate in terms of behaviour change?	**-** Data Not Available
		Mechanisms to promote and	What are the existing mechanisms at State/District/Block level to promote	**+** Community outreach activities such as Monthly antenatal check-up days, Immunisation camps, ASHAs, VHSNDs, MMUs etc.

Cross-Sectional Theme		Indicative Area of Enquiry	Key Questions	Remark
		ensure behaviour change	beneficiary awareness and sensitization?	**+** Counselling and guidance sessions for adolescent girls on menstrual hygiene and eligible couples on family planning are implemented under the program.
			What activities are undertaken at District/Block level to promote adoption of good practices?	**+** Same as IEC/BCC activities under NRHM.
Research & Development	🔵	Fund Allocation	What percentage of total allocation (Sector as well as Scheme specific) is directed towards R&D? How much of that percent is being utilized?	**−** Data Not Available
		Institutes and departments dedicated for R&D	What is status of availability of any Institute or centre or department dedicated for R&D in teh Sector?	For policy research and development of frameworks and guidelines: **+** National Health Systems Resource Centre (NHSRC) acts as the apex institution for technical assistance and evidence-based policy/strategy development and State Health Systems Resource Centre (SHSRC) provides additional technical support to the State's Department of Health and Family Welfare. **+** The National Institute of Health and Family Welfare (NIHFW) acts as an 'apex technical institute' as well as a 'think tank' for the promotion of health and family welfare programs in the country.
		Private Sector participation in R & D	What is the percentage of private sector participation in R&D?	**−** Data Not Available
Unlocking Synergies with other Government Programs	🔴	Convergence (Inter-Ministerial/ Inter-Departmental/ Financial/ Human Resource/ Administrative/I	What are the existing mechanisms to ensure convergence across Schemes, Departments at different levels (i.e. National/State/District/Block) ? What activities are undertaken to ensure convergence at community level? Are there any Action Plans prepared at State/District/Block level to ensure the same?	**+** Convergence with different ministries and departments such as WCD, education, water & sanitation etc. has led to various successful initiatives. Though, emphasis has been made by various stakeholders in strengthening convergence and involvement of various ministries and departments for improvement in urban health. **−** -A lot more is required to achieve inter-sectoral convergence with – other ministries, disease control programs, other departments of MoHFW. **+** NUHM functions through urban local bodies such as municipal corporations, adding one more administrative layer for convergence.

Chapter 4: National Urban Health Mission

Cross-Sectional Theme		Indicative Area of Enquiry	Key Questions	Remark
		nstitutional/ Schemes)	What are the challenges hindering effective convergence?	
Reforms, Regulations	🟢	Adoption of models acts and reforms at governance, institutional and administrative level	What are the acts/rules/regulations adopted at different levels (National/State/District)?	➕ As discussed under cross sectional themes at Sector Level including PNCDT Act- to stop female foeticides; MTP- allows for termination of pregnancy up to 20 weeks of pregnancy; clinical establishment act 2010 etc.
			What are the challenges faced in effective implementation of the Model Acts and Regulations?	➖ 100% compliance of the above mention acts/rules is still desired.
Impact on and role of private sector, community/ collectives/ cooperatives and civil society in the scheme	🟡	Private Sector Participation	What is the percentage of private investment in the clusters/ programs run by the government?	➖ Data unavailable
			What incentives are available to promote private investments in the Sector?	➕ Different PPP models have been developed for undertaking projects such as promotion of high-end diagnostic services in medical colleges and establishment of regional diagnostic centers through PPP, telemedicine, MMUs, 108 & 102 Ambulance services and promoting easy availability of generic drugs in shops etc.
			How Private sector can help in improving value chain creation?	➕ Private sector can play an important role through – • increasing access to healthcare services in underserved regions. • Support through bringing in latest technology (such as telemedicine). • Capacity augmentation of public health sector • Involvement of NGOs and other civil bodies has proven to be successful and can further support better healthcare service delivery in the future.
			What are the challenges faced in attracting private sector participation?	➕ Low incentives and un-attractive terms and conditions are key challenges for private sector players to participate and invest.
		Public-Private Partnership	What provisions/incentives are existing to promote PPP in the Sector?	➕ NUHM Framework has a provision for partnership with private service providers (especially not-for-profit partners) to supplement governmental efforts.

🟢 Satisfactory	🟡 Average	🔴 Needs improvement	⚪ Not relevant/ applicable	🔵 Data unavailable

4.3   Issues and challenges

Infrastructure and Human Resources

- The Rural Health Statistics 2019 reports a total of 9,072 PHCs required in urban areas, while only 5,190 are operational. There is a shortage of 4,026 urban PHCs

- Slow recruitment procedures and availability of attractive opportunities in private sector have created shortages of HR at all levels in urban areas across states

- Continuous upskilling and enhancement of knowledge of existing health workforce is also important for effective health service provision. This is especially important for UPHC staff as these facilities form the hub for service delivery in urban areas

- Medical colleges were to play an important role in capacity building for the NUHM program, which has been observed to be low (KII Analysis)

Core Health Outcomes

- NUHM's targets for urban IMR, U5MR, institutional deliveries, and MMR have not been achieved.

Community Processes

- ASHA trainings are not localized. Local challenges of both the health infrastructure and health needs to be taken into consideration for designing training curriculum for urban ASHAs (KII Analysis)

- Support to ASHA (similar to ASHA facilitator in rural areas) is lacking in urban areas (KII Analysis).

4.4   Recommendations

Infrastructure and Human Resources

- Accelerated establishment and upgradation of urban public health facilities required as per norms

- Rationalization of all the existing healthcare facilities (from corporation, ESIC, defence, railways hospitals, medical colleges, maternity centres etc.) to ensure availability of 24×7 facilities with adequate and effective transportation rather than focus on only creation of infrastructure

- Increased use of telemedicine has been identified as a potential method to address the health needs of population in situations like COVID-19 pandemic

- Strategic purchasing from private sector may be considered for: a) IPD services; b) pilot basis for OPD services , post establishment of strict referral mechanism. This needs to be mapped and designed by states/UTs. Further, outreach activities also need to be planned separately in such cases

- Strengthening of initiatives to build the capacity of NUHM functionaries to be undertaken. Training institutes to be identified and supported to provide relevant orientation, knowledge and skills to address the training needs of different cadres under NUHM

- Shortfall of HR may be addressed by a variety of measures (e.g. walk-in interviews, campus recruitments, competitive remuneration, performance incentives etc.) to ensure filling of sanctioned posts

Core Health Outcomes

- Target year for urban health indicators needs to be defined

- Strategies may be re-designed as per the urban population's needs and challenges

- Outreach activities to be strategized to effectively reach out to the population. Activities should be done in the evenings as during the day most of the target population is at work

- Services to migratory population are being provided as part of NUHM, however the coverage needs to be improved further.

- Communicable diseases need special attention in urban areas where there is high migration and chances of transmission of infection are more because of high density of population. Most of the global communicable disease are observed to spread from urban to rural areas.

- Issues relating to poor drinking water, waste disposal system and lack of construction laws for new construction leading to careless water clogging and storage leads to vector breeding and vector-borne diseases. NUHM with focus on these issues can help to prevent and control vector-borne diseases.

Community Processes

- Supervisory hand-holding structure for ASHAs should be linked with NRHM

- Dedicated support in the form of a public health manager/facilitator to lead and direct ASHAs can be provided in urban areas

- ASHAs need to be trained in Interpersonal Communication (IPC)

Chapter 5: CSS- Tertiary Care Programs

5. Tertiary Care Programs

Section 5.1 provides background of the CSS-Tertiary Care Programs detailing goals, objective, targets and other details of the CSS. Section 5.2 discusses the performance of Tertiary Care Programs. Section 5.3 highlights the issues and challenges of the CSS followed by recommendations for the CSS in section 5.4.

5.1   Background

The CSS- tertiary care programs entails seven programs focussing on tertiary level infrastructure creation and manpower development for the same. The CSS aims to integrate itself with the existing NHM framework for optimal utilization of available resources and seamless provision of services to the patients (NHP, 2019).

The focus under the tertiary care program is on:
- creation of required infrastructure at tertiary level
- creation of Centres of Excellence which shall serve as Institutes to set standards and undertake research in these fields
- development of specialized manpower under these Programs

In 2017, all seven tertiary care programs were merged under one Tertiary Care Program. The budget for all the seven programs comes separately under the umbrella of tertiary care program (EY Primary Analysis: KII, 2019). The seven programs under the CSS have been approved for continuation till 2020 with an outlay of INR 2551.15 Crore by the Cabinet Committee on Economic Affairs (PIB , 2019)

The overview of seven programs under the umbrella of tertiary healthcare is as follows:

1. National Program for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS):

Initially limited to 100 districts across 21 states in the year 2010, the Program has now been expanded to other districts of the country. The Program aims to prevent and control the major NCDs with focus on health promotion, early diagnosis, management and referral of cases, besides strengthening the infrastructure and capacity building. However, the major boost to expansion and implementation of program came when it was decided to integrate its primary and secondary care components under the National Health Mission in 2013-14 (DGHS, 2019).

2. National Program for Health Care of Elderly (NPHCE):

The Program was initiated in June 2010 with the primary objective of providing preventive, curative and rehabilitative services to the elderly persons at various levels of health care delivery system of the country (Ministry of Health and Family Welfare, 2017). The tertiary component of the NPHCE has been renamed as Rashtriya Varishth Jan Swasthya Yojana (RVJSY) in 2016 (EY Primary Analysis: KII, 2019).

3. Telemedicine

The term "Telemedicine" was framed in the 1970s, which means "healing at a distance". It helps in improving patient outcomes by increasing access to care and medical information through the use of information communication technology (ICT). Provisions of telemedicine in India have been in existence since 1990s. Telemedicine Practice Guidelines, 2020 have recently been a part

of the practice to encourage telemedicine for increased accessibility and availability of healthcare services especially during pandemic/epidemic situations.

4. National Blindness Control Program (NBCP):

The National Blindness Control Program was launched in 1976 with the goal of reducing the prevalence of blindness by 0.3% by 2020. Under the tertiary component, the primary objective of the Program is Upgradation or Development of Regional Institutes of Ophthalmology (RIOs) where up to INR 6 crores of funds are provided to one RIO, which can be spent according to the specified norms (EY Primary Analysis: KII, 2019).

Various activities undertaken under this Program are geared towards achieving the goal of reducing the prevalence of blindness from 1.4% to 0.3% by 2020 and thereby strengthening the existing infrastructure facilities and developing additional human resources for providing high quality comprehensive Eye Care in all Districts of the country.

Key Activities of the Program is as follows:

1. Provision of super specialty and referral eye care services for diabetic retinopathy, glaucoma, childhood blindness, retinopathy of prematurity and keratoplasty (corneal transplantation) etc. at RIOs and Medical Colleges
2. Construction of modular Eye OTs at RIOs for providing modern and tertiary level eye care services
3. Training of eye surgeons in various specialties of Ophthalmology for skill development
4. Provision for supply of MK Medium to Government eye banks through Dr. R.P.Centre, AIIMS, New Delhi for preservation of donated corneas and improve corneal utility rate
5. Conducting Surveys (blindness & Visual Impairment Survey, Trachoma Survey etc.) through identified institutions.

5. National Mental Health Program:

*   Government of India launched the National Mental Health Program in 1982 keeping in view the heavy burden of mental illnesses in the community. The tertiary level component of NMHP includes Manpower Development scheme, Up-gradation of two Central Mental Health Institutes to provide Neurological and Neuro-surgical Facilities on the pattern of NIMHANS, Support to Central and State Mental Health Authorities, Research & Survey, Monitoring & Evaluation, Central IEC, establishing a Central Mental Health Team, developing a Mental Health Information System and conducting training for mental health professionals (NMHP Quarterly Evaluation, 2019)

*   44 mental hospitals set up and run by the respective State Governments have been developed so far (EY Primary Analysis: KII, 2019)

*   The Manpower Development Scheme consists of 2 sub-schemes- Scheme A: Centres of Excellence and Scheme B: Setting Up/ Strengthening PG Training Departments of Mental Health Specialities. The primary aim of these 2 sub-schemes has been to enhance the number of PG seats in all 4 sub-specialties – Psychiatry, Clinical psychology, Psychiatric social work and Psychiatric nursing (NMHP Quarterly Evaluation, 2019)

*   The difference between the two sub-schemes is that the beneficiary institute under Scheme A needs to increase or enhance the PG seats in all the four departments. Thus, the quantum of support (funds provided) from the government is more under Scheme A as compared to

Chapter 5: Tertiary Care Programs

Scheme B. Support (EY Primary Analysis: KII, 2019) and support required for different departments as described below:

Table 5-1: Support provided under Scheme B per department

Department	Psychiatry	Clinical Psychology	Psychiatric Social Work	Psychiatric Nursing
Funds provided per department (in INR Crores) (Approx.)	2.2	2.92	2.24	1.39

Source: EY Primary Analysis: KII, 2019

For Scheme B, it is not necessary that the beneficiary institute applies for support for all the four departments, it can apply for support from anywhere between one and four departments (EY Primary Analysis: KII, 2019).

6. National Programme for Prevention and Management of Trauma and Burn Injuries (NPPMT&BI)

- The pilot project initiated during 9th /10th FYP for strengthening Emergency Services in Hospitals on National Highways, was approved as a National Programme by CCEA during 11th FYP. The same was extended in 12th FYP with additional components such as-setting up of NISC to strengthen data aspects, provision of Rehabilitation services in level II and above TCFs, provision of monitoring cell, IEC activities, capacity building through various modes etc. For the extension of the Programme beyond 12th FYP, it was approved that Trauma care facilities up to District level may be supported under NHM. Out of total 80 Hospitals approved for setting up of TCFs during 12th FYP, 60 were District Hospitals (MoHFW, 2020).

- The Pilot Project for Prevention and Management of Burn Injuries (PPPBI), implemented during the 11th FYP, was approved as a National programme (NPPMBI) by CCEA during 12th FYP for setting up of Burn Units in 60 Medical Colleges, and Burn Units up to District Hospital level were to be supported under NHM (MoHFW, 2020).

7. National Tobacco Control Program (NTCP) & Drug De-addiction Program:

- The National Drug De-Addiction Program was rolled out in 1987-88 with the objective of providing affordable, accessible and evidence-based treatment for all substance use disorders and to build capacities of healthcare staff in recognition and management of substance use disorders (Ministry of Health and Family Welfare, 2020).

- The National Tobacco Control Program was launched in 2007-08 during the 11th Five-Year Plan and was scaled up in the 12th Five-Year Plan with the goal to reduce the prevalence of tobacco use by 5% by the end of the 12th Five-Year Plan.

5.2 Performance

The Performance of this CSS has been evaluated on:

a) Financial Performance
b) Program Level Performance (including REESI and Output Outcome)

5.2.1 CSS Financial Performance

Allocations for have decreased sharply from 2017-18 to 2019-20. Utilization also decreased considerably, especially whenthe need for tertiary care is increasing with increasing burden of NCDs. Therefore, the scheme has just performed average in terms of utilization of its allocations.

Figure 5-1 : Tertiary Care Programs Budget (in INR Crores)
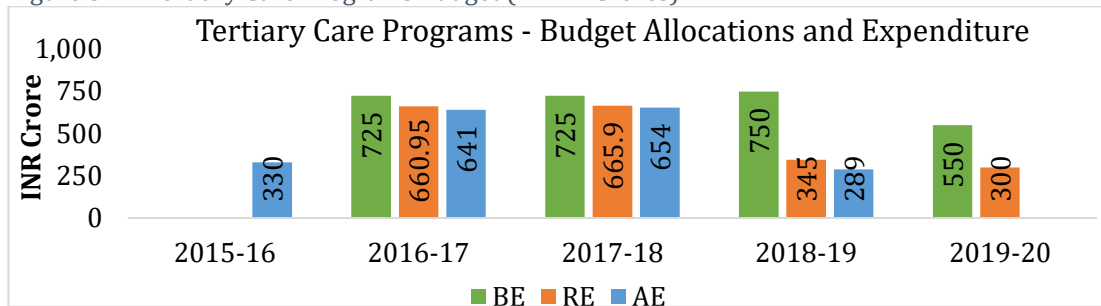
Source: Union Budget for Ministry of Health and Family Welfare 2019-20, 2018-19, 2017-18, 2016-17

Program Level Performance:

5.2.2 National Program for Prevention and Control of Cancer, Diabetes, CVD and Stroke (NPCDCS)

The focus of the program is on health promotion, early diagnosis, management and referral of cases, and strengthening the infrastructure through NHM and tertiary care. Under tertiary care component, State Cancer Institutes (SCIs) and Tertiary Care Cancer Centres (TCCCs) have been sanctioned which are either partially functional or non-functional[90].

- According to World Health Statistics, in India, the probability of dying from any of cardiovascular diseases, cancer, diabetes, chronic respiratory diseases between age 30 to 70 was 23.3% in 2016 and 24.2% in 2010 (WHO, Health gains from the Swachh Bharat initiative, 2018). This is a reduction of 3.71% in the chances of premature mortality due to NCDs in 6 years, showing an annual average decline of the order of 0.61% per year.

- The contribution of non-communicable diseases to Disability-adjusted life years (DALYs) increased from 30.5% in 1990 to 55.4% in 2016 which is a significant increase. Further, the contribution to total mortality due to NCDs also increased from 37.9% in 1990 to 61.8% in 2016.

- To provide tertiary care for NCDs, the government has established State Cancer Institutes (SCIs) and Tertiary Care Cancer Centres (TCCCs). The State Cancer Institutes (SCIs) will function as Centres of Excellence and are state-of-the-art treatment centres for different cancers including site specific specialties, minimal access surgery, multidisciplinary groups and Oncology Nursing care for better delivery of treatment, better outcome results and optimum use of resources.

- Under TCCCs, existing medical colleges / NGO Institutions / RCCs will be strengthened to provide comprehensive tertiary care services. The institutes will have well equipped and functional departments of Medicine, Surgery, Gynaecology & Obstetrics, ENT, Anaesthesia, Pathology and Radiology (Working group on disease burden: non-communicable diseases(NCDs), 2014).

- Under NPCDCS, the funds are provided to the states with the Centre to State share in the ratio of 60:40 except North-Eastern and Hilly States, where the share is 90:10 (DGHS, National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS), 2019).

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[90] 18 SCIs and 20 TCCCs have been approved till 2019-20 to provide tertiary level care to cancer patients. Of these only 1 is reported to be functional till September 2019 (EY Primary Analysis)

Chapter 5: Tertiary Care Programs

- During the FY 2014-15, 2015-16 and 2016-17, a total of 12 SCIs and 13 TCCCs were approved and first instalment of central share of funds was released. Additionally, 3 more SCIs and 7 TCCCs were sanctioned in 2017-18. Till March 2018, proposals for setting up of 15 SCIs and 20 TCCCs have been approved and first instalment of central share has been released to the states (Ministry of Health and Family Welfare, 2020). Only 1 SCI out of the 15 SCIs and 20 TCCCs has been reported to be functional till September 2019 (Ministry of Health and Family Welfare, 2020).

- The utilization against the budgeted expenditure has decreased to 33% in 2018-19 and increased to 76% in 2019-20, while it was 100% during 2017-18. Overall allocation of funds has also decreased from 2018-19 to 2019-20. Utilization % (in respect of BE)

Table 5-2: Financial Performance of NPCDS

NPCDS	BE (INR crore)	RE (INR crore)	AE (INR crore)	Utilization % (in respect of BE)
2016-17	300.0	283.9	285.9	**95%**
2017-18	300.0	300.0	299.87	**100%**
2018-19	295.0	100.5	98.2	**33%**
2019-20	175.0	160.0	132.16 (P)	**76%**

(P)- till December 2019
Source: MoHFW Annual Report, 2019

- In addition, 3 more SCIs – at Jabalpur, Haldwani and Jammu – have been approved in 2019-20 under the program (Ministry of Health and Family Welfare, 2020); (EY Primary Analysis:KII, 2019). Details of the institutes have been provided in Appendix 7.

- Due to slow pace of construction of new infrastructure, civil works and other repairs, the progress of infrastructure creation has been suboptimal (EY Primary Analysis).

- The Program has been facing challenges relating to human resource management such like attraction, recruitment and retention (EY Primary Analysis).

- States have not submitted utilization certificates for first instalment for the approved SCIs & TCCCs and second instalment of funds have not been demanded so far (EY Primary Analysis).

- There are two types of radiotherapy centres in India – standalone teletherapy facilities and both teletherapy and brachytherapy facilities. There are 468 licensed radiotherapy facilities in India equipped with 687 teletherapy units. There are 305 licensed remote after- loading brachytherapy units in the country (Atomic Energy Regulatory Board, 2018).

Table 5-3: Required, available and shortfall of radiotherapy resources in India

Radiotherapy Equipment	Recommendation in developed countries (per million people)	Units required for India (~1310 million population)	Existing infrastructure in India (as on December 31, 2018)	Shortfall (in %)
Teletherapy	4	5240	687	87%
Simulator	1	1310	90	93%
TPS	1	1310	500	62%
Brachytherapy (remote)	1	1310	250	81%

Source:National Health Profile, 2019; (Atomic Energy Regulatory Board, 2018); (Munshi, Ganesh, & Mohanti, 2019)

- In NPCDCS, for patients going to private institutions tracking is difficult under the program (EY Primary Analysis: KII)

Key Findings

- There has been a reduction of 11% in the chances of premature mortality due to NCDs in 4 years, showing an annual average decline of the order of 1.37% per year.

- Due to slow pace of construction of new infrastructure, civil works and other repairs, the progress of infrastructure creation has been suboptimal (EY Primary Analysis).

- States have not submitted utilization certificates for first instalment for the approved SCIs & TCCCs and second instalment of funds have not been demanded so far (EY Primary Analysis).

- The Program has been facing challenges relating to human resource management such like attraction, recruitment and retention (EY Primary Analysis).

- In NPCDCS, for patients going to private institutions tracking is difficult under the program (EY Primary Analysis)

Analysis on REESI+E Framework

Table 5-4: Summary of Evaluation of NPCDCS as per REESI+E Framework

Theme	Remarks
Relevance	**+** Non-Communicable Diseases like Cardiovascular Diseases (CVD), Cancer, Chronic Respiratory Diseases, Diabetes and other NCDs are estimated to account for around 60% of all deaths in India. **+** The contribution of non-communicable diseases to Disability-adjusted life years (DALYs) increased from 30.5% in 1990 to 55.4% in 2016 which is a significant increase. Further, the contribution to total mortality due to NCDs also increased from 37.9% in 1990 to 61.8% in 2016. **+** The objectives of the scheme are still valid. Losses due to premature deaths due to these NCDs are also projected to increase over the years. The NPCDCS program aims to prevent and control the major NCDs in the country.
Effectiveness	**–** 18 SCIs and 20 TCCCs have been approved till 2019-20 to provide tertiary level care to cancer patients. Of these only 1 is reported to be functional till September 2019. Additional time is required for the rest of the institutes to become functional. **+** The major boost to expansion and implementation of program was observed with integration of the primary and secondary care components under National Health Mission to provide a continuum of care.
Efficiency	**–** Fund utilization has been decreasing 76% in 2019-20 while it had been 100% in 2017-18. **–** Due to slow pace of construction of new infrastructure, the progress has been suboptimal.
Sustainability	**–** Continued support is required from both Centre and state government given the rising NCD burden. More time is required by the States to own a complete financial responsibility of the Program.
Impact	**–** With only 1 reported functional facility, impact is yet to be realized
Equity	**+** The tertiary level institutes aim to provide care to patients irrespective of their socio-economic status and contribute towards reduction in catastrophic health expenditure related to NCDs for poor patients. **–** Though equity is integrated in design of the Scheme, due to non-operational status of the facilities the same was not observed on ground

Satisfactory	Average	Needs Improvement	Data unavailable

Chapter 5: Tertiary Care Programs

Table 5-5: Output-Outcome Framework- National Program for Prevention and Control of Cancer, Diabetes, CVD and Stroke (NPCDCS)

National Program for Prevention and Control of Cancer, Diabetes, CVD and Stroke (NPCDCS)					
Output 🟢					
Output	Indicator	Target (2019-20)	Data	Source	Status
Approval for Setting up of State Cancer Institutes (SCI)	Setting up of State Cancer Institutes (SCIs)	Approval for setting up of -4 SCIs	4 SCIs were approved in 2019-20	EY Primary Analysis: KII, 2019; MoHFW	Met
Outcome 🔵					
Outcome	Indicator	Target (2019-20)	Data	Source	Status
Increase in availability of Radio therapy machines	Availability of Radiotherapy machines	Addition of machines in public sector in health care institutions	Number of teletherapy machines in India 2016 – 608 2017 – 648 2018 – 687 2019-20 – 855	NPCDCS Programme Data, MoHFW	Target data not available

5.2.3 National Program for Health Care of Elderly (NPHCE)

The scheme contributes towards increasing the longevity and quality of life of the elderly population. 18 out of 19 sanctioned Regional Geriatric Centres (RGCs) have functional OPDs and the 2 National Centres for Ageing (NCAs) will also become functional by 2020. Fund utilization in 2019-20 has reduced to 0% from 72% in 2017-18.

- There are approximately 9.63 Crore elderly people in India of which 8% elderly people (~77 Lakh) are physically immobile and require regular care (Home Care to Elderly in India - A Call to Action, 2019).

- Under the tertiary care services component of the scheme 100% funding is through Central Government.

- The utilization against the budgeted expenditure has decreased to 9.4% in 2019-20 while it was 71% during 2018-19. Allocation of funds has remained constant in the FY 2018-19 and FY 2019-20.

Table 5-6: Financial Performance of NPHCE

NPHCE	BE (INR crore)	RE (INR crore)	AE (INR crore)	Utilization % (with respect to BE)
2016-17	35.0	35.0	34.0	97%
2017-18	110.0	81.0	79.3	72%
2018-19	105.0	80.0	74.2	71%
2019-20	105.0	25.0	9.92	9%

Source: MoHFW Annual Report, 2020

- The RGCs provide tertiary care services through OPD and in-door admission in 30 bedded ward and contribute to development of specialized human resources through MD courses in geriatric medicine as well as research. 19 RGCs have been sanctioned in selected medical colleges of which 18 RGCs have functional OPD (NPHCE - NHM & Tertiary Components, 2019).

- Two MD-Geriatrics seats per RGC were sanctioned[91]. Presently 15 of 38 seats have been successfully set-up in 3 RGCs (EY Primary Analysis: KII, 2019).

- Indoor wards have not been set up at RGC: Patna and Kolkata (EY Primary Analysis: KIIs, 2019)

- Physiotherapy unit have not been set up at RGC: Patna, Kolkata, Hyderabad (Nizam) and Cuttack (EY Primary Analysis: KIIs, 2019)

- Laboratory services have not been started at RGC: Patna, Kolkata, Hyderabad (Nizam) and Cuttack (EY Primary Analysis: KIIs, 2019)

- Further 7 medical institutes (private & government) with 21 seats offer PG courses in geriatric medicine (MCI, 2019).

- The NCAs provide training and research for health professionals in the field of geriatrics (Ministry of Health and Family Welfare, 2020). 2 NCAs have been sanctioned so far at AIIMS Delhi in North and Madras Medical College, Chennai in South. Both the NCAs are expected to be functional by 2020 (EY Primary Analysis: KIIs, 2019). List of RGCs and NCAs provided in Appendix 7.

Table 5-7: Progress in operationalization under NPHCE

S. No	Institutions operationalised	OPD	Indoor wards	Physiotherapy units	Laboratory services
1	RGCs	18	16	14	13
2	NCA	To be operationalized by 2020			

Source: MoHFW Annual Report, 2020

- A 250-bedded Geriatric Care and Rehabilitation Centre has been sanctioned at PGIMER, Chandigarh (EY Primary Analysis: KII, 2019).

Figure 5-2 : Utilization of Geriatric Services under RGCs
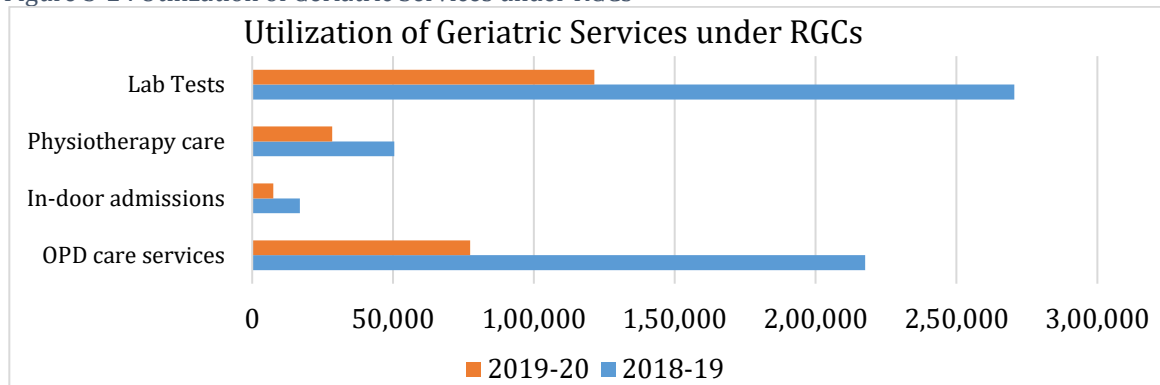
Source: MoHFW Annual Report 2018-19

- It was observed that some States have integrated NPHCE with other programs like palliative care program and AYUSH. For example, in Tamil Nadu there are geriatric palliative care nurses who are providing care to home-bound people out of which 80-90% are elderly (EY Primary Analysis: KII, 2019).

- Data not available: a) Referral cases from district hospitals and below; b) In-service training provided at different levels.

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[91] 38 seats in 19 RGCs

Chapter 5: Tertiary Care Programs

Key Findings

- The utilization of funds has decreased to 9.44% in the FY 2019-20 due to non-receipt of proposals for release of GIA under Reimbursement Mode from the implementing Agencies under the programme i.e. Regional Geriatric Centres (RGCs) and National Centre of Ageing (NCA).

- The utilization of geriatric services provided in RGCs have decreased from 2018-19 to 2019-20.

- Partial availability of services under each RGC reported.

- Indoor wards have not been set up at RGC: Patna and Kolkata (EY Primary Analysis: KIIs, 2019)

- Physiotherapy unit have not been set up at RGC: Patna, Kolkata, Hyderabad (Nizam) and Cuttack (EY Primary Analysis: KIIs, 2019)

- Laboratory services have not been started at RGC: Patna, Kolkata, Hyderabad (Nizam) and Cuttack (EY Primary Analysis: KIIs, 2019)

- Promotion of public private partnerships in geriatric healthcare has been provided for in the guidelines, however, no progress has been observed wrt the same.

- Data not available: a) Referral cases from district hospitals and below; b) In-service training provided at different levels.

Analysis on REESI+E Framework

Table 5-8: Summary of Evaluation of NPHCE as per REESI+E Framework

Theme	Remarks
Relevance	+ With the increase in elderly population in the country, the objectives of the scheme are still valid. The increased demand of geriatric care requires setting up of more tertiary level infrastructure and corresponding number of specialists and health staff trained to provide specialised care to elderly population in India.
Effectiveness	+ 18 out of 19 RGCs have functional OPDs and 15 PG seats have been created in three RGCs. The 2 NCAs will also become functional by 2020. – Utilization of geriatric services provided under RGCs (OPD Care services, In-door admissions, Physiotherapy care, Lab Tests) has reduced in 2019-20 from 2018-19
Efficiency	– The utilization of funds has decreased to zero in 2019-20, which could be attributed to no new RGCs/NCAs being sanctioned. + All the RGCs are either functional or in the process of being operational. Both the NCAs are also soon going to become functional.
Sustainability	– Continued grant is required from both the central and state governments for development of new centres with increasing ageing population.
Impact	+ Infrastructure created has contributed towards quality of life of the elderly population. – Impact is yet to be realized due to less number of sanctioned centres.
Equity	+ The scheme aims to provide tertiary level geriatric care to all the elderly in the country irrespective of their socio-economic background which has also been followed in the process of implementation. – Beneficiary data for different socio-economic groups is not available in public domain.

Satisfactory	Average	Needs Improvement	Data unavailable

Table 5-9: Output-Outcome Framework- National Program for Health Care of Elderly (NPHCE)

National Program for Health Care of Elderly (NPHCE)					
Output ⬤					
Output	**Indicator**	**Target (2019-20)**	**Data**	**Source**	**Status**
Provision of tertiary geriatric care services at Regional Geriatric Centres	Establishment of Regional Geriatric Centres in the selected medical facilities	19	19 RGCs have been sanctioned (18 have functional OPD facility)	Annual Report, MoHFW, 2018-19	Met
Provision of tertiary geriatric care services at NCA Development of training	Establishment of National Centres for Ageing (NCA)	2	NCA at AIIMS and NCA at MMC-both are under construction and expected to be functional soon	KIIs, MoHFW	Unmet
Outcome ⬤					
Outcome	**Indicator**	**Target (2019-20)**	**Data**	**Source**	**Status**
Provision of geriatric OPD, 30 bedded ward, research activities, imparting training, development of training material and creation of infrastructure to enable 02 PG seats in geriatric medicine	Beds in the RGCs	530 (cumulative)	433 functional beds in 16 RGCs (Cumulative) 570 beds sanctioned so far	Report 2019-20 by Central Programme division https://nphce.nhp.gov.in/reports-nphce/	Unmet
Each NCA will have provision of geriatric healthcare delivery with specialty OPD, 200 beds, teaching and training facilities for health professionals, research activities, development of 15 PG seats in geriatric medicine	No. of Beds in National Centres for Ageing	200	200 in both AIIMS & MMC have been sanctioned	Annual Report, MoHFW, 2018-19	Unmet
	Number of PG seats in Geriatric medicine	5	PG seats have not been created so far in NCAs	KIIs	Unmet

5.2.4 Telemedicine

The scheme provides telemedicine services to inaccessible areas, which is being done through the telemedicine network. The tele-education aspect has been covered using national medical college network which has been connected to 46 medical colleges in the country.

- Utilization has decreased from 75% in 2017-18 to 35% in 2019-20.

Table 5-10: Financial Performance of Telemedicine

Telemedicine	BE (INR crore)	RE (INR crore)	AE (INR crore)	Utilization % (in respect BE)
2016-17	40.0	30.0	29.7	74%
2017-18	40.0	39.9	29.8	75%
2018-19	55.0	45.0	42.0	76%
2019-20	45.0	30.0	15.7 (P)	35%

(P)- till December 2019
Source: MoHFW Annual Report, 2020

Chapter 5: Tertiary Care Programs

- Infrastructure established under the telemedicine scheme is as follows (Ministry of Health and Family Welfare, 2020):

a) **National Medical College Network (NMCN):** The objective is to facilitate tele-education (knowledge sharing, tele- CME, sharing of surgical & interventional skills, Virtual class room, capacity building of HR etc.), access to specialist consultation (tele-consultation, tele-follow-up, m-Health applications, remote monitoring, tele-pathology, tele-cardiology, tele-radiology, tele- dermatology, tele-ophthalmology, tele-oncology etc. services) and access to electronic knowledge repositories (eBooks, e-Journals and open source web knowledge resources), creating digital library infrastructure facilitating medical researchers and knowledge seekers to have continuing education program in respect of basic and recent developments. In NMNC, 50 Government Medical Colleges are interconnected through the National Knowledge Network. As of 2018-19, this installation has been completed in 49 colleges (Ministry of Health and Family Welfare, 2020).

b) **National Resource Centre**: NRC has been established with centralized infrastructure at Lucknow and 7 Regional Resource Centres[92] with required infrastructure (Ministry of Health and Family Welfare, 2020).

   The following facilities have been developed at these centres:

   - State of the art digital lecture theatre with integrated 3D projection system
   - Tele-medical video collaborative environment (Virtual Tumour Board) for cancer patient management
   - Centralized Multipoint Control Unit (MCU) integrated with gatekeeper facilities
   - Centralized web casting / streaming services for providing telemedicine services

c) **National Telemedicine Network (NTN):** This initiative was launched with a vision to provide telemedicine services to remote areas by upgrading the existing government health facilities. Information technology is used to address the issue of unavailability of doctors and specialists in rural areas. 10 States have been financially supported for strengthening State telemedicine initiatives under NTN in the last four years (EY Primary Analysis: KII, 2019).

Table 5-11: Example of State Telemedicine Network

State Telemedicine Network	Initiatives
Odisha	>16,000 tele-consultations and tele-follow ups till end of May 2017 - Sixteen batches of PG trainees through online teaching on 3141 topics from August 2001 to May 2017 490 training courses for medical professionals and para-medical staff of different districts of Bhubaneswar till end of May 2017
Maharashtra	- Control Node at Sir J.J. Hospital Mumbai - Speciality node at 06 Medical Colleges 62 Patient Nodes 136339 patients utilized the services from 2008-May, 2016
Punjab	- All District Hospitals and 3 Medical Colleges are connected to PGIMER 6109 Consultations from 2008- August, 2016

Source: Telemedicine for Rural Mass-Current Initiatives and Future Scope, 2018

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[92] NRC cum Central RRC- SGPGIMS, Lucknow; RRC North- PGIMER, Chandigarh; RRC Central- AIIMS, New Delhi; RRC South-JIPMER, Puducherry; RRC East-IMS BHU, Varanasi, RRC West- KEM, Mumbai, RRC North East- NEIGRIHMS, Shillong, RRC- South, SCTIMST, Thiruvanathapuram.

ISRO in collaboration with State Governments has established a telemedicine network that covers about 384 hospitals with 60 specialty hospitals connected to 306 remote / rural / district / medical college hospitals and 18 Mobile Telemedicine units.

d) **Tele-Radiology (NIC-Delhi):** The CollabDDS Online Radiology Services (CORS) project was launched with the objective of providing online radiology interpretation on reports, for Continuing Medical Education (CME) for Medical Officers with an effort to mitigate the lack of radiologists at primary healthcare institutes. The project was launched on August 31, 2018 for 79 PHC/CHC/DH (Ministry of Health and Family Welfare, 2020). Till September 2019, the program has been implemented in 90+ health facilities (MoHFW, 2019).

e) **Hospital Information System (HIS):** Online portal for patient's EHR/EMR in public health facilities upto PHC level.
Implementation status under the program (Ministry of Health and Family Welfare, 2020):
   a. **eHospital application (NIC)**: more than 320 Hospitals
   b. **eSushrut application (C-DAC)**: more than 100 health facilities in states of Rajasthan, Maharashtra, Odisha, Punjab, Delhi.
Financial assistance has been provided to 22 States/UTs for HIS application implementation.

f) **SATCOM-based Tele-Medicine Nodes at Pilgrim places:** Tele-medicine nodes have been being set-up at pilgrimage places using Space Technology Tools for telemedicine facility between identified patient-end health facilities and specialty hospitals in collaboration with Department of Space for health awareness. For example, Telemedicine Node at Pampa hospital at the base camp of Ayappa pilgrimage, Telemedicine node at Pooh, Himachal Pradesh interlinked with PGIMER, Chandigarh.

g) **National Health Helpline** (Doctor on Call) has been established as a national level call centre for general health related problems to primarily help the rural population. The helpline is currently functional in 11 States (EY Primary Analysis: KII, 2019).

h) **National Identification Number (NIN)**: NIN is a unique identification number & key requirement for achieving inter-operability and creation of Electronic Health Records (EHRs). Around 99% of public health facilities have been allocated NIN (MoHFW, 2019).

i) **National Health Resource Repository:** It was created with a vision to create a comprehensive registry with details on infrastructure, services, patient load, GIS, manpower, equipment for all public and private health facilities. Currently, 60% of health facilities with over 1400 datasets per facility have been successfully verified for registration (MoHFW, 2019).

j) Various States have been partnering with private players PPP Model for increasing the availability of services. A few examples shown in Table 5-12.

Table 5-12: Examples of Telemedicine being implemented with private sector participation

State	Details
Uttar Pradesh	The project has 2 components – Video-consultation (in 250 CHCs of 28 districts) and Tele-consultation (in entire UP) • Tele consultation: o The call centre will be set-up in any location of state Uttar Pradesh preferably Lucknow. Any beneficiary can seek help from call centre from any location of state Uttar Pradesh. • Video-Consultation by 13 specialist (MD/DNB): o Apollo Cluster 1 (120 CHC in 14 Districts)

	o Pawanshree Cluster 2 (130 CHC in 14 Districts)
Tamil Nadu	• Nexus PPP with government for one centre with 15 dialysis machines • Apollo PPP with one centre and 9 dialysis machines
Andhra Pradesh	B Braun PPP- 11 dialysis centres established in district hospitals- Chittoor, Guntur, Hyderabad etc.

Case Study 26 – Teleophthalmology in Tripura - Tripura Vision Centre

Introduction

Tripura Vision Centre was initiated in 2007 to deliver eye care services to all the people in the state using ICT. The main objective of the project was to improve the access of primary and preventive eye care services to rural areas of Tripura by adopting emerging developments in both ICT and medical technologies.

Implementation of the Practice:

- Key stakeholders include NHRM, Department of Health and Family Welfare, Government of Tripura, IL&FS, Arvind Eye eCare System

- The project was initiated on a PPP model, with Department of Health and Family Welfare, Tripura as the apex agency.

- The teleophthalmology project required setting up of Vision Centres (VCs) in all the blocks of the state to meet the requirements of the rural population of Tripura. The project was implemented in phases to cover all blocks of rural Tripura.
  The VC have been established adjacent to Information Centres in order to leverage the existing Tripura State-wide Area Network (TSWAN) infrastructure. ICT has been utilized to transfer the images of the diseased eye to the referral centre where the pictures are diagnosed and prescribed the modality of treatment.

- The project was implemented in a phased manner:

PHASES	PROGRESS
PHASE 1	The first pilot Vision Centre was set up in Melaghar block in April 2007 and is operational to date.
PHASE 2	• The second phase scaled the vision center network to 10 blocks in West Tripura district covering a population of approximately 15,32,982. • This phase is also comprised of the enablement of digital patient medical records in the Vision Centres using database management solution, the "Vision Centre Management System (VCMS)". It also included setting up of private wireless network with a bandwidth of 384 Kbps expandable up to 2Mbps.
PHASE 3	• 29 Blocks of the State were covered to bring a state-wide network of Tele ophthalmology services. • Apart from setting up Vision Centre infrastructure at 40 + 2 locations, IL&FS also set up a core mini data centre for maintaining electronic medical records and connectivity network operations centre (NOC) at IGM
PHASE 4	The Fourth Phase or the present phase was commissioned in the year 2014 with the introduction of four new Vision centres.

- Patient Examination Procedures:
- The ophthalmic assistant, an in-charge of Vision Centre- registers the patient, does the primary examination, notes down all relevant details, captures the image of the eye (external, anterior chamber &/or fundus) and uploads this with the history and

examination details into the software application for specialist sitting in the IGM hospital, Agartala to review,

confirm the diagnosis and decide on treatment modalities.

o One senior Ophthalmic Assistant at the IGM hospital first reviews all patient details and based on the seriousness of the condition refer the case to the specialist for further examination and treatment.

o If the doctor requires further information from the patient, Tele-consultation is established between doctor at IGM hospital and patient at the respective Vision centre. After the complete examination doctor issues a prescription to the patient. If there are more examinations required patient is requested to visit IGM hospital. Diagnosis is made based on the history, current symptoms and image of the eye. At the end of the consultation specialist prescription is printed by Ophthalmic Assistants (OA) and is given to the patient. OA also explains medicine and instructions to the patient and counsels him in the case of referral for further treatment at IGM Hospital Agartala.

o It takes around 15-20 minutes to examine a patient, however for the Teleconsultation and treatment patient is to wait for 30-45 minutes. Each Vision Centre is daily visited by 15-20 patients on average. At IGM Agartala each doctor review at least 15-20 patient records on software per day apart from routine OPD at the IGM.

Results

Till March 2016, the project had screened 4.72 lakh patients across 44 VCs. The number of women screened n these VCs are more than 40%. The trend indicated that higher number of women are accessing the services of the VCs as compared to earlier trends, as they have access to the services closer to their homes.

Lessons Learnt

The VCs have helped in screening a significant proportion of eye conditions such as refractive error, cataract, glaucoma, keratitis, diabetic retinopathy, infections, fundus examination and some low vision carefree of cost.

Conclusion

This project has been cost-efficient with the sharing of specialized health care services and can be scaled with more health care services through tele-medicine.

Further Readings

Pathak,S., & Kumar, B. (2017). Wireless teleophthalmology: A novel, low-cost, flexible network architecture and its performance evaluation for remote eye care solutions. TELEMEDICINE and e-HEALTH. 23(9). 753-762.

Key Findings:

- In SGPGI Lucknow, from 2001 to 2017, 1716 teleconsultation sessions were conducted (Evaluation of the e-Health scheme "Program for strengthening of Telemedicine and e-Health Services", 2017).

- Telemedicine has not been utilised to the maximum in providing services in urban areas where there is better awareness and scope of acceptance (EY Primary Analysis: KII, 2019).

- Various initiatives have been undertaken under this Scheme for adoption of technology and digitization of health services.

Chapter 5: Tertiary Care Programs

Analysis on REESI+E Framework

Table 5-13: Summary of Evaluation of Telemedicine as per REESI+E Framework

Theme	Remarks
Relevance	+ The main objective of the scheme includes providing telemedicine services to remote areas, which is being done through the telemedicine network. The tele-education aspect has been covered using national medical college network which has been connected to 46 medical colleges in the country. The scheme objectives still hold valid as there is a need for expansion of network with 100% coverage and better utilization of services.
Effectiveness	+ ISRO in collaboration with State Governments has established a telemedicine network that covers about 384 hospitals with 60 specialty hospitals connected to 306 remote/rural/district/medical college hospitals and 18 Mobile Telemedicine units. + The scheme has been effective in providing specialised diagnostic and treatment services to people in remote locations through a network of 46 medical colleges, 18 mobile telemedicine unit and 384 hospitals. − Beneficiary data with respect to utilization of these facilities is not available in public domain. − Data for lectures, live surgery transmissions, tele-education and tele-consultation sessions not available in public domain. + Telemedicine Practice Guidelines, 2020 have been adopted to encourage use of telemedicine for increased accessibility and availability of healthcare services in under-served areas especially during pandemic/epidemic situations.
Efficiency	− Utilization has decreased from 75% in 2017-18 to 35% in 2019-20. − Fund utilization capacity needs improvement
Sustainability	− The issue of sustainability with telemedicine depends upon the capacity of the hospital to maintain the services after capital support required for initial phases of implementation. − Continued grant is required from both the central and state governments for development of new centres with increasing ageing population. + Telemedicine has also been implemented through public private partnership.
Impact	− The scheme aims to provide timely and specialised healthcare services to people in remote areas of the country. It also aims to reduce OOPE on health by reducing the cost of healthcare services − Low visibility of tele-medicine in different geographies within the country observed even where shortage of specialists at health facilities exists. − The scheme only covers a few remote locations and population groups linked to telemedicine network of medical colleges and hospitals. Accurate details on population coverage through telemedicine is not available in public domain.
Equity	+ Telemedicine has made healthcare more accessible to people living in remote urban-rural areas

■ Satisfactory	■ Average	■ Needs Improvement	■ Data unavailable

Table 5-14: Output-Outcome Framework- Telemedicine

Telemedicine					
Output ●					
Output	**Indicator**	**Target (2018-19)**	**Data**	**Source**	**Status**
National Medical College Network (NMCN):	Number of Medical Colleges with Tele-	1000 Lectures for continuous Medical Education (CME), 100 Live Surgery transmission over National Medical College	National Medical College Network:	(MoHFW, 2019)	Data not available

Availability of Doctors for Specialist Consultation. Availability of ICT infrastructure for Tele-Education	Medicine, Tele-Education Infrastructure	Network (NMCN) from 50 Medical Colleges. Providing Tele-education service to 5000 students of these 50 colleges and online streaming on NMCN Website for students from other Medical Colleges.	49 out of 50 colleges have been connected and are operational.		
Improved health care service delivery, accessibility and affordability Adoption of Tele-Education services in Medical Colleges by Students	Number of students utilizing tele-education services in medical colleges	Availability of e-Content for approximately 1,00,000 medical students of Govt. Medical Colleges for anytime anywhere access, self paced learning, availability of live surgery video and lectures, a 2. Short term courses for skill enhancement of Field level functionaries such as ASHA, ANMs, etc. and continuous Medical Education (CME) of Field level doctors.			Data not available

Outcome ⬤					
Outcome	**Indicator**	**Targets (2018-19)**	**Data**	**Source**	**Status**
Improved health care service delivery, accessibility and affordability Adoption of Tele-Education services in Medical Colleges by Students	Number of students utilizing tele-education services in medical colleges	Roll out of Tele-Education service in 50 Medical Colleges	49 colleges have National Medical College Network.		Utilization data not available

5.2.5 National Program for Control for Blindness and Visual Impairment (NPCBVI)

Scheme's objective to treat patients with blindness and provide them with tertiary level eye care has been delivering positive results with 19 established Regional Institutes of Ophthalmology (RIOs) and, ophthalmologists present in every district in the country.

- The estimated prevalence of blindness has reduced to 0.36% in 2019 from 1% in 2006-07 (National Blindness and Visual Impairment Survey, 2019) indicating that the program is close to achieving WHO, 2020 target of 0.3% and NHP, 2017 target of reducing the prevalence of blindness to 0.25% by 2025.

- Under NPCBVI, funds are shared in 60:40 ration between the Centre and States respectively, except in north-eastern states where the ratio is 90:10 (DGHS, 2019).

- The utilization of funds has decreased to 7% in 2019-20 from 98% in 2017-18.

Chapter 5: Tertiary Care Programs

Table 5-15: Financial Performance of NPCBVI

NPCBVI	BE (INR crore)	RE (INR crore)	AE (INR crore)	Utilization % (with respect to BE)
2016-17	15	15	13.38	89%
2017-18	25	25	24.52	98%
2018-19	30	17	2.82	9%
2019-20	20	5	1.33(P)	7%

(P)- till December 2019
Source: MoHFW Annual Report, 2020

- Other important aspects of the Program include:

a) **Regional Institutes of Ophthalmology (RIO)**

- Under NPCBVI, 19 RIOs have been established by the Central Government to provide tertiary level eye care services to the patients (NPCBVI, 2019). Other than the RIOs, the grants are also given to medical colleges for equipment in the eye department (DGHS, 2019).

- Utilization certificate for the grant are awaited from most of the RIOs (except Patna and Cuttack).

- Partnership with NGOs and civil societies has been successful in providing eye care treatment and services (EY Primary Analysis: KII, 2019). For example: small incision cataract surgery facilities are available in RlOs Medical colleges (100 percent), Private as well as NGO hospitals (94 percent), District hospitals (91 percent) and sub-district hospital CHCs (60 percent) (MoHFW, 2015)

b) **Training**

- Training institutes have also been identified under this program. These training institutes have been providing training to the ophthalmologists nominated from different States including the NGO partners providing eye care services (DGHS, 2019).

- Grants are released as per the established per person training norms. The grants earlier worked on advance payment mode, however, now the grants operate on reimbursement mechanism (DGHS, 2019).

Figure 5-3: No. of eye surgeons trained in various specialties of ophthalmology
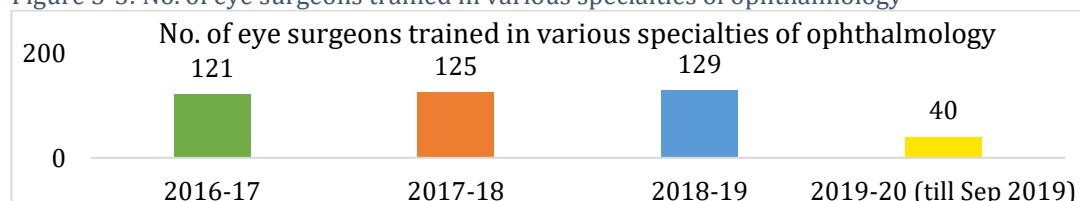
Source: Quarterly Review: NPCB, 2019

- The number of eye surgeons trained under the scheme per year has been approximately constant.

- Additionally, 450 Ophthalmologists have been trained in a 2-day workshop in early diagnosis and treatment of Glaucoma during 2016-17 & 2017-18 (Quarterly Review: NPCB, 2019).

c) **Research**

- The tertiary services offered under the program, also include a research component through which the National Blindness Survey is conducted, and the report was last released in October 2019 (Evaluation for National Program for Control of Blindness: NPCB, 2014).

- Various other researches have been conducted by different agencies such as ICMR, Aravind Medical Research Foundation etc. for continued evaluation of the Program.

d) Technology

- Tele-ophthalmology model has been prevalent for reaching rural and underserved areas in various states like Andhra Pradesh, Kerala and Tripura (DGHS, 2019).

- Program has developed an online monitoring mechanism using MIS for proper maintenance and timely of eye care data activities.

e) IEC and Outreach

- In NPCBVI, to improve the quality of services provided, substantial efforts were made in the 11th Five-Year Plan such as banning outdoor surgical camps, putting emphasis on Intraocular Lens (IOL) implantation in cataract surgery at the institutional level and greater coverage for women and underprivileged sections of the society.

Key Findings:

- Partnership with NGOs and civil societies has been successful in providing eye care treatment and services (EY Primary Analysis: KII, 2019).

- Estimated prevalence of blindness reduced to 0.36% in 2019, close to achieving: a) Program target: 0.3% for 2020 and b) NHP target: 0.25% for 2025.

- The number of eye surgeons trained under the Program per year has remained relatively unchanged (Quarterly Review: NPCB, 2019). Very few nominations of eye specialists are sent by States for refresher and super-speciality trainings (EY Primary Analysis: KII, 2019).

- Physical progress reports and utilization certificate for RIOs have not been submitted timely by the States (EY Primary Analysis: KII, 2019).

- Modular Eye OTs for providing super-speciality eye care services have not been developed at most of the RIOs (EY Primary Analysis: KII, 2019).

Analysis on REESI+E Framework

Table 5-16: Summary of Evaluation of NBCP as per REESI+E Framework

Theme	Remarks
Relevance	+ The reduction in prevalence of blindness is India is 0.36%- need to achieve the 2020 target of 0.3% and 2025 target of 0.25%.
Effectiveness	+ All the 19 sanctioned RIOs have been supported under the program. + Trained ophthalmologists are present in every district in the country. + Public Private Partnership (PPP) especially with NGOs and civil societies has been successful in providing eye care treatment and services
Efficiency	− The utilization of funds has decreased to 7% in 2019-20 from 98% in 2017-18. − Physical progress reports and utilization certificate for RIOs have not been submitted timely by the States − The number of eye surgeons trained under the Program per year has remained relatively unchanged
Sustainability	+ In the beginning, NPCBVI was a 100% centrally sponsored program (from 12th FYP it is 60:40 in all States/UTs and 90:10 in hilly states and all NE States) − Continued grant is required from both the central and state governments.

Chapter 5: Tertiary Care Programs

Impact	**+** Prevalence of blindness in the country is 0.36% which is down from around 1% in 2006-07 **−** Beneficiary level utilization data not available in public domain
Equity	**+** Tele-ophthalmology model has been prevalent for reaching underserved areas **−** Beneficiary level data not available

	Satisfactory		Average		Needs Improvement		Data unavailable

Table 5-17: Output-Outcome Framework- National Program for Control of Blindness

National Program for Control of Blindness					
Output ●					
Output	**Indicator**	**Target (2019-20)**	**Data**	**Source**	**Status**
Strengthening of Regional Institutes of Ophthalmology (RIOs), Central Government Hospitals and Medical Colleges of States, Training of Eye Surgeons, Supply of MK Medium (corneal storage medium) to various Government Eye Banks in the country, etc.	No. of Training session for Eye Surgeons	20	The number of eye surgeons trained: 2016-17- 121 2017-18- 125 2018-19- 129 2019-20- 80	Quarterly Review: NPCB, 2019; MoHFW	Met
Number of sensitization training sessions for trachoma elimination in previously endemic states for Trachoma	Training sessions of State & District Program officers and Ophthalmologists	14	Training was supervised and monitored by the NPCB division, Govt. of India for 14 batches and covering 9 States/UTs. Around 250 District Programme Managers were sensitized during 2019-20 for trachoma Elimination in the previously endemic State/UTs.	MoHFW, 2020	Met
Outcome ●					
Outcome	**Indicator**	**Target (2019-20)**	**Data**	**Source**	**Status**
Increase in number of trained eye surgeons	No. of eye surgeons trained	20 eye surgeons trained for cataract surgery	80 surgeons were trained	MoHFW, 2020	Met
Increase in number of trained SPOs and Ophthalmologist	Number of State & District Program Officers and Opthalmologists	250 State & District Program Officers and Opthalmologists	250 State & District Program Officers and Opthalmologists have been trained	MoHFW, 2020	Met

5.2.6   National Mental Health Program (NMHP)

The Program by establishing 25 Centres of Excellence and 47 PG Departments in mental health specialties has improved the access to tertiary care services and increased the number of qualified mental health professionals in the country. There is a strong need to create widespread awareness about the program at different levels in the community.

- The utilization of funds has reduced to 0% in 2019-20 from over 100% utilization in 2017-18.

Table 5-18: Financial Performance of NMHP

NMHP	BE (INR crore)	RE (INR crore)	AE (INR crore)	Utilization % (with respect to BE)
2016-17	35	35	33.95	**97%**
2017-18	35	45	43.58	**125%**
2018-19	50	5.5	2	**4%**
2019-20	40	5	0.01 (P)	**0%**

(P)- till December 2019
Source: MoHFW Annual Report, 2020

- Utilization certificates, progress report, etc. in respect of the institutions supported have not been submitted.

- Different components funded under the scheme are described below:

a)   Under Scheme A, 25 government-run Mental Health Institutes/Hospitals[93] were selected for development as **Centres of Excellence** and supported for increasing PG courses in the four departments of psychiatry, clinical psychology, psychiatric social work and psychiatric nursing.
   - Completion status (EY Primary Analysis: KII, 2019):
     o   9 institutes have achieved 50% or more completion
     o   Remaining 16 have achieved less than 50% completion with 5 yet to receive funds from the state governments.
   - Timeline for completion (EY Primary Analysis: KII, 2019):
     o   1 year has been set for institutes with over 50% completion
     o   2 years for institutes with less than 50% completion
     o   3 years for institutes yet to receive funds from the state

b)   Under Scheme B, support was provided to 47 PG Departments[94] in 19 institutes.
   - Completion Status (EY Primary Analysis: KII, 2019):
     o   22 PG departments (in 9 institutes) have achieved 50% or more completion
     o   Remaining 25 PG departments (in 10 institutes) have achieved less than 50% completion with 3 yet to receive state government funds
   - Timeline for completion (EY Primary Analysis: KII, 2019):
     o   1 year has been set for institutes with more than and less 50% completion
     o   2 years for institutes yet to receive funds from state governments

- Number of seats created under NMHP for manpower development is 3050 (1,999 PG seats under Scheme A and 1,051 PG seats under Scheme B).

- As per approval for continuation of the Scheme, henceforth, for the projects to be implemented by States/UTs, first instalment of the approved Central share will be released as an advance to

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[93] 11 during the 11th Plan period and 14 during the 12th Plan Period
[94] 27 during the 11th Plan period and 20 during the 12th Plan Period

the State/UTs. The remaining funds, to be released on reimbursement basis after submission of the Utilization Certificates for the funds already released.

- According to MCI, there are 212 medical colleges in the country providing MD in Psychiatry with 813 total combined seats and 26 colleges providing diploma in Psychological Medicine with a total of 82 seats.

- Government is also augmenting the availability of manpower to deliver mental healthcare services in the underserved areas of the country by providing online training courses to various healthcare service providers like medical officers, psychologists, social workers and nurses to deliver quality mental healthcare services throughout the country through the Digital Academies established at the three Central Mental Health Institutes (EY Primary Analysis: KIIs, 2019).

- 0.3 psychiatrists per 1,00,000 people existed in India in 2014, the number decreased to 0.29 psychiatrists per 1,00,000 in 2017 (Mental Health Atlas , 2014); (Mental Health Atlas, 2017). In other high-income countries, there have been 6 psychiatrists per 1,00,000 population, demonstrating that India still lags far behind in the field of mental health services compared to developed nations (Mental Health Atlas, 2017).

- The total number of mental health workers per 1,00,000 people increased from 0.6 in 2014 to 1.93 in 2017 (Mental Health Atlas , 2014); (Mental Health Atlas, 2017), which is an impressive achievement. Status of other HR in the field of mental health are mentioned below:

Table 5-19: Availability of Mental Health Professionals

Manpower	Availability
Psychiatrist	3,827
Clinical Psychologists	898
Psychiatric Social Workers	850
Psychiatric Nurses	1,500

Source: MoHFW, 2020

- The availability of psychiatrists has been varying from 0.5 in Madhya Pradesh to 1.2 per 100,000 population in Kerala.

- Through digital academy, technology has been leveraged to provide trainings to service providers for increasing access.

- To augment the mental health HR in India, the government has established a Digital Academy through NIMHANS[95] Bangalore, CIP[96] Ranchi and LGBRIMH[97] Tezpur Assam. Through this academy, the govt is conducting large scale digital training of service providers. As discussed earlier in table 3-29.

Key Findings:

- 0.3 psychiatrists per 100,000 people existed in India in 2014, the number decreased to 0.29 psychiatrists per 100,000 in 2017 (Mental Health Atlas, 2014) (Mental Health Atlas, 2017). In other high-income countries, there have been 6 psychiatrists per 1,00,000 population, demonstrating that India still lags far behind in the field of mental health services compared to developed nations (Mental Health Atlas, 2017).

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[95] National Institute of Mental Health and Neuro-Sciences
[96] Central Institute of Psychiatry
[97] Lokopriya Gopinath Bordoloi Regional Institute of Mental Health

- The availability of psychiatrists has been varying from 0.5 in Madhya Pradesh to 1.2 per 100,000 population in Kerala.

- Through digital academy, technology has been leveraged to provide trainings to service providers for increasing access.

- Utilization certificates, progress report, etc. in respect of the institutions supported are not been submitted

Analysis on REESI+E Framework

Table 5-20: Summary of Evaluation of NMHP as per REESI+E Framework

Theme	Remarks
Relevance	**+** India has ~0.75 Psychiatrists per 100,000 populations, while the desirable number is anything above 3 Psychiatrists per 100,000. This Program aims to increase the number of PG seats in the field of mental health and has subsequently increased the number of psychiatrists in the country.
Effectiveness	**+** 25 Centres of excellence and 47 PG departments have been developed and over the last decade, around 3050 PG seats have been developed under the program. **−** 16 Centres of excellence and 25 PG departments have <50% completion status
Efficiency	**−** The utilization of funds has reduced to 0% in 2019-20 from more than 100% utilization in 2017-18. **+** Release of funds to the Institutes supported under Manpower Development Schemes would henceforth be on a reimbursement basis
Sustainability	**−** Continued grant is required from both the central and state governments.
Impact	**+** The Program is creating mental health professionals (mental health workers per lakh population increased from 0.6 in 2014 to 1.93 in 2017) to deal with the shortfall of psychiatrists in the country. **−** Beneficiary level data is not available in public domain **+** 4,053 total mental health professionals enrolled from digital training
Equity	**+** Services available for all **−** Beneficiary level data not available to assess equity parameter

	Satisfactory		Average		Needs Improvement		Data unavailable

Table 5-21: Output-Outcome Framework – National Mental Health Program

National Mental Health Program					
Output 🟢					
Output	**Indicator**	**Target (2019-20)**	**Data**	**Source**	**Status**
Improved Coverage of Mental Health Services	Number of students graduating with a PG in mental health specialties in 2018-19	1,211	3,050 PG Seats created under Scheme A and Scheme B so far	Reports received from Institutions supported under Scheme-A and Scheme-B of NMHP	Met
Outcome 🔵					
Outcome	**Indicator**	**Target (2019-20)**	**Data**	**Source**	**Status**
Increased availability of mental health professionals	% Increased availability of mental health professionals	2%			Data not available

Chapter 5: Tertiary Care Programs

5.2.7 National Programme for Prevention and Management of Trauma and Burn Injuries (NPPMT&BI)

The main objective of the scheme is to reduce deaths and disabilities due to trauma & burn injuries. The three levels of trauma care facilities – L1, L2 and L3, based on the US model, have played a major role in addressing different types of trauma patients.

The name of the Programme during 11th FYP was- 'Assistance for capacity building for developing trauma care facilities in Govt. Hospitals' and during 12th FYP was 'Capacity building for developing trauma care facilities in Govt. Hospitals on National Highways'. Beyond 12th FYP, (2017 onwards), the trauma and burn components were merged and the Programme was continued as "National Programme for Prevention and Management of Trauma and Burn Injuries (NPPMT&BI)" The Programme has two components: Trauma and Burns.

- The utilization of funds has decreased to 1% in 2019-20 from 64% in 2017-18 and 84% in 2016-17. The allocation of funds has also reduced to nearly half from 2017-18.

Table 5-22: Financial Performance of the Program

Burn and Trauma	BE (INR crore)	RE (INR crore)	AE (INR crore)	Utilization % (with respect to BE)
2016-17	200	174	167	84%
2017-18	190	150	122	64%
2018-19	150	30	7.4	4.9%
2019-20	100	10	0.7(P)	0.7%

(P)- till December 2019
Source: MoHFW Annual Report, 2020

- Delay in receiving funds through the treasury route by hospitals was reported (EY Primary Analysis: KII, 2019)

1. Trauma Care Facilities

- For trauma care facilities, the funds are provided to the states with the Centre to State share in the ratio of 60:40 except North-Eastern and Hilly States, where the share is 90:10 and UTs which get 100% central funding (National Injury Surveillance, 2019).
- Mortality and injuries due to road traffic accidents have remained similar from 2014 to 2017 and if the trend continues, the SDG goal of halving the number of road accidents by 2020 could remain unachieved.

Figure 5-4 : Deaths and injuries due to road traffic accidents

Deaths and injuries due to Road traffic accidents

	2014	2015	2016	2017
Total Number of Road Accidents (in numbers)	4,89,400	5,01,423	4,80,652	4,64,910
Total Number of Persons Killed (in numbers)	1,39,671	1,46,133	1,50,785	1,47,913
Total Number of Persons Injured (in numbers)	4,93,474	5,00,279	4,94,624	4,70,975
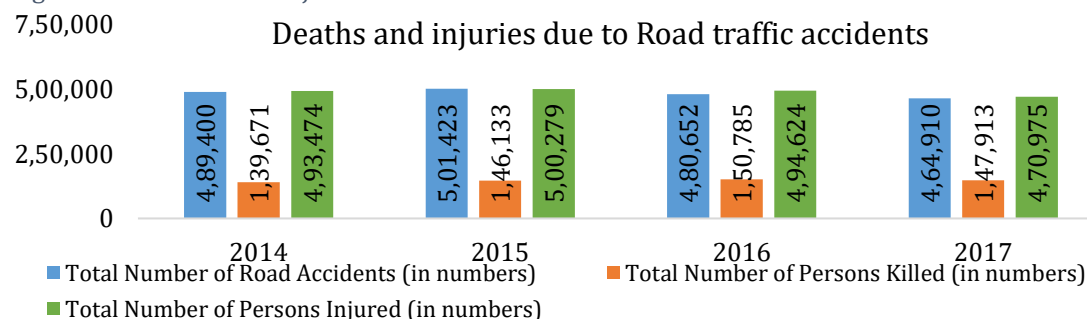
Source: Road Accidents in India – 2017 (MoRTH)

- The program envisages to develop a Trauma Care Facility (TCF) every 100 Km on State/National highways. Level I TCF (medical colleges with >500 beds) is expected to provide the highest level of definitive and comprehensive care for complex injuries with all major super specialties' services. Level II TCF (medical college hospitals/hospitals with 300 to 500

bed strength) is expected to provide definitive care for severe trauma victims with on-call specialist facility. Level III TCF (DH with 100-200 beds) is expected to provide initial evaluation and stabilization. Level IV provided by appropriately equipped and manned mobile hospital / ambulances.

Table 5-23: Trauma Care Facilities developed under XIth and XIIth 5-Year Plan

Trauma Care facilities			
	Target	**Achievement**	**Financial Assistance**
XIth five year plan	116 Trauma Care Facilities identified and supported: Level III – 58 Level II – 57 Level I - 1	105 - reported functional 7 – under construction 4 – not yet started	Level III–INR 4.78 Crore Level II –INR 9.63 Crore Level I –INR 15.93 Crore
XIIth five year plan	85 Trauma Care Facilities were identified 80 were supported: Level III – 56 Level II – 19 Level I – 5	2-reported functional 13-construction complete/ undergoing infrastructure strengthening 25-under different stages of construction 4 MOUs not signed 1 implemented using PPP model	Level III –INR 4.94 Crore Level II –INR 10.27 Crore Level I – INR 17.13 Crore

Source: MoHFW and EY Primary Analysis: KII, 2019

- From Table 5-23, it is evident that the number of Trauma Care Facilities supported under the scheme has been reduced in the 12th Five Year Plan, while the deaths and disabilities due to road accidents remain the same. Under the 12th FYP, 85 TCFs were identified. However, 80 TCFs were approved for financial assistance. Out of the total 196 TCFs supported under the program, 109 have been made functional.

- National Injury Surveillance Trauma Registry and Capacity Building Centre (NISC) has been established at Dr. RML Hospital. So far, NISC has been connected with 65 TCFs (including 8 Delhi government hospitals) in 15 States for collection of injury related data. Data retrieval due to unavailability of the computer personnel has been a point of concern, which is expected to be resolved in few months with funds allocated for this purpose (EY Primary Analysis: KIIs, 2019). The Burn registry is implemented alongside NISC using the same software and website.

- For capacity building, the Pre-hospital Trauma Technician (PTT) course are initiated and so far, more than 600 PTT students have been trained since 2007. Course on first aid has been developed and training for the same is under process. Further, Training of Trainers (TOT) are organized for Medical Officers, Basic Life Support (BLS) and Advanced Trauma Life Support (ATLS) training are organized for nurses and doctors of TCFS etc.

- Various IEC materials including audio-visual, documentary films, print material in the form of posters, charts and stickers for awareness on Good Samaritan Guidelines and First Aid for Trauma have been developed under the Program and circulated to the States for widespread dissemination, and publicity through TV campaigns and bulk SMS has been undertaken.

- Technical documents such as operational guidelines, monitoring formats, rehabilitation guidelines (for L-I TCFS), minimum standards for TCFS, Standard Treatment Guidelines for trauma injuries, key performance indicators for pre-hospital, hospital and rehabilitation care for trauma victims, etc. have been developed for smooth implementation of the program.

- In compliance to development of National Trauma System Plan, State Action Plans have been received from 32 States/UTs.

Chapter 5: Tertiary Care Programs

Key Findings:

- There has been a human resource shortfall in TCFs at all levels (EY Primary Analysis: KIIs, 2019). For example, out of 40 sanctioned nurses only 10 were available (NIHFW, 2018)
- Construction pace of TCFs under 12th FY Plan has been slow. Out of the total 196 TCFs supported under the Programme, 109 have been made functional

2. Burn Units

- In 12th FY Plan, the progress has been as given in table 5-24.

Table 5-24: Burn Units developed under 12th Five-Year Plan

Target	Achievement
60 burn units were identified. 47 were approved for first instalment financial assistance.	3 functional burn units 15 under construction

Source: EY Primary Analysis: KII, 2019, DGHS

- Burn Data Registry and software have been developed alongside National Injury Surveillance Trauma Registry and Capacity Building Centre and will be implemented at the National level to collect, compile and analyse data related to Burn Injuries in the country.

- There has been a human resource shortfall in burn units (EY Primary Analysis: KII, 2019).

- For capacity building, the practical handbook/manual for Burn Injury Management developed during the 11th Five-Year Plan has been revised. The Standard Treatment Guidelines for acid attack victims have also been incorporated in the handbook.

- Annual Practical training of medical officers in Burn Injury management for doctors has been organized at Safdarjung Hospital and Dr. RML Hospital. Around 80 doctors have been trained so far in these sessions.

- Under IEC activities, audio-visuals were developed on first aid for acid burns and translated into 12 Regional languages.

- Technical Resource Group (TRG) that developed Standard Treatment Guidelines for burn injuries, has been re-constituted. A manual on dressing techniques for allied healthcare professionals has also been developed.

Case Study 27- Tamil Nadu Accident and Emergency care Initiative (TAEI)

Introduction

Tamil Nadu alone accounts 10.7% of road traffic accident deaths in India. During 2016, Tamil Nadu accounted for 17,311 which is 12% higher as compared to 2015. So, to reduce the response time after the accident and to use the golden hour efficiently, Government of Tamil Nadu launched an innovative program "Tamil Nadu Accident and Emergency care Initiative (TAEI)" in January, 2018. Key stakeholders involved are- Government of Tamil Nadu, NHM and IIT Madras (for App development).

Implementation of the Practice

- The objective of the initiative was to reduce deaths caused by stroke, myocardial infarction, trauma (includes road traffic accidents), burns, poison, paediatric emergencies and, other life-threatening conditions, the first hour after the accident is the golden hour.
- TAEI used the following model to respond to the emergency cases

Pre-hospital care	Reduction in response time through technology	Concept of emergency room	Emergency care centres on high RTA prone stretches

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Pre-hospital care:

"108" Ambulance Service is being operated 24×7 in Tamil Nadu free of charge as a Public Private Partnership with GVK EMRI through a single Toll-Free number. Each ambulance has one fully trained Emergency Medical Technician (EMT) who provides pre-hospital care to the victim and a pilot (driver).

Reduction in response time through technology:

All the ambulances have a GPS device that is integrated with the 108 Emergency Response Centre. Currently, the calls to 108 Emergency Response Centre records details about the caller's district, taluk, and village and nearby landmark given verbally by the caller. In a state of panic, giving exact location details becomes difficult. Under these circumstances, the new mobile application for android mobile enables the 108 Emergency Response Centre Officer to view the caller's geographic location precisely and locate the ambulance through GPS.

A new mobile application has been designed to work even without an internet connection (data / GPRS). This application uses DTMF technology to determine the callers' location without an internet connection. This special feature is an initiative by the Government of Tamil Nadu to enable even the rural and tribal population with feeble mobile network coverage to have access to its 108 Emergency Response Service. To begin with, five Emergency Response Officers would have DTMF enabled the system to receive calls from this mobile app without an internet connection. This application has been developed in collaboration with IIT Madras.

All the 108 ambulance pilots have been provided with android phone and a special android mobile application has been designed to reach the caller location and to take the patients to the nearest hospitals through the shortest route and avoiding the traffic.

Concept of the emergency room:

The concept of an emergency room is devised to provide immediate emergency care to an RTA victim, within the golden hour without waiting for an Accident Register entry. 72 hospitals have been identified for standardization of the Emergency Room. A system of Triage is done based on the criticality of the victim and colour is assigned, (RED/YELLOW/GREEN). Red denotes highly critical which is located near the triage room.

Emergency care centres on high RTA prone stretches:

Emergency care centres are established on high accident-prone zone to stabilize the patients with in 20 to 45 minutes and to move them to higher institution. Functions of ECC are as follows:

- Triaging and Reassuring patients
- RSI (Rapid Sequence Intubation)
- Cardiac Resuscitation
- Fluid Resuscitation
- Pain Management
- Bleeding Control, wound care

- TAEI developed a hub and spoke model with the existing 72 hospitals in the state and brought trauma care under one umbrella in addition to ST Elevated Myocardial Infarction (STEMI) and Stroke Care and Rapid Intervention with Plasminogen Activator and Thrombectomy (SCRIPT).

- Technology used includes ambulance locater app, caller geographic location capture app using GPS, caller geographic location capture app using DTMF, 108 Pilot navigation app, spatial mapping of medical facilities algorithm.

Chapter 5: Tertiary Care Programs

- Infrastructure:
  - In STEMI, there are 18 hubs that have facilities like CCU and Cath Labs, with treatment available for thrombolysis, angiogram and, angioplasty. STEMI has 154 spokes with CCU facility with treatment available for thrombolysis.
  - In SCRIPT, there are 23 hubs which have facilities like CT scan, Cath Labs, and Neurosurgery with treatment available for thrombolysis, thrombectomy, conservative management/ surgical management for haemorrhagic stroke patients. STEMI has 55 spokes with CT scan with treatment available for thrombolysis and, conservative management for haemorrhagic stroke patients.
  - Level 1, 2, 3 trauma centres are to be established in various medical college hospitals, District head quartered medical hospitals and other government hospitals
  - The State Planning Commission has recommended for Point of Care Testing (POCT) in 25 centers at a cost of Rs. 277.50 Lakhs for funding of innovative schemes under Tamil Nadu Innovations Initiative (TANII).

Results

- This program reduced the monthly trauma mortality rate of Rajiv Gandhi Government General Hospital, Chennai from 8.27% to 2.71% and non- trauma mortality has been reduced by 2%.
- More than 70,000 lives have been saved annually.

Conclusion

This model shows a very promising impact and increases the efficiency of government hospitals towards emergency cases and has leveraged technology

Further Readings

http://www.nrhmtn.gov.in/gos/GoMsNo_179_18.pdf
https://www.taeionline.com/

Key Findings

- As the funds for all the burn units were released towards the end of 2017, most of the units could not initiate the construction activities and therefore only three of them are functional
- Delay in receiving funds through the treasury route by hospitals was reported (EY Primary Analysis: KII, 2019)
- More functional TCFs during 11th FY Plan when the Program was 100% Centre sponsored, the functionality status remains low during the 12th FY Plan when the Centre and State share became 60:40.
- There has been a human resource shortfall in burn units (EY Primary Analysis: KII, 2019).

Analysis on REESI+E Framework

Table 5-25: Summary of evaluation of National Programme for Prevention and Management of Trauma and Burn Injuries based on REESI+E

Theme	Remarks
Relevance	**+** In India road accidents are major cause of morbidity/mortality and India has also one the largest burden of burn cases ~70Lakh burn injuries per year
Effectiveness	**+** The Program aims to improve the human resources, required equipment and awareness generation **−** 11th Year Plan: 116 trauma care facilities were sanctioned, out of which 105 are

Theme	Remarks
	functional. Under the 12th FYP, 85 TCFs were identified. 80 TCFs were approved for financial assistance. Out of the total 196 TCFs supported under the Programme, 109 have been made functional and 3 out of 47 burn units are functional.
	+ The Program moved away from the standalone trauma centre model based on Maharashtra learning- 40 standalone Trauma Care Facilities were developed in Maharashtra, of which presently, none are functional because trauma patients may require a variety of services such as dental, orthopedics, gynecological, etc. Therefore, trauma units have now been developed inside district hospitals along with other speciality services.
Efficiency	**+** Utilization certificates are required to be submitted by the Trauma Care Facilities under construction to DGHS to continue receiving financial assistance. Also, periodical review meetings are held every quarter to check the status of facilities ensuring that funds are being utilized by the state governments in an optimal manner. **–** The utilization of funds has decreased to 1% in 2019-20 from 64% in 2017-18. **–** The allocation of funds has also reduced to nearly half from 2017-18. **–** No State has sought second instalment for FY 2018-19. In most of the cases UCs of first instalment have not been submitted in the prescribed format. **–** Release of funds to be on reimbursement model from 2020 **–** No such proposal received so far for Trauma & Burns Program
Sustainability	**–** More functional TCFs during 11th FY Plan when the Program was 100% Centre sponsored, the functionality status remains low during the 12th FY Plan when the Centre and State share became 60:40.
Impact	**+** Burn Data Registry and National Injury Surveillance Trauma Registry are under development for maintaining data records **–** Beneficiary level data not available yet
Equity	**+** Tertiary-level care is available for the patients irrespective of their socio-economic background **–** Beneficiary level data not available to access equity parameter

	Satisfactory		Average		Needs Improvement		Data unavailable

Table 5-26: Output-Outcome Framework- National Programme for Prevention and Management of Trauma and Burn Injuries

National Programme for Prevention and Management of Trauma and Burn Injuries					
Output ⬤					
Output	**Indicator**	**Target**	**Data**	**Source**	**Status**
Making identified Trauma care facilities (Level I, II, III) functional	Number of Trauma Care Facilities made functional (Level I, II, III)	10 more TCFs will be made functional	8 functional TCFs in 2019-20	EY KII Analysis	Unmet
Developing Burn Units in Tertiary Health Care Institutes	Number of Burn units developed out of total to be established	10 more burn units	4 burn units made functional in 2019-20	EY KII Analysis	Unmet
Developing National Injury Surveillance Trauma Registry and Capacity Building Centre (NISC)	NISC made functional	NISC	Trauma Registry and Capacity Building Centre (NISC) has been established at Dr. RML Hospital	EY KII Analysis	Met

Chapter 5: Tertiary Care Programs

Outcome					
Outcome	Indicator	Target	Data	Source	Status
Strengthened Trauma Care Facilities and burn units for enhanced quality care to trauma and burn victims	Provision of quality services to victims of trauma by reducing deaths and disabilities	In 10 TCFs	Construction has been completed in Total 131 TCFs, of which 109 are functional and quality services are being provided in all these facilities. However, data regarding reduction in deaths & disabilities is not available.	EY KII Analysis	Met
	Provision of quality services to victims of Burn injuries by reducing deaths and disabilities	In 10 Burn Units	Quality burn care services are being provided to the victims through all 4 functional Burn Units. However, comprehensive patient data pointing out reduction in deaths and disabilities due to burns is not available	EY KII Analysis	Unmet
	Establishment of burns registry in hospitals	15 Hospitals	No hospitals connected so far	EY KII Analysis	Unmet

5.2.8 National Tobacco Control Program (NTCP) and Drug De-addiction Program

Tobacco Cessation Centres (TCCs) have been developed in majority of the states. Funds have been utilized to generate awareness and develop infrastructure under this program. Additional support might be necessary to develop more TCCs and Drug Treatment Clinics (DTCs) under National Drug Dependence Treatment Centre (NDDTC).

- According to the Global Adult Tobacco Survey (GATS-II), 28.6% of all adults in India used tobacco in 2016-17 compared to 34.6% in 2009-10. This shows a relative reduction in tobacco usage of 17.3% in 7 years with an annual average decline of the order of 2.47% per year.

- The State Level Activities under NTCP are 100% Centrally sponsored. With prior permission from MoHFW, States shall have the flexibility for inter-usability of funds within components limited to a ceiling of 10% (National Tobacco Control Program: Operational Guidelines, 2015).

- States should utilize minimum 75% of the funds before requesting for next instalment (National Tobacco Control Program: Operational Guidelines, 2015).

- The utilization of funds has decreased to 49% in 2019-20 from 79% in 2017-18 as shown in Table 5-27. The allocations have increased from 25 Crore in 2017-18 to 65 Crore in 2019-20.

Table 5-27: Financial Performance of NTCP

NTCP	BE (INR crore)	RE (INR crore)	AE (INR crore)	Utilization % (with respect to BE)
2016-17	25.0	25.0	18.3	73%
2017-18	25.0	25.0	19.7	79%
2018-19	65.0	67.0	61.5	95%
2019-20	65.0	65.0	31.9(P)	49%

(P)- till December 2019
Source: MoHFW Annual Report, 2020

- Under drug-de addiction program (DDAP), the government provides financial grants to support drug treatment facilities in selected central government hospitals / institutions and government hospitals / institutions in North-East states.

- A national nodal centre, the "National Drug Dependence Treatment Centre (NDDTC), Ghaziabad (UP)", has been established under AIIMS, New Delhi. The other DDTCs receiving regular annual financial assistance under the program include: PGIMER, Chandigarh and NIMHANS, Bangalore.

- There are 27 drug treatment clinics under NDDTC, AIIMS New Delhi under the program (MoHFW Drug De-Addiction Programme (DDAP), 2019).

- The purpose of these centres includes providing de-addiction and rehabilitation services to the patients as well as conducting research and provide training to doctors in the field of drug de-addiction. The provision of treatment services has been now expanded at: (i) RML Hospital, New Delhi (ii) AIIMS, Bhubaneshwar (iii) CIP, Ranchi.

- NDDTC initiated mobile methadone clinic through mobile van in Delhi.

- As of March 2018, 429 Tobacco Cessation Centres (TCCs) have been established in every state except for Meghalaya & Madhya Pradesh, with Uttar Pradesh being the leading state with 80 TCCCs (NTCP, 2019).

- 463 respondents suffered from tobacco, drug or alcohol addiction, of which 19% faced health issues relating to the addiction. Among those who suffered only ~15% of the respondents visited public cessation clinics (EY Primary Analysis: Household Survey, 2019).

Figure 5-5 : Number of people visiting public and private cessation clinics
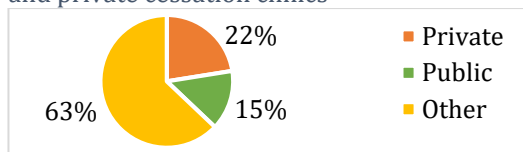
Source: EY Primary: Household Survey, 2019.

- 3 tobacco testing laboratories at National Institute for Cancer Prevention and Research, Noida, Central Drug Testing Laboratory, Mumbai and Regional Drug Testing Laboratory, Guwahati have been established for testing tobacco products for evidence for public health.

Key Findings:

- According to the Global Adult Tobacco Survey (GATS-II), 28.6% of all adults in India used tobacco in 2016-17 compared to 34.6% in 2009-10. This shows a relative reduction in tobacco usage of 17.3% in 7 years with an annual average decline of the order of 2.47% per year.

- Only ~15% of the respondents facing health issues due to tobacco, drug or alcohol addiction visited public cessation clinics (EY Primary Analysis: KII, 2019)

Chapter 5: Tertiary Care Programs

Analysis on REESI+E Framework

Table 5-28: Summary of evaluation of NTCP and Drug de-addiction program based on REESI+E Framework

Theme	Rationale
Relevance	+ Objective of the program is to create awareness and reduce tobacco & drug addiction in the country. Both are necessary owing to the increase in disease burden due to addiction to tobacco and drugs.
Effectiveness	+ Regular quarterly reports for physical and financial progress and status of target achievement are required to be submitted by the States for physical and financial monitoring - Some of the States/UTs have not submitted reports regularly
Efficiency	+ The allocations have increased from 25 Crore in 2017-18 to 65 Crore in 2019-20. - The utilization of funds has decreased to 49% in 2019-20 from 79% in 2017-18. - 429 TCCCs (presence almost in every State except Meghalaya and Madhya Pradesh) and 27 drug treatment clinics established under the Program
Sustainability	- The development of tobacco cessation centres and drug de-addiction centres require considerable capital and hence cannot be sustained by States alone, continued Centre support is required for the Program
Impact	+ According to GATS-II, 28.6% of adults in India used tobacco in 2016-17, which is a reduction of 17.3% in 7 years. - Utilization numbers not available in public domain
Equity	+ Benefits under the scheme are available to all irrespective of their social and economic status. - Implementation status not available

	Satisfactory		Average		Needs Improvement		Data unavailable

Table 5-29: Output-Outcome Framework - NTCP and Drug De-addiction Program

National Tobacco Control Program (NTCP) and Drug De-addiction Program					
Output ⬤					
Output	Indicator	Target (2019-20)	Data	Source	Status
Increase in availability of Tobacco Cessation Services	Additional No. of districts with Tobacco Cessation Centres	60	72	MoHFW	Met
Increase in facilities for treatment of drug addiction	No. of new drug dependence treatment centres with IPD facilities	3	3 new Drug treatment clinics expanded at: (i) RML Hospital, New Delhi; (ii) AIIMS, Bhubaneshwar (iii) CIP, Ranchi	MoHFW	Met
	No. of new Drug Treatment Clinics with OPD services	10	10 new Drug treatment clinics with OPD services	MoHFW	Met
Outcome					
Outcome	Indicator	Target (2019-20)	Data	Source	Status
Improved access for Tobacco Cessation services	No. of People avail tobacco cessation services in 2019-20	1,00,000	4,98,860	MoHFW	Met
Improved access to drug dependence treatment services	No. of people who avail treatment services in 2019-20	40,000 New Registration Follow-up cases=2,00,000 IPD=2,500	New Registration = 46,193 Follow-up cases=3,63,912 IPD=4,745	MoHFW	Met

5.2.9   REESI+E Framework Analysis

Table 5-30: Summary of evaluation of Tertiary Care Programs based on REESI+E Framework

Theme	Remarks
Relevance	**+** All the seven programs and their objectives are relevant and expected to remain relevant in the next decade. Targets may be redefined over a period of time
Effectiveness	**+** Good convergence of seven tertiary care programs with programs under NHM **+** Overall strategies and tools adopted under the program have been successful **−** Creation of infrastructure approved across all programs. However, only few have been functional **−** Low awareness about program benefits
Efficiency	**−** Fund utilisation across all programs has been found to be low **−** Low uptake of funds after the first tranche is released for infrastructure **−** Holistic approach for planning and development of infrastructure is found missing
Sustainability	**−** The Scheme is not self sustaining and continued support is required for all the programs **+** Private sector participation models and more use of technology are being explored
Impact	**+** Infrastructure created has helped in dealing with NCDs, lifestyle diseases & injuries and also contributed to preventing economic loss due to disease and disability **+** Wherever functional, the programs contribute towards reduction in catastrophic health expenditure for poor patients **−** Beneficiary level data and updated status of operational tertiary care facilities is not available in the public domain **−** Number of functional institutes on ground is found to be low
Equity	**+** Institutes provide care to patients irrespective of their socio-economic status **−** Though there are no exclusion criteria, the program design lacks discussion on equity parameters (urban vs rural, gender etc.). Further, the utilisation statistics with respect to all the programs is not available. Much is desired to be achieved under equity spectrum.

	Satisfactory		Average		Needs Improvement

Chapter 5: Tertiary Care Programs

5.2.10 Cross-Sectional Thematic Analysis

Table 5-31: Analysis of Cross-Sectional Themes forTertiary Care Programs

Cross-Sectional Theme		Indicative Area of Enquiry	Key Questions	Remark
Accountability & Transparency	🟡	Availability of Data Records and Reports in public domain	Is data available for the scheme in public domain?	▬ Yes (to a limited extend)
			What data records are available for the scheme in public domain?	✚ Relating to the tertiary health infrastructure approved under various Schemes
			What level of data is available in public domain - National/State/District-level/ Beneficiary level;	✚ National and State level data is available
			Is beneficiary-level data available? At what level?	▬ No ✚ Centre Registry for some of the programs under development
		Monitoring Mechanisms	What is the frequency of audits?	✚ Periodical review meetings are conducted with relevant state authorities. Information about the frequency of these visits is not available in public domain
			Has a social audit been conducted? When?	▬ No
			Does a robust monitoring mechanism exist and at what level?	▬ No. Only periodical review meetings are conducted and accredited utilization certificates are submitted
			What design aspects have been implemented for reduced leakages?	✚ Utilization certificates (UCs) are required to be submitted by the States ▬ UCs are not submitted regularly by the States ✚ In some programs, post release of first instalment, the funding will be on reimbursement basis
		Evaluation Mechanisms	Process/Impact evaluation studies conducted in the last decade - Frequency, quality, coverage, Etc.	✚ Multiple evaluation studies have been conducted in the last decade pertaining to individual schemes under Tertiary Care Program (such as - Evaluation of the e-Health scheme "Program for strengthening of Telemedicine and e-Health Services", 2017; Evaluation for National Program for Control of Blindness (NPCB), 2014; Evaluation report of "Capacity Building for Development of Trauma Care Facilities in Government Hospitals on National Highways Programs"

Cross-Sectional Theme		Indicative Area of Enquiry	Key Questions	Remark
				submitted by NIHFW; (Evaluation of National Mental Health Program (Scheme A and B) , 2018)
		Citizen Accountability	Has a citizen charter been carefully drafted, adopted and publicized?	Not known
			Are there functional grievance redressal mechanisms that successfully incorporate beneficiaries' and non-beneficiaries' concerns?	▬ Data unavailable
			Is the RTI mechanism functioning effectively?	+ Yes
		Financial Accountability	What funding mechanisms are being used?	+ Funds are being transferred to the States through treasury mode. Scheme is also subjected to CAG Audits
			Is DBT being used?	Not Applicable
Direct/Indirect Employment Generation	🔵	Employment generation	What is the level of employment generation through schemes in the sector and overall sectoral contribution in National employment generation?	▬ Data unavailable
			What is the proportion of Informal jobs converted into formal	▬ Data unavailable
			What is the improvement in income levels?	▬ Data unavailable
			What is the improvement in availability of employment opportunities	▬ Data unavailable
			What is the women participation (%) in the Sector/Program	▬ Data unavailable
		Quantum of Self Employment, enterpreneurship generated	Is finanical assistance provided through Mudra etc?	Not Applicable
			Quantum and kind of self-employment opportunities generated	Not Applicable
Gender mainstreaming	⚪	Inclusiveness in scheme design/planning	Is there a specific mention of gender equality and equity considerations in the scheme guidelines/objectives, i.e. has the scheme	+ Mention of gender equity in scheme guidelines (such as NPCDCS)

Chapter 5: Tertiary Care Programs

Cross-Sectional Theme		Indicative Area of Enquiry	Key Questions	Remark
			been designed keeping gender considerations in mind?	**+** Programs are applicable to all irrespective of their socio-economic background
			Is gender budgeting being actively practised?	**–** No
			Are there any initiatives for the inclusion of transgender people?	**–** No
		Gender-friendly infrastructure and policies	Are gender-friendly plans translating into greater empowerment of women in implementation?	**–** No
			Are there women-friendly policies in place, like parental leave (maternity and paternity), creches, flexible working hours, inclusion in decision-making etc.?	Not Applicable
			Is there a gender wage gap, and any measures in place to mitigate the same?	Not Applicable
			Are there sufficient safeguards to ensure a safe working environment for women, including from physical injury, sexual harassment etc.?	Not Applicable
		Capacity building	Is there any specific training offered for women to enhance job roles or assist career progression?	Not Applicable
			Are there sufficient awareness-raising communications or courses regarding women-friendly provisions/safeguards, sexual harassment policies, grievance redressal mechanisms etc.?	Not Applicable
			Are there sessions/plans for sensitization of the work force on gender equality?	Not Applicable
Climate change & sustainability	⚪	Climate resilience	Is there a well-developed understanding of how climate change will affect the sector?	Not Applicable

Cross-Sectional Theme		Indicative Area of Enquiry	Key Questions	Remark
including adoption of climate-change resilient practices & diversifications			Are appropriate climate resilient policies, for mitigation and/or adaptation, included in the scheme objectives and design?	Not Applicable
			Are the planned design factors being successfully implemented?	Not Applicable
			Is there an appropriate disaster risk reduction plan in place?	Not Applicable
		Sustainable practices	Are there possibilities for circular economy development in the sector?	Not Applicable
			Is there an appropriate/sufficient focus on diversification (eg. agrobiodiversity) to reduce risk?	Not Applicable
			Is there an effective waste management/end-of-life system in place for resources used in the sector/schemes?	Not Applicable
		Awareness and capacity building	Are there any training sessions held regularly for reducing pollution, adopting green practices, using local materials etc.?	Not Applicable
			Are the end beneficiaries aware of climate risks and possible individual mitigation/adaptation measures?	Not Applicable
Social Inclusion & Role of Tribal Sub-Plan (TSP) and Scheduled Caste Sub-Plan component of the scheme in mainstreaming of Tribal and	🔵	Funds allocated under TSP/ SCSP and other provisions for vulnerable communities	What is the fund allocated under TSP & SCSP for each scheme?	➕ 68.57 Crore for SCSP and 43.39 Crore for TSP
			What is the fund allocated under TSP & SCSP for each scheme in different states?	➖ Data unavailable
			How much of the fund been utilized overall and by each state?	➖ Data unavailable
			For what outputs has the fund been utilized?	➖ Data unavailable
			What has been the effect of the TSP & SCSP funds on improving equity?	➖ Data unavailable

Chapter 5: Tertiary Care Programs

Cross-Sectional Theme		Indicative Area of Enquiry	Key Questions	Remark
Scheduled Caste population		Inclusion of vulnerable groups in scheme as well as sector	What are the interventions implemented for specific vulnerable groups?	Not Applicable
			What are the major challenges for inclusion?	Not Applicable
			Are there any vulnerable groups not covered?	Not Applicable
Use of IT/Technology in driving efficiency	🔴	Deployment of IT enabled mechanisms for monitoring of the Schemes	In case of a scheme to create physical assets, is geotagging and use of geotagged photographs being done?	▬ No
			In case if the scheme intends to directly benefit an individual beneficiary or an enterprise or a collective, is JAM trinity and DBT being used?	Not Applicable
			How is technology being used for on-ground data collection?	✚ Central registries for some programs for data collection is under development
			Is there an online scheme MIS to ensure regular update of progress and effective supervision?	✚ Some programs have there MIS system ▬ Data is not updated regularly
			What is the granularity of data available in MIS?	▬ Not practised
			What is the frequency at which the information is being updated/reported on the MIS/Dashboard?	▬ Not practised
			What are the benefits of and challenges faced in implementation of MIS portals/ Apps?	▬ Not practised
			Are the IT-enabled mechanisms user friendly?	▬ Not practised
		Use of latest technology to improve efficiency and effectiveness of scheme implementation	What are the technologies being used in project implementation, service delivery?	✚ Tele-education, tele-medicine, tele-consultation, remote monitoring, tele-pathology, tele-radiology etc.
			Which states are using the latest technologies?	Data unavailable
			Which schemes are using the latest technologies	Telemedicine, NPCDCS, Trauma and Burn, NMHP
			How is technology adoption being encouraged?	✚ By making facilities such as tele-consultation readily available to patients in remote areas
Development, dissemination & adoption of	⚫	Fund allocation towards promotion of innovation	What percent of total allocation is directed towards development, dissemination and	Not Applicable

Cross-Sectional Theme		Indicative Area of Enquiry	Key Questions	Remark
innovative practices, technology & know-how			adoption of innovative practices and technology? How much of it is utilized?	
		Contribution of improved practices in increasing outcomes	What is the status of acceptance of innovative practices and technologies amongst the target beneficiaries? What are the possible challenges faced hindering acceptance of the same?	Not Applicable
			What is the impact of innovative technologies and practices on scheme and sectoral outcomes?	Not Applicable
Stakeholder and Beneficiary behavioural change	🔵	Fund Allocation	What percent of total allocation is directed towards Awareness generation or sensitization? What is the utilization rate? and How much impact has it been able to generate in terms of behaviour change?	▬ Data unavailable
		Mechanisms to promote and ensure behaviour change	What are the existing mechanisms at State/District/Block level to promote beneficiary awareness and sensitization?	▬ Data unavailable
			What activities are undertaken at District/Block level to promote adoption of good practices?	▬ Data unavailable
Research & Development	⚪	Fund Allocation	What percentage of total allocation (Sector as well as Scheme specific) is directed towards R&D?	Not Applicable
		Institutes and departments dedicated for R&D	What is status of availability of any Institute or centre or department dedicated for R&D in the Sector?	Apex institutes developed under the Scheme has research component included
		Private Sector participation in R&D	What is the percentage of private sector participation in R&D?	Not Applicable
Unlocking Synergies with other	🟡	Convergence (Inter-Ministerial/Inter-Departmental/Fina	What are the existing mechanisms to ensure convergence across Schemes, Departments at	The tertiary care programs scheme aims to integrate with the existing NHM framework for optimal utilization of available resources and seamless provision of services to the patients

Chapter 5: Tertiary Care Programs

Cross-Sectional Theme		Indicative Area of Enquiry	Key Questions	Remark
Government Programs		ncial/Human Resource/Administrative/Institutional/Schemes)	different levels (i.e.National/State/District/Block) ?	
			What activities are undertaken to ensure convergence at community level? Are there any Action Plans prepared at State/District/Block level to ensure the same?	✚ Preparation of District Health Actions Plans and regular meetings amongst various stakeholders
			What are the challenges hindering effective convergence?	━ Convergence with respect to R&D in the apex institutions and HRH&ME for HR development was not observed
Reforms, Regulations	⚪	Adoption of models acts and reforms at governance, institutional and administrative level	What are the acts/rules/regulations adopted at different levels (National/State/District)?	✚ Mental Healthcare Act, 2017 ✚ Cigarettes and Other Tobacco Products Act (COPTA), 2005
			What are the challenges faced in effective implementation of the Model Acts and Regulations?	━ Violations in COPTA : Sec 5: Direct/indirect advertisement of tobacco products including sponsorship and promotion Sec7 Mandatory display of specified health warnings on tobacco products packages [85% coverage- both sides].
			What measures are being taken to ensure effective implementation and compliance of adopted acts/rule/regulations? (like in areas of safety, accountability, transparency etc.)	Not observed
Impact on and role of private sector, community/ collectives/ cooperatives	⚪	Private Sector Participation	What is the percentage of private investment in the clusters/programs run by the government?	━ Data unavailable
			What incentives are available to promote private investments in the Sector?	━ Data unavailable
			How Private sector can help in improving value chain creation?	✚ PPP models can bring in capital investment and improve the pace of construction/progress
		Public-Private Partnership	What provisions/incentives are existing to promote PPP in the Sector?	Not known
			How well have PPP functioned in the Sector? What are the challenges faced?	✚ Some programs successfully using PPP model especially with NGOs and civil societies

🟢 Satisfactory	🟡 Average	🔴 Needs improvement	⚪ Not relevant/ applicable	🔵 Data unavailable

5.3   Issues and Challenges

Governance (Monitoring and Evaluation Mechanism)

- **Monitoring of physical and financial targets** has been **suboptimal** under all the programs
- For NPCDCS program, patients going to private institutions tracking is difficult under the program.
- The **virtual registries** for monitoring and data collection **have not been functional** yet.
- **Delays in university affiliation** for development of PG departments in medical colleges in NMHP & NPHCE programs due to involvement of multiple stakeholders and procedure/process set by regulatory bodies like MCI, RCI, NCI etc.

Physical Infrastructure

- **Slow pace of construction** of new infrastructure, civil works and other repairs has been observed in almost all the schemes.
- **Reduction in approvals** for new infrastructure observed in all the programs.
- The utilization of geriatric services provided in RGCs under NPHCE have decreased from 2018-19 to 2019-20 due to partial availability of services under each RGC
- In NPCBVI, modular eye OTs for providing super-speciality eye care services have not been developed at most of the RIOs.

Human Resources

- **Human Resource shortfall** at all levels in most of the programs
- **Few nominations sent** by States for refresher and super-speciality **trainings**

Disbursement and Fund Flow

- In all the programs States have **not submitted utilization certificates** and statement of expenditures for the first instalment and **have not demanded the second instalment**
- **Utilization of funds have reduced** in all the programs which could be attributed to **low number of new approved infrastructure**
- **Lack of fund flexibility**
- **Delay in flow of funds** due to treasury route

Data Availability

- Lack of data availability in public domain for the following:
  - **Functional status** of tertiary care facilities
  - **Utilization statistics** not available for the functional units
  - **Year on year data** not available for output outcome indicators for most of the programs
  - **Referral cases** from district hospitals and below
  - **In-service training** provided at different levels.

5.4   Recommendations

Governance

- National Medical Commission may lay down criteria and SOPs to accelerate the process of affiliation to University for award of MD degree in new disciplines created to serve National Health Programs with better coordination between different stakeholders.

- Real-time tracking of physical and financial targets through MIS.

Physical Infrastructure

- The outcome targets and timeline need to be clearly defined at both state and facility level. The states also need to spend the committed amount and provide land for setting up tertiary facilities. These issues can be clearly defined in the MoUs signed between the concerned State Government and MoHFW.

- The issue of quality under NPCBVI can be addressed by creating separate Eye OTs and Eye Wards in all the district hospitals. Some of the states like Kerala have started this and have taken separate grant for provision of these services in each district.

Human Resources

- Shortage of human resources can be addressed by using measures such as partnering with private players/individual private healthcare providers

- Need for specialist or tertiary care programs should be aligned with the capacity of medical education system to generate skilled resources. Compulsory posting of specialists trained by public institutions to serve National Health Programs at various levels like, CHCs, District Hospitals and tertiary care centres may be considered

- Use of technology like telemedicine and teleradiology to effectively utilize the human resources

Disbursement and Fund Flow

- To supplement public funding, additional funds can be obtained through partnership with private players (PPP). This can be especially useful in schemes such as Telemedicine & e-Health, as well as procuring equipment related to other schemes.

- Fund flexibility under tertiary care program needs to be improved, the re-appropriation process needs to be smoothened and the same needs to be communicated to the state

- Better integration and enforcement of PFMS system to track disbursal and utilization at the execution point

Data Availability

- Online MIS should be maintained and updated regularly for transparency and accountability at all levels

Chapter 6: CSS- Human Resources for Health and Medical Education

6. Human Resources for Health and Medical Education

Analysis of the CSS- Human Resources for Health and Medical Education has been discussed in this Chapter entailing the following sections. Section 6.1 details the background of CSS covering the introduction and objectives of five sub-schemes namely:

- Upgradation of State Government Medical Colleges (PG seats);
- Strengthening of Government Medical Colleges (UG Seats) and Central Government Health Institutions scheme;
- Establishment of New Medical Colleges (Upgrading District Hospitals);
- Upgradation/ strengthening of Nursing Services (ANM/GNM); and
- Setting up of State Institutions of Para-Medical Sciences in States and Setting up of Colleges of Para-medical Education scheme.

Section 6.2 discusses the performance of each sub-scheme on Output-Outcome indicators, analysis based on REESI+E Framework and cross-sectional thematic analysis has also been provided at sub-scheme level. Further, in Section 6.3 and 6.4 relevant issues and recommendations at CSS level have been highlighted.

6.1 Background

6.1.1 Introduction and Objectives

The CSS – 'Human Resource for Health and Medical Education' focuses on capacity building of the health workforce through infrastructure development. There are 5 sub-schemes under this CSS:

1. **Strengthening of Government Medical Colleges PG Seats:** The objectives of the scheme are to upgrade the PG teaching facilities in the medical colleges; increase the intake capacity of students at postgraduate levels; introduce new and higher courses of study; mitigate the shortage of specialists in the country; rectify the deficiencies pointed by MCI to protect themselves from derecognizing of existing courses; and improve the quality of medical education, medical research and clinical treatment (Ministry of Health and Family Welfare). Phase 1 of this scheme was started during Eleventh Five-Year plan in 2009-10 and phase 2 started after the end of Twelfth Five-Year Plan in 2014.

2. **Strengthening of Government Medical Colleges UG Seats:** The objective of the scheme is to increase the intake capacity at undergraduate level in the medical colleges along with upgradation of undergraduate teaching facilities. The scheme aimed to add ten thousand (10,000) more MBBS seats across the country especially in the under-served regions.

3. **Establishment of New Medical Colleges attached with District/ Referral Hospitals**

   The objective of the scheme is to bridge the gap in total number of undergraduate seats available in the government and private sector, and to utilise the existing infrastructure of district hospitals for increasing the undergraduate seats in a cost-effective manner by attaching a new medical college with existing district or referral hospital.

4. **Upgradation/ strengthening of Nursing Services (ANM/GNM)**

   This scheme aims to establish Auxiliary Nurse Midwifery (ANM) and General Nursing & Midwifery (GNM) schools across the country to meet the shortage of ANMs & GNMs and to correct regional imbalances in the growth of nursing schools in the country. This scheme was launched in 2010 during Eleventh Five- Year Plan.

5. **Setting up of State Institutions of Para-Medical Sciences in States and Setting up of Colleges of Para-medical Education scheme**

   This scheme was started in Twelfth Five Year Plan with an aim to standardise education and services of allied health professionals.

6.1.2   Structure and Stakeholders

An indicative organization chart of Medical Education is given below (Figure 6-1 and Figure 6-1):

Figure 6-1: Organization chart at Central Level   Figure 6-2: Organization chart at state Level*
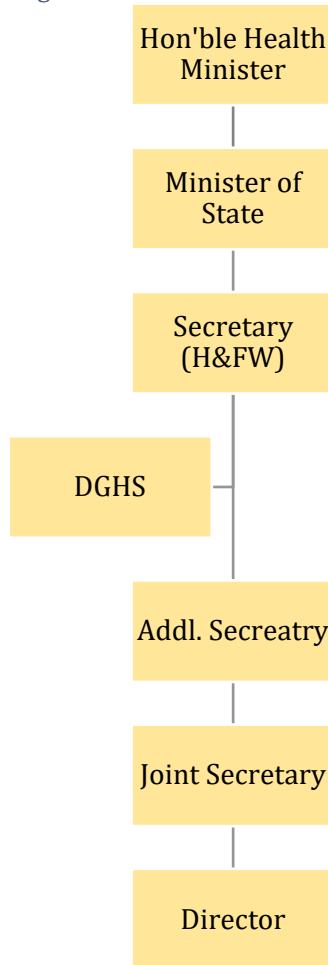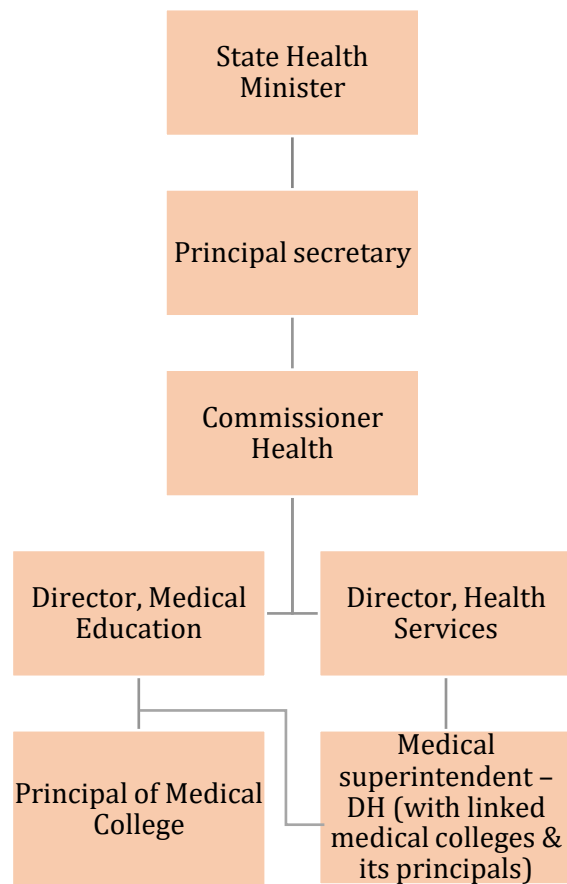
Source: MoHFW website   Source: State Health websites

*The organization chart for states is indicative in nature and it varies from state to state.

The other key stakeholders of this centrally sponsored scheme include:
  ➢ Academic institutions for medical education
  ➢ Medical professionals like doctors, nurses and other health workforce
  ➢ National Medical Commission
  ➢ Nursing council of India
  ➢ Vice-chancellor of medical universities, health science universities like MGR in Chennai and University of Health Sciences in Kolkata and Guwahati

Regulatory bodies like National Medical Commission (presently known as Board of Governors, Medical Council of India), Nursing Council of India etc. have been set up by the centre to regulate and monitor the medical and Nursing education along with promoting training and research

related activities. This helps in maintaining the demand and supply of health resources across different levels of healthcare – primary, secondary and tertiary.

6.2 Performance of the scheme

6.2.1 Financial Performance

In terms of financial performance, the RE and AE for Human Resources for Health and Medical Education over the last four years have been provided (in INR Crore) in Figure 6-3 below.

Figure 6-3: HRH & ME- Budget Allocations and Expenditure
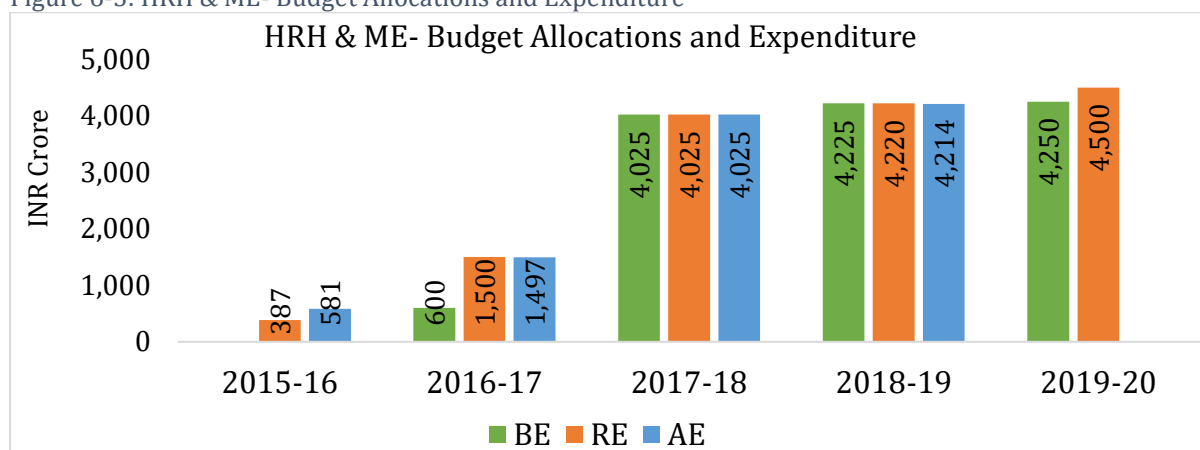
Source: Union Budget for Ministry of Health and Family Welfare 2019-20, 2018-19, 2017-18, 2016-17

As it can be seen, the allocations have increased sharply from 2016-17 to 2017-18. The allocations have increased significantly throughout the last 5 years. The utilisation of the allocated funds has been almost 100% from 2016-16 to 2018-19. The high utilisation indicates good fund absorption capacity of the schemes. Therefore, the CSS has performed well in terms of utilisation of its allocations.

6.2.2 Performance on Output-outcome Indicators and REESI+E Framework

A. Upgradation of Government Medical Colleges (PG seats)

There are 279 government medical colleges and 260 private medical colleges in India (Ministry of Health and Family Welfare, 2019). The ratio of faculty to students has been revised in medical colleges in 2018-19 to cater to the increased medical seats as given below:

Table 6-1: Update faculty-student ratio

Entity	Old Ratio	New Ratio
Teacher: students (professor: MD/MS student)	1:1	1:2
Teacher: students (clinical subjects)	1:1	1:3
Teacher: students (associate professor)	1:1	1:2
Teacher: students (associate professor in clinical subject, if head of unit)	1:1	1:3

Source: EY Primary Analysis: KII, 2019

Further, it has also been made mandatory for all medical colleges to start PG courses within 3 years of the date of their MBBS recognition/continuation of recognition. The colleges are now allowed to apply for PG courses in clinical subjects at the time of 4th renewal -- it will serve to advance the process for starting PG courses by more than one year. These steps have led to increase in the number of PG seats in the country. In a recent announcement in budget 2020-21, the Finance Minister said, "The Government will encourage large hospitals with sufficient capacity to offer resident doctors DNB/FNB courses under the National Board of Examinations" – resulting into further increase in the PG seats.

The funds for this scheme are released directly to the State Government based on the recommendations received from the Technical Evaluation Committee (TEC) under Director General of Health Services and after approval of Expenditure Finance Committee under the chairmanship of Union Health Secretary. For monitoring the functioning and implementation of the scheme, a proper monitoring mechanism has been put in place. The monitoring process includes progress report and achievement of other targets, physical verification, submission of required utilisation certificate etc.

Table 6-2: Financial Performance Upgradation of Government Medical Colleges (PG seats)

	BE (INR Crore)	RE (INR Crore)	AE (INR Crore)	Utilization % (with respect to BE)
2017-18	165.0	165.0	165.0	100%
2018-19	452.3	172.3	172.2	38%
2019-20	800.0	600.0	487 (P)	61%

(P)- till December 2019
Source: Union Budget for Ministry of Health and Family Welfare 2019-20, 2018-19, 2017-18, 2016-17

Figure 6-4: New government PG medical seats created
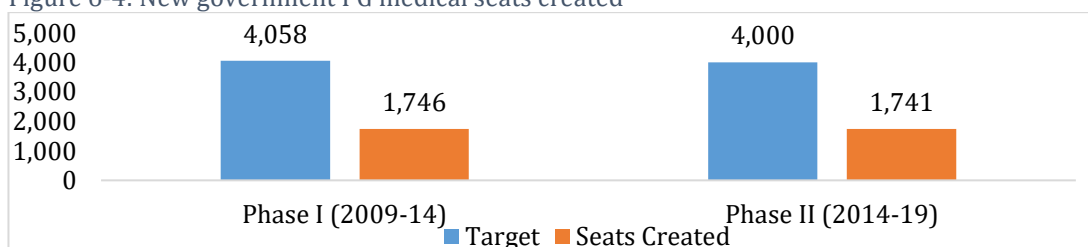
Source: MoHFW, 2020

There are two phases of the scheme – creation/increase of 4058 PG seats in Phase I and for the second phase out of target of 4000 PG seats, 1741 PG seats in 16 colleges in 4 states have been approved as on November 2019. The list of beneficiary colleges is enlisted on the MCI website with the number of increased seats. The total number of PG seats created during 2014-15 to 2019-20 (up to June) are 24,187 including Diplomate of National Board and College of Physicians and Surgeons courses. Total post-graduate seats are 48,031. The per-seat grant in this scheme is INR 1.2 Crores. The allocation of budget for 2017-18 was INR 165 Crores and for 2018-19 it was INR 172.25 Crores. The utilisation of budget was 100% for 2017-18 and 2018-19. For the current year 2019-20, budget allocation is INR 800 Crores and out of that INR 487 Crores have been utilised (MoHFW, 2019).

Key Findings:

The scheme aimed to create 4000 PG seats, 4058 government PG seats have already been created in Phase I of the scheme and in phase II, 1741 PG seats have been created. Hence this scheme has led to significant increase in PG seats. Considering the need to produce more specialists, the scheme should be continued.

Table 6-3: Analysis of Upgradation of State Government Medical Colleges (PG seats) based on REESI+E Framework

Theme	Remarks
Relevance	**+** Given the shortage of specialists in India, this scheme helps in increasing the PG seats in government medical colleges leading to increase in number of specialists. **+** The scheme required to be continued to meet the desired number of specialists.
Effectiveness	**+** Approximately 1741 new PG seats have been created since 2009 under this scheme (Refer Output-Outcome Framework of the scheme)

Chapter 6: Human Resources for Health and Medical Education

Theme	Remarks
	+ As the scheme guidelines suggest to assist the medical colleges, doctor population ratio is positively impacted **+** Proactive measures are being taken which are helping in smooth processing of each step of implementation
Efficiency	**+** Firstly, the detailed project report is submitted and then the project is approved, and budget is after evaluation process is complete. The additional PG seats created are 100% utilised. **+** Budget allocated per seat is INR 1.2 Crore per seat and then the monitoring of the whole process is done on case-to-case basis.
Sustainability	**+** This scheme is providing a push to the state government to operationalise the newly added PG seats and if the centre stops providing such grant then this push will be lacking, and focus will be diluted (EY Primary Analysis: KIIs, 2019) **−** Grant provided is only for construction and equipment. So, it depends on the state to take it further. Further, health sector being state subject, the success of this depends largely on the interest of the state.
Impact	**+** Yes, this scheme provides support India by increasing the availability of pool of specialists and thus paving the way for achieving the goal of Universal Health Coverage **+** The situation has improved in the states where the initiatives have been taken by the state government
Equity	**+** With this scheme, the domicile students of the states have preference for seats and better access to the medical education.

	Satisfactory		Average		Needs Improvement

Table 6-4: Output-Outcome Framework

Upgradation of Government Medical Colleges (PG seats)					
Output ●					
Output	**Indicator**	**Target (2019-20)**	**Data**	**Source**	**Status**
District Hospitals Upgradation of State Govt Medical Colleges (PG seats)	No. of PG seats created	1000 PG Seats	1741 created in Phase 2 (2014-19)	EY Primary Analysis: KII, 2019	Met
Outcome ●					
Outcome	**Indicator**	**Target (2019-20)**	**Data**	**Source**	**Status**
To increase the availability of specialist doctors	Total number of PG seats overall	45,000 PG seats in the country including DNB, INIs, CPS	48,031 (including gov+pvt)	MoHFW Annual Report, 2020	Met
	Total number of enrolled PG students overall	*	37,338 PG Students capacity	EY Primary Analysis: KII, 2019; Annual Reports MoHFW	Target not given

B. Strengthening of Government Medical Colleges (UG Seats) and Central Government Health Institutions

The count of MBBS seats has increased to a total of 80,312 seats as of December 2019 across 539 medical colleges which are being run by government, societies, government-societies, and private entities. The maximum intake capacity of MBBS students has been increased from 150 to 250.

The grant for undergraduate seats has been capped at INR 1.2 Crores per seat. This scheme was one of the new initiatives launched as a part of the centrally sponsored scheme during Eleventh Five-Year Plan. The total proposed outlay of the Central Government is INR 7500 Crores for this scheme. Under this scheme, funds are allocated mostly for two categories – equipment and infrastructure. This funding is issued only after complete analysis by the technical team and approval of DPR.

Table 6-5: Financial Performance Strengthening of Government Medical Colleges (UG Seats) and Central Government Health Institutions

	BE (INR Crore)	RE (INR Crore)	AE (INR Crore)	Utilization % (with respect to BE)
2017-18	480.0	480.0	480.0	100%
2018-19	794.1	794.1	794.1	100%
2019-20	1,361.0	761.0	558.61 (P)	41%

(P)- till December 2019
Source: Union Budget for Ministry of Health and Family Welfare 2019-20, 2018-19, 2017-18, 2016-17

The number of new medical colleges opened during 2014-15 to 2019-20 (up to June 2019), is 158 (82 Government+ 76 Private) and total MBBS seats added is 25,964.

Figure 6-5: Total MBBS seats created (Govt. + Private)
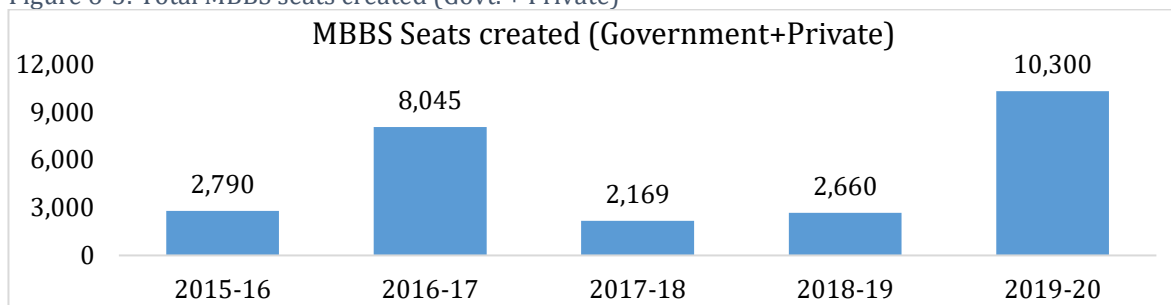
Source: Annual Report MoHFW, 2015-16, 2016-17, 2017-18, 2018-19, 2019-20

2,765 MBBS seats have been approved out of 1665 seats have been created in 37 government medical colleges in 12 states under this scheme against the target of increasing more than ten thousand MBBS seats. The list of beneficiary colleges is enlisted on MCI website. The fund sharing between the centre and states is in the ratio of 90:10 for NE/special category states and 60:40 for other states. The budget allocated for 2017-2018 was INR 480 Crores and for 2018-19 it was INR 794.07 Crores. The budget utilisation was 100% for both the years. For the current year 2019-20, budget allocation is INR 1,361 Crores, out of which INR 558.61 Crores have been utilised.

Key Findings

The scheme aims to create more than 10,000 MBBS seats (no target year defined) and has been successful in increasing 2,765 MBBS seats in government medical colleges and more proposals are on the way. This scheme has helped in continuous increase of the accessibility and affordability of medical education even for the under-served. The scheme should be continued till it achieves the goal of increasing ten thousand MBBS seats.

Chapter 6: Human Resources for Health and Medical Education

Table 6-6: Analysis of Strengthening of Government Medical Colleges (UG Seats) and Central Government Health Institutions in REESI+E Framework

Theme	Remarks
Relevance	✚ The scheme is continuously working on meeting the WHO norms and around 2,765 such seats have been created under the scheme since its inception (Refer Output Indicators)
Effectiveness	✚ The scheme is targeting to increase more than 10,000 MBBS seats and it is on the way to achieve the goal ✚ As the scheme guidelines suggest assisting the medical colleges in under-served areas, doctor population ratio is positively impacted ✚ Proactive measures are being taken which are helping in smooth processing of each step of implementation
Efficiency	✚ Firstly, the detailed project report is submitted and then the project is approved, and budget is after evaluation process is complete. The additional UG seats created is 100% utilised. ✚ Budget allocated per seat is INR 1.2 Crore and the monitoring of the funds disbursed is done by way of Utilization certificates.
Sustainability	✚ This is a one-time grant from the Central Government and centre is providing push to the state government to increase UG seats and without that support, the focus will be diluted. ➖ Grant provided is only for construction and equipment. So, it depends on the state to take it further as Health sector is a state subject.
Impact	✚ Yes, it has contributed in moving India a step closer to the goal of Universal Health Coverage by increasing the number of doctors in the country. The situation has improved in the states where the initiatives have been taken by the state government
Equity	✚ With this scheme, the domicile students of the states have preference for seats and better access to medical education

	Satisfactory		Average		Needs Improvement

Table 6-7: Output-outcome Framework

Strengthening of Govt Medical Colleges (UG Seats) and Central Govt Health Institutions					
Output ⬤					
Output	**Indicator**	**Target (2019-20)**	**Data**	**Source**	**Status**
Strengthening of Govt Medical Colleges (UG Seats) and Central Govt Health Institutions	No. of MBBS seats created under 10A	800 seats	1665 (cumulative)	EY Primary Analysis: KII, 2019	Year on year data is not available
Outcome ⬤					
Outcome	**Indicator**	**Target (2019-20)**	**Status**	**Source**	**Status**
To increase the availability of doctors	No. of MBBS seats created	800 MBBS seats under 10A	1,665 (cumulative)	EY Primary Analysis: KII, 2019	Year on year data is not available
	Total number of MBBS seats	Permission for MBBS seats is given as per statutory provisions. Currently there are 70,412 MBBS seats in the country.	80,312 (42,222 govt+ 38,090 pvt)	EY Primary Analysis: KII, 2019; Annual Reports MoHFW	Met

	Total number of enrolled MBBS students overall	*			Target not given

C. Establishment of New Medical Colleges (Upgrading District Hospitals)

This scheme was a new initiative taken during the Twelfth Five-Year Plan. The district/referral hospitals to be covered under the scheme are selected by the Central Government, in consultation with the State governments/UTs. The scheme aims to establish 157 new medical colleges with intake capacity of 100 seats each and thus, to add 15,700 seats cumulatively at undergraduate level in government medical colleges in underserved areas.

There are three phases of the scheme –

Phase I

Criteria for identification of Districts under the Scheme

- District Hospitals/referral hospital with bed strength of 200 or more
- District/Referral hospitals of the districts where there is no medical college
- Preference to underserved areas

58 districts in 20 States/UTs have been identified and approved under this Scheme to establish new Medical Colleges attached with existing district/referral hospitals. Funds of approximately INR 7507.70 Crores have been released to the State/UT Governments for the approved districts under the Scheme.

Under the Scheme, 42 Medical Colleges (in 13 States) have become functional. These are:

Table 6-8: List of functioning medical colleges

S.No.	State/UT	Districts
1.	A&N Islands	Port Blair
2.	Arunachal Pradesh	Naharlagun
3.	Chhattisgarh	Rajnandgaon, Ambikapur [Sarguja]
4.	Himachal Pradesh	Nahan (Sirmaur), Chamba and Hamirpur
5.	Jharkhand	Dumka, Hazaribagh, Palamu (Daltonganj)
6.	Jammu & Kashmir	Anantnag, Baramulla, Rajouri and
7.	Madhya Pradesh	Datia, Khandwa, Ratlam, Shahdol, Vidisha, Chhindwara and Shivpuri
8.	Maharashtra	Gondia
9.	Mizoram	Falkawn
10.	Odisha	Baripada (Mayurbhanj), Koraput, Bolangir and Balasore
11.	Rajasthan	Barmer, Bharatpur, Bhilwara, Churu, Dungarpur and Pali
12.	Uttar Pradesh	Basti, Faizabad, Firozabad, Shahjahanpur and Bahraich
13.	West Bengal	Birbhum (Rampur Hat), Cooch behar, Diamond Harbour and Raiganj (North Dinajpur)

Source: EY Primary Analysis: KII, 2019

The funds allotted to each such institution in phase I is INR 189 Crores per college.

Phase II

With the objective to ensure availability of one medical college in every 3 Parliamentary Constituencies and one Government medical college in each State, Ministry of Health & Family Welfare decided to establish 24 new medical colleges in Phase-II at a cost of INR 250 Crores per college and started the phase 2 of this scheme in February 2018. Eight States namely Bihar (5),

Jharkhand (2), Madhya Pradesh (1), Odisha (1), Rajasthan (1), Uttar Pradesh (8), West Bengal (5) and Sikkim (1) have been identified.

Criteria for selection of 24 new Medical Colleges under Phase-II

- District/Referral Hospitals of the districts where there is no medical college
- District Hospitals/Referral Hospital, having bed strength of 200 or more
- Districts hospitals which are located in unitary piece of land of 20 acres or in such manner that another piece of land which can house the medical college is available within 10 Kms
- Location of proposed 24 new medical colleges in Phase-II to be selected within the underserved areas

Out of the 24 identified medical colleges in phase II, 22 have been approved as of November 2019 and funds of INR 1546.59 Crores have been released to the State Governments for the approved medical colleges. Most parts of South India were not covered in Phase I and Phase II of the scheme which were later covered in phase III by changing the selection criteria for such development.

Figure 6-6: Mapping of phase I and phase II of selected district hospitals
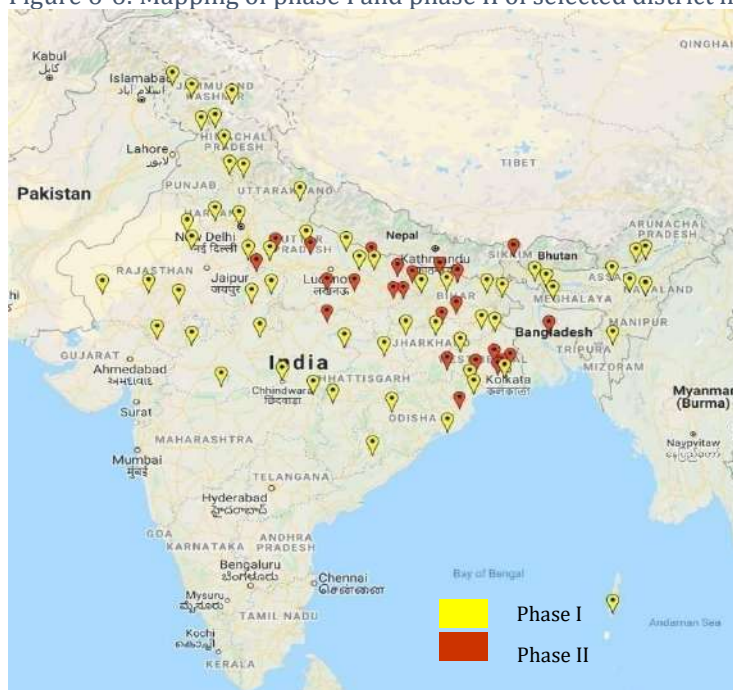
Source: Medical Education section of the ministry

Phase III

With a vision to expand Phase-I and Phase-II of this scheme, it was proposed to take up establishment of 75 new medical colleges in districts where there are no medical colleges by upgrading the district hospitals to ensure at least one medical college or an institute with facilities for Post Graduate medical education in each district of the country in a phased manner through public or private participation. Out of 75 districts, 57 districts in 11states/UTs have been selected. The Scheme was proposed for a period of three years from 2019-20 to 2021-22. It is expected to add 7500 MBBS seats in the Government sector.

The total cost per college is estimated at INR 325 Crores with fund sharing ratio of 90:10 for NE/Special Category States and 60:40 for other States. Recurring expenditure and cost beyond INR 325 Crores will be borne by the State Governments.

Criteria for Selection

- Districts where there is no medical college in Government or Private sector
- District Hospitals/referral hospitals having minimum bed strength of 200
- Locations of proposed 75 new medical colleges to be selected in "Challenge Mode" by the State/UT Government
- Preference to be given to Aspirational Districts
- Preference to be given to underserved areas

The proposed Phase-III of the scheme is for a period of three years with a total cost of INR 24,375 Crores including central share of INR 15,600 Crores.

As on November 2019, a total of INR 10,337 Crores has been contributed to 105 proposals from different states/UTs. The funding is given in three tranches - two are given for the infrastructural development and third for the purchase of equipment after completion of construction work. The budget allocated for 2017-18 was INR 3300 Crores and for 2018-19, it was INR 3167.68 Crores. The budget utilisation for both years was 100%. For the current year 2019-20, budget allocation is INR 2000 Crores, of which INR 1916.19 Crores have been utilised.

In the recent budget of 2020-21, it was announced that medical colleges will be attached to existing DHs in PPP mode: "Those states that fully allow the facilities of the hospital to the medical college and wish to provide land at a concession, would be able to receive Viability Gap Funding."

Table 6-9: Financial Performance Establishment of New Medical Colleges (Upgrading District Hospitals)

	BE (INR Crore)	RE (INR Crore)	AE (INR Crore)	Utilization % (with respect to BE)
2017-18	3,300.0	3,300.0	3,300.0	100%
2018-19	2,887.7	3,167.7	3,167.7	110%
2019-20	2,000.0	3,087.0	1,916.2 (P)	96%

(P)- till December 2019
Source: Union Budget for Ministry of Health and Family Welfare 2019-20, 2018-19, 2017-18, 2016-17

Key Findings: Under different phases, 157 new medical colleges have been established/to be established and 42 are functional. The low functionality status could be attributed to slow construction pace and States' interest to intiate and complete the project in a timely manner. With the completion of this ambitious project, India will have more than 700 medical colleges. This scheme has boosted the medical education sector especially in underserved areas and government should aim to complete this scheme to strengthen the medical education system with increased seats.

Table 6-10: Analysis of Establishment of New Medical Colleges (Upgrading District Hospitals) in REESI+E Framework

Themes	Remarks
Relevance	+ With better utilisation of the existing resources and services at district hospitals, this scheme can multiply the impact of newly established medical colleges in a cost-effective manner. Given the shortage of doctors in India, the Scheme aims to contribute in increasing the UG seats in government medical colleges + This scheme is valid with respect to meeting the WHO norms for doctor population ratio with better utilisation of existing resources.
Effectiveness	+ This scheme has contributed in increasing the number of UG seats to meet the requirements in under-served areas where medical colleges don't exist. There are three phases of the scheme to improve the accessibility to medical education Out of 157 proposals, 42 medical colleges are operational so far.

Chapter 6: Human Resources for Health and Medical Education

Themes	Remarks
	✚ There are 42 medical colleges which are operational under this scheme since 2014. As the scheme guidelines suggest to assist the medical colleges in under-served areas, doctor population ratio is positively impacted ✚ The states provide the detailed project report, confirmation on the land availability and after evaluating it, the centre disburses the fund. Audited Utilisation Certificates are submitted by the states to the centre
Efficiency	✚ This scheme has provision of utilising the existing resources under the district hospitals efficiently and in a cost-effective manner. With the use of the existing hospitals, the newly established colleges can be made operational in a short period. ✚ Funds allocated under this scheme are being utilised for the construction of medical college and procurement of equipment
Sustainability	✚ This scheme provides onetime grant for infrastructure and equipment procurement which creates a push for development of more number of colleges. In absence of this grant, the continuation of the scheme will be dependent on the interest and agenda of the state. ✚ Grant provided is only for construction and equipment. Further, states are responsible for operationalisation of these medical colleges. Political and financial risks are associated with the same.
Impact	✚ The Scheme is contributing in achieving Universal Health Coverage by improving the doctor population ratio. Under the scheme, 157 new medical colleges have been established/to be established and 42 have been made functional. ✚ Before this scheme, the number of private medical seats were more than the government medical seats. Later on, the number of UG seats have increased to 4150 (2014-19) in government medical colleges under this scheme and now, the number of government medical seats exceeds that of private medical seats (Refer 6.2.3) ▬ Year on year data unavailable for measuring the outcomes of the scheme
Equity	✚ Preference to be given to Aspirational Districts ✚ Preference to be given to underserved areas

	Satisfactory		Average		Needs Improvement

Table 6-11: Output-Outcome Framework

Establishment of New Medical Colleges (Upgrading District Hospitals)					
Output 🔵					
Output	**Indicator**	**Target (2019-20)**	**Data**	**Source**	**Status**
Establishment of New Medical Colleges (Upgrading District Hospitals)	Medical Colleges	15 Medical Colleges	157 approved and 42 functional colleges so far	EY Primary Analysis: KII, 2019	Year on year data is not available
Outcome 🔵					
Outcome	**Indicator**	**Target (2019-20)**	**Status**	**Source**	**Status**
To increase the availability of medical seats	No. of UG seats added under the scheme	• 15 Medical Colleges • 1500 seats • Tertiary level services • Increased availability of medical seats	157 approved and 42 functional colleges so far	EY Primary Analysis: KII, 2019	Year on year data is not available

D. Upgradation/ strengthening of Nursing Services (ANM/GNM)

The number of health workers per 10,000 population is less in India as compared to WHO norms of 23 per 10,000 population which includes doctors, nurses and mid-wives (Nair, 2015). As per WHO standards, 1 nurse per 400 population is required as compared to existing 1 nurse for 588 population in India (NITI Aayog, 2018). Total number of nurses (RNs & RMs), ANMs, and Lady Health Visitors are 20,49,135, 8,61,114 and 56,489 respectively as on December 2017. The number of nursing institutes for ANMs, GNMs, B.Sc. (Nursing), Post Basic B. Sc. (Nursing), M. Sc. (Nursing) and Post Basic M. Sc. (Nursing) are 1904, 3212, 1968, 778, 653 and 272 respectively.

Under this scheme, financial assistance of INR 2030 Crores was proposed to be released to 23 high focus states to create additional intake capacity of 13,500 candidates per year. Under Twelfth Five-Year Plan, funds for 112 ANM and 136 GNM schools were sanctioned for 27 states.

Table 6-12: Number of ANM and GNM institutes

S.No.	Type of Institutes	Total number
1.	Institutes running ANM Nursing course	535
2.	Institutes running GNM Nursing course	1,086
3.	Institutes running B. Sc. Nursing course	943
4.	Institutes running M. Sc. Nursing course	291
5.	Institutes running P B B. Sc. Nursing course	331
6.	Institutes running P B Diploma Nursing course	34
7.	Nurse Practitioner in Critical Care (NPCC) Institutes running Nurse Practitioner in Critical Care (NPCC) course	20

Source: Nursing Council of India website as of 28th November 2019

Figure 6-7: Trends in number of Human Resources
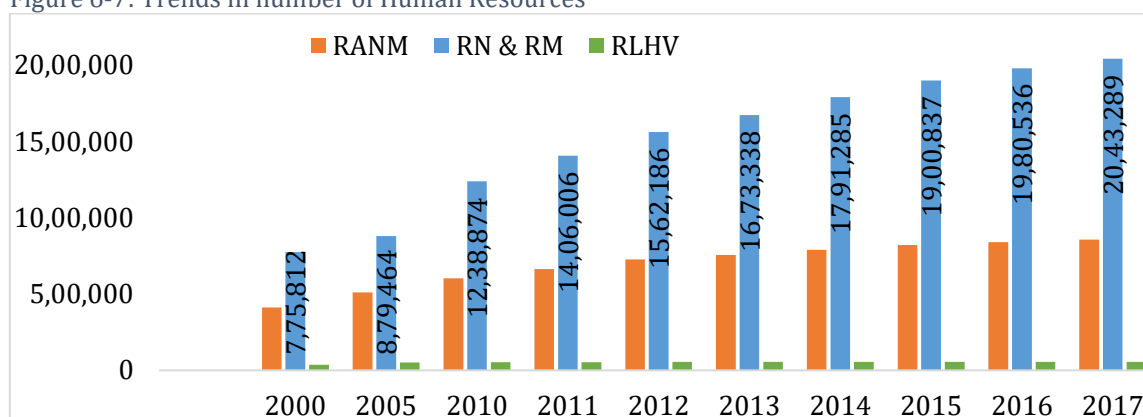
Source: Indian Nursing Council, Annual Report 2017-18

The budget allocation for 2017-18 was INR 60 Crores and for 2018-19 it was INR 66 Crores, the expenditure was INR 60 Crores for year 2017-18 and INR 58.71 Crores for year 2018-19. The funding pattern is in the ratio of 85:15 by central and state governments and this was further changed to 60:40 as per 14th finance commission's recommendation.

Table 6-13: Financial Performance of Upgradation/ strengthening of Nursing Services (ANM/GNM)

	BE (INR Crore)	RE (INR Crore)	AE (INR Crore)	Utilization % (with respect to BE)
2017-18	60.0	60.0	60.0	100%
2018-19	66.0	66.0	58.7	89%
2019-20	64.0	32.0	3.1(P)	5%

(P)- till December 2019
Source: Union Budget for Ministry of Health and Family Welfare 2019-20, 2018-19, 2017-18, 2016-17

Chapter 6: Human Resources for Health and Medical Education

The maximum budget allocation per ANM school is INR 5 Crores and per GNM school is INR 10 Crores. Each of the ANM and GNM schools is supposed to increase the admission capacity by 40 and 60 seats respectively.

In the discussion with stakeholders, it was found that there is no demand from the states regarding establishment of GNM schools. So far, approximately INR 954 Crores have been released to the states. For 2019-20, only INR 3.06 Crores have been released out of the budget of INR 64 Crores. It has been observed that the states are not submitting the Utilisation Certificates for further disbursement of funds.

Several super-specialty nursing courses like Nurse Practitioners, Post Graduation Diploma in various nursing specialties and residency programs are also started by Indian Nursing Council. A bridge course for registered nurses and midwives seeking jobs overseas is also under consideration. Continuing Nursing Education (CNE) and Renewal of License guidelines have also been framed by the Indian Nursing Council for all nurses, including faculty in nursing education.

Key Findings:

The scheme has aimed to provide equitable distribution of ANM and GNM schools in 23 high focus states and proposals for 112 ANM and 136 GNM schools in these states have been approved. There has not been much demand from the states regarding the establishment of GNM schools. With the convergence of GNM curriculum and B. Sc Nursing course, there is no such need of separate GNM schools and given the growth of HWCs, the ANM schools need to be established further to cater to the needs.

Table 6-14: Output-Outcome Framework

Upgradation/ strengthening of Nursing Services (ANM/GNM)					
Output 🔴					
Output	**Indicator**	**Target (2018-19)**	**Data**	**Source**	**Status**
To make 40 ANM/ GNM School functional. To provide financial assistance to the State Government for establishment of ANM/GNM Schools	To provide financial assistance to the State Government for establishment of ANM/GNM Schools. Number of ANM/ GNM School functional	25 ANM/GNM Schools	55 ANM and 68 GNM schools out of those approved in 12th Plan	EY Primary Analysis: KII, 2019	Unmet
Outcome 🟢					
Outcome	**Indicator**	**Target (2018-19)**	**Data**	**Source**	**Status**
To increase the number of nurses for healthcare	Operationalisation of ANM/ GNM Schools	50 ANM/GNM Schools to be operationalized	55 ANM and 68 GNM schools are functional	EY Primary Analysis: KII, 2019	Met

E. *Setting up of State Institutions of Para-Medical Sciences in States and Setting up of Colleges of Para-medical Education*

The Allied and Healthcare Sciences division under the Department of Medical Education aims to develop the human resources for para-medical services and to establish a National Institute for Allied Health Sciences (NIAHS) and 8 Regional Institutes for Allied Health Sciences (RIAHS). The proposal of NIAHS and RIAHS was later on disapproved by the cabinet. The cost of these establishments was projected to be INR 1150 Crores.

Given the time lag between the approval by the Cabinet and actual implementation of the Scheme, due to several reasons including delay in land allotment by the State etc., the last estimated cost overrun increased to more than 100% of the original estimate and shot up to an approximated Rs 1800 Cr. for construction of the facilities alone by 2018.

With reference to the above, it was decided that a 100 bedded hospital would be established at the site of NIAHS (Rural Health Training Centre, Najafgarh) to cater to the health needs of the surrounding villages, while the establishment of NIAHS and RIAHS would be dropped from the scheme. Further, it was decided that the existing training institutes like the National Institute of Health and Family Welfare (NIHFW) and State Institutes of Health and Family Welfare (SIHFWs) along with Collaborative Training Institutes (CTIs) in the States will be supported by the Ministry through State PIPs under NHM budget to meet the training requirements.

The Cabinet approved the proposal for discontinuation of NIAHS and RIAHS except the Establishment of 100 bedded general hospital at RHTC Najafgarh in 2018 with the scheme amount already released to the Project Consultants HLL. The project was handed over for completion under the supervision of DGHS.

Under the Twelfth Five-Year plan, INR 493.2 Crores were approved, and an amount of INR 13.7 Crores has been earmarked for each of 36 states/UTs. The components for which this amount is given include infrastructure, equipment and capacity development (INR 10 Crores), manpower development (INR 3 Crores) and contingencies and miscellaneous (INR 0.7 Crores).

The budget allocation for 2017-18 was INR 15 Crores; and it was INR 20 Crores for 2018-19. The expenditure was INR 15 Crores in the year 2017-18 and INR 20 Crores in 2018-19. For FY 2019-20, INR 20 Crore were allocated and out of that INR 10.96 Crores have been released already.

Table 6-15: Financial Performance Setting up of State Institutions of Para-Medical Sciences in States and Setting up of Colleges of Para-medical Education

	BE (INR Crore)	RE (INR Crore)	AE (INR Crore)	Utilization % (with respect to BE)
2017-18	15.0	15.0	15.0	100%
2018-19	20.0	20.0	20.0	100%
2019-20	20 0	20.0	10.9	55%

(P)- till December 2019
Source: Union Budget for Ministry of Health and Family Welfare 2019-20, 2018-19, 2017-18, 2016-17

No further infrastructure construction for the training of para-medical workforce through standalone facilities will further take place (EY Primary Analysis: KII, 2019). The authorities have been facing monitoring challenges due to unregulated domain of 53 para-medical professions. Overall, the Expenditure Finance Committee is considering relaunching this scheme due to the stated concerns (EY Primary Analysis: KII, 2019). For this, Allied and Healthcare Professions Bill, 2018 has been submitted for introduction in the Rajya Sabha. The bill proposes to have a Central and corresponding state Allied and Healthcare Council. The proposed Bill covers more than 50 allied and healthcare professions which are yet unregulated. The Bill aims to establish a National Commission along with corresponding State Allied and Healthcare Councils (establish/ strengthen) to ensure quality education and practice including setting minimum standards professional courses ranging from Diploma, Baccalaureate to Master's program in different Allied and Healthcare professions.

Chapter 6: Human Resources for Health and Medical Education

Key Findings:

Due to absence of a central regulatory council, there are no formal records of para-medical professionals. There is a need to have such para-medical council at the centre to regulate the sub-sector for greater good. The scheme may be re-launched after taking appropriate steps towards implementation and monitoring.

Table 6-16: Output-outcome Framework

Setting up of State Institutions of Para-Medical Sciences in States and Setting up of Colleges of Para-medical Education					
Output ⬤					
Output	**Indicator**	**Target (2018-19)**	**Data**	**Source**	**Status**
Creation of UG& PG Seats in Allied Health stream	UG&PG Seats in allied health stream	130 (UG and PG Seats)	Not available	EY KII Analysis:	Data not available
Outcome ⬤					
Outcome	**Indicator**	**Target (2018-19)**	**Data**	**Source**	**Status**
To increase the availability of Allied Health Professionals	UG/PG seats creation	130 UG/ PG Seats	Not available	EY KII Analysis:	Data not available

Further to the above-mentioned components of this CSS, a few other initiatives have been taken by the government to augment the medical education which include the following:

- There has been relaxation for minimum land requirements for establishment of medical colleges in metropolitan cities. Relaxation in terms of norms has been provided to set up the medical colleges in terms of requirement of land, faculty, staff, beds and other infrastructure to support the increase in the number of medical colleges.

- There has been provision to offer lesser number of seats to the applicant medical college, in case, it falls short of minimum prescribed requirements of applied intake to avoid wastage of human resources.

- A consortium (group of 2 or up to 4 private organizations) has been allowed to establish a medical college.

- DNB qualification has been recognized for appointment as faculty to take care of shortage of faculty.

- Timely disbursement of funds has been ensured under each of the scheme under HRH & ME.

- The age limit for appointment/extension/re-employment against posts of teachers/deans/principals/directors in medical colleges has been increased to 70 years.

- There has been also a provision for lateral entry of the consultants/specialists working in concerned specialty in a minimum 300 bedded non-teaching district hospital owned and managed by the state government/central government. In this regard, the consultants/specialists with experience of more than 18 years with 4 research publications as 1st author or corresponding author to be equated as professor rank and with experience of more than 10 years with 2 research publications as first author or corresponding author is to be equivalent as Associate Professor.

- The medical colleges are evaluated as per the minimum standard requirements for medical

college regulations, 1999 framed by the MCI under Indian medical Council Act, 1956.

- Guidelines for midwifery services in the country have been rolled out which will create a cadre of nurse practitioner in midwifery.

- Continue Nursing Education has been started to improve the quality of nursing education.

- Registration Tracking System – a live register of nurses has been launched which will be of great help to the government for planning and policy decisions.

- A curriculum for nurse practitioner in critical care (PG Residency Program) has been launched to meet the challenges and demand of tertiary care services in India.

- Process to phase out GNM course by March 2022, to implement single entry level for nursing has been initiated.

- Registered nurses are given additional six months course to function as middle level health workers at HWCs.

- Post-basic speciality courses in ten areas have been prepared for training nurses to function effectively in health care teams and to provide specialised nursing care to the patients in hospitals and communities.

6.2.3   REESI+E Analysis

Table 6-17: Summary Evaluation of Human Resources for Health and Medical Education based on REESI+E Framework

Theme	Remarks
Relevance	**+** Given the shortage of specialists, doctor and allied health workforce in India, this scheme helps in increasing the UG and PG seats in government colleges **+** The scheme required to be continued to meet the desired number of specialists, doctor and other health workforce as per norms **+** The program for GNM colleges has been discontinued due to integration with B.Sc. nursing course
Effectiveness	**+** Substantially increased UG and PG seats (achieved more number of government UG seats than private UG seats) **+** Facilitated opening of new medical colleges **–** Target of increasing more than 10,000 MBBS seats yet to be met (timeline for target achievement not defined) **–** Programs for allied healthcare professional colleges/seats have observed low demand and have been discontinued (except for ANM).
Efficiency	**+** 100% fund utilisation **+** Utilising the existing resources under the district hospitals efficiently and in a cost-effective manner
Sustainability	**+** Initiatives to develop medical colleges under various models such as PPP **–** Continued support to States through central grant is essential for development of new medical colleges, and increasing UG and PG seats in underserved areas.
Impact	**+** Scheme facilitated increase in the availability of pool of medical and allied professionals and thus paving the way for achieving the goal of Universal Health Coverage **+** Before the onset of the scheme, the number of private medical seats were more than the government medical seats, which has reversed **–** Year on year data unavailable to measure outcomes of the programs
Equity	**+** Preference to underserved areas including districts without medical college and aspirational districts

Satisfactory   Average   Needs Improvement

Chapter 6: Human Resources for Health and Medical Education

6.2.4 Cross-sectional Themes

Table 6-18: Analysis of Cross-Sectional Themes for Human Resources for Health and Medical Education

Cross-Sectional Theme		Indicative Area of Enquiry	Key Questions	Remark
Accountability & Transparency	🟠	Availability of Data Records and Reports in public domain	Is data available for the scheme in public domain?	**+** Yes **–** Data for the Outcome target is not available
			What data records are available for the scheme in public domain?	**+** Data is available in public domain regarding the number of seats and colleges available in the country
			What level of data is available in public domain - National/State/District-level/ Beneficiary level;	**+** National and state level (with college addresses)
			Is beneficiary-level data available? At what level?	**–** No
		Monitoring Mechanisms	What is the frequency of audits?	**–** No social/physical audits are envisaged. Only Audited Utilisation Certificates are submitted by the states to the centre as fund utilization proof
			Has a social audit been conducted? When?	**–** No
			Does a robust monitoring mechanism exist and at what level?	**–** No, the monitoring mechanism does not exist at all levels during the Scheme implementation. There are no social/physical audits proposed in the framework post-completion of fund disbursement to the college.
			What design aspects have been implemented for reduced leakages?	**+** Routing of funds through State treasury **–** Only utilization certificates provided. There is no mechanism for assessing functional status of colleges post utilization of funds.
		Evaluation Mechanisms	Process/impact evaluation studies conducted in the last decade - frequency, quality, coverage, etc.	**–** No third-party evaluation **–** No impact study conducted so far.
		Citizen Accountability	Has a citizen charter been carefully drafted, adopted and publicized?	**–** No
			Are there functional grievance redressal mechanisms that successfully incorporate beneficiaries' and non-beneficiaries' concerns?	**–** No formal mechanism in place.

Cross-Sectional Theme		Indicative Area of Enquiry	Key Questions	Remark
			Is the RTI mechanism functioning effectively?	**+** Yes
		Financial Accountability	What funding mechanisms are being used?	**+** Funds are being transferred to the States through treasury mode. Scheme is also subjected to CAG Audits
			Is DBT being used?	Not applicable
Direct/Indirect Employment Generation	●	Employment generation	What is the level of employment generation through schemes in the sector and overall sectoral contribution in National employment generation?	**+** Total number of PG seats (including DNB and CPS courses) overall are 48031 and total number of MBBS seats overall (government + private) are 80,312.
			What is the proportion of Informal jobs converted into formal?	**–** Data unavailable
			What is the improvement in income levels?	**–** Data unavailable
			What is the improvement in availability of employment opportunities?	**–** Data unavailable
			What is the women participation (%) in the Sector/Program?	Not applicable
		Quantum and kind of self-employment opportunities generated	Is financial assistance provided through Mudra etc.?	Not applicable
			Quantum and kind of self-employment opportunities generated	Not applicable
Gender mainstreaming	●	Inclusiveness in scheme design/planning	Is there a specific mention of gender equality and equity considerations in the scheme guidelines/objectives, i.e. has the scheme been designed keeping gender considerations in mind?	Not applicable. The Scheme is providing support only with respect to infrastructure creation for equitable access of medical education. The Scheme focuses on providing access to colleges in districts with no existing medical colleges including aspirational districts.
			Is gender budgeting being actively practised?	Not applicable
			Are there any initiatives for the inclusion of transgender people?	
		Gender-friendly infrastructure and	Are gender-friendly plans translating into empowerment of women in implementation?	Not applicable

Chapter 6: Human Resources for Health and Medical Education

Cross-Sectional Theme		Indicative Area of Enquiry	Key Questions	Remark
		policies	Are there women-friendly policies in place, like parental leave (maternity and paternity), crèches, flexible working hours, inclusion in decision-making etc.?	Not applicable
			Is there a gender wage gap, and any measures in place to mitigate the same?	Not applicable
			Are there sufficient safeguards to ensure a safe working environment for women, including from physical injury, sexual harassment etc.?	Not applicable
		Capacity Building	Is there any specific training offered for women to enhance job roles or assist career progression?	Not applicable
			Are there sufficient awareness-raising communications or courses regarding women-friendly provisions/safeguards, sexual harassment policies, grievance redressal mechanisms etc.?	Not applicable
			Are there sessions/plans for sensitization of the work force on gender equality?	Not applicable
Climate change & sustainability including adoption of climate-change resilient practices & diversifications		Climate resilience	Is there a well-developed understanding of how climate change will affect the sector?	Not applicable
			Are appropriate climate resilient policies, for mitigation and/or adaptation, included in the scheme objectives and design?	Not applicable
			Are the planned design factors being successfully implemented?	Not applicable
			Is there an appropriate disaster risk reduction plan in place?	Not applicable
		Sustainable practices	Are there possibilities for circular economy development in the sector?	Not applicable

Cross-Sectional Theme		Indicative Area of Enquiry	Key Questions	Remark
			Is there an appropriate/sufficient focus on diversification (eg. Agro biodiversity, agro-ecology) to reduce risk?	Not applicable
			Is there an effective waste management/end-of-life system in place for resources used in the sector/schemes?	Not applicable
		Awareness and capacity building	Are there any training sessions held regularly for reducing pollution, adopting green practices, using local materials etc.?	▬ Data unavailable
			Are the end beneficiaries aware of climate risks and possible individual mitigation/adaptation measures?	▬ Data unavailable
Role of Tribal Sub-Plan (TSP) and Scheduled Caste Sub-Plan component of the scheme in mainstreaming of Tribal and Scheduled Caste population	🔵	Funds allocated under TSP/ SCSP and other provisions for vulnerable communities	What is the fund allocated under TSP & SCSP for each scheme?	✚ Strengthening Government Medical College (UG Seats) and Central Government Health Institutions- 165.56 Cr for SCSP and 85.76 Cr for TSP ✚ Establishing New Medical Colleges (Upgrading District Hospitals)- 558.63 Cr for SCSP and 299.29 Cr for TSP
			What is the fund allocated under TSP & SCSP for each scheme in different states?	Data unavailable
			How much of the fund been utilized overall and by each state?	▬ Data unavailable
			For what outputs has the fund been utilized?	▬ Data unavailable
			What has been the effect of the TSP & SCSP funds on improving equity?	▬ Data unavailable
		Inclusion of vulnerable groups in scheme as well as sector	What are the interventions implemented for specific vulnerable groups?	✚ 10% EWS reservation in Government or aided medical colleges
			What are the major challenges for inclusion?	▬ Data unavailable
			Are there any vulnerable groups not covered?	▬ Data unavailable
Use of IT/Technology	🔴	Deployment of IT enabled mechanisms for	In case of a scheme to create physical assets, is geotagging and use of geotagged photographs being done?	▬ -No, Geotagging and constructions status using online visuals are not been practiced.

Chapter 6: Human Resources for Health and Medical Education

Cross-Sectional Theme		Indicative Area of Enquiry	Key Questions	Remark
in driving efficiency		monitoring of the Schemes	In case if the scheme intends to directly benefit an individual beneficiary or an enterprise or a collective, is JAM trinity and DBT being used?	Not applicable
			How is technology being used for on-ground data collection?	▬ Data unavailable
			Is there an online scheme MIS to ensure regular update of progress and effective supervision?	▬ No
			What is the granularity of data available in MIS?	▬ Data unavailable
			What is the frequency at which the information is being updated/reported on the MIS/Dashboard?	▬ Not Practiced
			Are the IT-enabled mechanisms user friendly?	▬ -Not Practiced
		Use of latest technology to improve efficiency and effectiveness of scheme implementation	What are the technologies being used in project implementation, service delivery?	▬ Data unavailable
			What are the technologies being used in project implementation, service delivery?	▬ Data unavailable
			Which schemes are using the latest technologies?	▬ Data unavailable
			How is technology adoption being encouraged?	▬ Data unavailable
Development, dissemination & adoption of innovative practices, technology & know-how	●	Fund allocation towards promotion of innovation	What percent of total allocation is directed towards development, dissemination and adoption of innovative practices and technology? How much of it is utilized?	▬ Data unavailable
		Contribution of improved practices in increasing outcomes	What is the status of acceptance of innovative practices and technologies amongst the target beneficiaries? What are the possible challenges faced hindering acceptance of the same?	▬ Data unavailable
			What is the impact of innovative technologies and practices on scheme and sectoral outcomes?	▬ Data unavailable

Cross-Sectional Theme		Indicative Area of Enquiry	Key Questions	Remark
Stakeholder and Beneficiary behavioural change	🔵	Fund Allocation	What percent of total allocation is directed towards Awareness generation or sensitization? What is the utilization rate? and How much impact has it been able to generate in terms of behaviour change?	− Data unavailable
		Mechanisms to promote and ensure behaviour change	What are the existing mechanisms at State/District/Block level to promote beneficiary awareness and sensitization?	− Data unavailable
			What activities are undertaken at District/Block level to promote adoption of good practices?	− Data unavailable
Research & Development	⚪	Fund Allocation	What percentage of total allocation (Sector as well as Scheme specific) is directed towards R&D? How much of that percent is being utilized?	Not Applicable
		Institutes and departments dedicated for R&D	What is status of availability of any Institute or centre or department dedicated for R&D in the Sector?	Not Applicable
		Private Sector participation in R & D	What is the percentage of private sector participation in R&D?	Not Applicable
Unlocking Synergies with other Government Programs	⚪	Convergence (Inter-Ministerial /Inter-Departmental/Financial/ Human Resource/Administrative/ Institutional/ Schemes)	What are the existing mechanisms to ensure convergence across Schemes, Departments at different levels (i.e. National/State/District/Block)?	Not applicable
			What activities are undertaken to ensure convergence at community level? Are there any Action Plans prepared at State/District/Block level to ensure the same?	Not applicable
Reforms, Regulations	🟡	Adoption of models acts and reforms at	What are the acts/rules/regulations adopted at different levels (National/State/District)?	+ Medical- Construction of colleges are undertaken as per National Medical Commission guidelines; + Nursing- Nursing Council Act, 1947

Cross-Sectional Theme		Indicative Area of Enquiry	Key Questions	Remark
		governance, institutional and administrative level		▬ Pharmacy Act, 1948- Pharmacy Council of India Paramedical- No Allied and Healthcare Professions act has been adopted so far
			What are the challenges faced in effective implementation of the Model Acts and Regulations?	▬ There is a need for central Allied and Healthcare Professions act like National Medical Commission Act, 2019 for regulating paramedical councils in the States. A bill was introduced in the Rajya Sabha in December 2018 which is currently pending for observations with the standing committee
Impact on and role of private sector, community/ collectives/ cooperatives	🟡	Private Sector Participation	What is the percentage of private investment in the clusters/programs run by the government?	▬ Data unavailable
			What incentives are available to promote private investments in the Sector?	▬ Data unavailable
			How Private sector can help in improving value chain creation?	+ Private Sector can bring in additional capacity for service delivery
		Public-Private Partnership	What provisions/incentives are existing to promote PPP in the Sector?	+ It has been proposed in the Budget 2020-21 that existing district hospitals can be upgraded to medical colleges via PPP model
			How well have PPP functioned in the Sector? What are the challenges faced?	Not applicable

🟢	Satisfactory	🟡	Average	🔴	Needs improvement	⚪	Not relevant/ applicable	🔵	Data unavailable

6.3 Issues and Challenges

Shortage of teaching faculties and other resources in medical colleges

- It has been observed that there are vacant faculty posts in medical colleges which can only be addressed by the respective states (EY Primary Analysis: KII and Facility Survey, 2020). This issue was highlighted in each of the medical college visited during the primary survey.

- NMC (erstwhile MCI) norms have been stringent in this regard with minimum post graduate and experience requirement to apply for the faculty positions which becomes a deterrent for the potential candidates. For instance, in Patiala and Amritsar government medical colleges, there has been more than 57% vacant posts (for professors and assistant professors). The hiring has been pending since 2015 and in some cases even for a longer period (EY Primary Analysis: KII, 2019).

- Primary survey to some of the newly established medical colleges along with existing district hospitals, it has been observed that the status of service delivery and teaching program in the affiliated medical colleges suffered from the shortage of specialists and teaching faculty. Facilities reported substantial vacancies in the posts (EY Primary Analysis: Facility Survey, 2019). Though the recruitment process has been underway, joining of the selected candidates remains uncertain (EY Primary Analysis: Facility Survey, 2019).

Lack of participation of nursing professionals in nursing related policies

- Nurses find themselves inadequately positioned mainly due to the deficient management skills (EY Primary Analysis: KII, 2019). Recruitment of nurses in the organizational structure has not been according to their competencies leading to vacancies in nursing positions at primary health level (EY Primary Analysis: KII, 2019).

Figure 6-8: Sanctioned posts of Health Workforce (ANMs at SCs and PHCs)
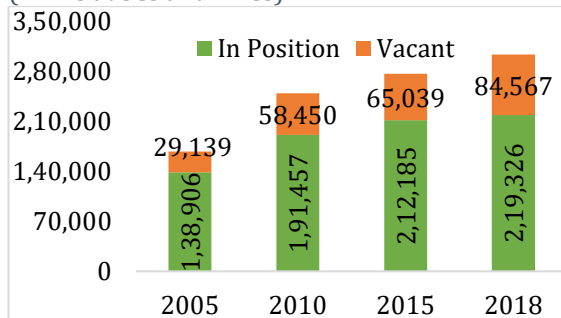
Source: Rural Health Statistics 2005, 2010, 2015 & 2018

Figure 6-9: Sanctioned posts of Health Workforce (Nursing Staff at PHCs and CHCs)
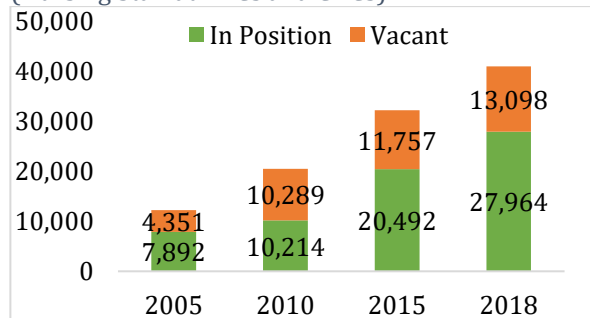
Source: Rural Health Statistics 2005, 2010, 2015 & 2018

- The structure of nursing management at national and state level is managed primarily by senior policy makers from the medical fraternity and administrative framework. As a result, there has been less scope for nursing professionals to take part in policy-making or suggest any reforms. The representation of nurses in different stakeholder forums and at the policy-making level has been inadequate (Bagga, Jaiswal, & Tiwari, 2015).

Need for capacity building framework for health workforce

- The training outcomes are not being evaluated with respect to post-training performance and improvement. Currently most of the in-service trainings are not being followed up. Template guidelines and online tools to assist capacity building are in place but the implementation and

technical support for the same remains a challenge. Also, there is a lack of a component on soft skills and emotional intelligence in the training process (EY Primary Analysis: KII, 2019).

- The design of the training programs does not link the previous in-service trainings imparted and future requirements(EY Primary Analysis: KII, 2019).

- Lack of coordination between the governing bodies of state health mission and district health mission observed in resolving local issues (EY Primary Analysis: KII, 2019).

- Due to vacancies of Nursing Superintendents and Deputy Nursing Superintendents at district hospitals and above levels there remains a gap in following up on vacancies for nursing professionals at lower levels (EY Primary Analysis: KIIs, 2019). Adequate resources have been provided by the MoHFW to the state directorates to create nursing cells, but its implementation has been sub-optimal (EY Primary Analysis: KIIs, 2019).

- The nursing curricula is overlapping in nature with similar content in different courses (EY Primary Analysis: KIIs, 2019).

Low involvement of district hospitals and above -as platforms for service delivery, learning and capacity building of HR

- Lower involvement of district hospitals and medical colleges observed in supporting primary healthcare facilities with respect to knowledge transfer, infrastructure and technology support for addressing the local community needs (EY Primary Analysis: KIIs, 2019).

- NHM has recommended that district hospitals may document best practices for improving service efficiency and develop a district knowledge hub. The progress on these dimensions has been observed to be steady but slow (EY Primary Analysis: KIIs, 2019).

Unregulated Allied and Healthcare Professions (Para-medical) Sector

Allied healthcare professional sector is unregulated leading to lack of availablity of demand and supply data for ensuring better planning and maintaining quality. Due to this, the demand for the Scheme: Setting up of State Institutions of Para-Medical Sciences in States and Setting up of Colleges of Para-medical Education has been observed to be low (EY Primary Analysis: KIIs, 2019).

6.4   Recommendations

A Comprehensive Human Resource Policy and systems approach to address HRH issues

- State Governments need to develop a transparent, comprehensive and context specific policy to develop and retain HRH in their states. The criteria for recruitments, posting, transfers, rotation and retention of HRH should be objective, transparent and supported by a robust Human Resource Information Management System.

- The policy should also include state specific attraction and retention strategies especially for under-serevd areas. For example: Bijapur model in Chattisgarh.

- In-service capacity building should also be included in the policy guidelines focusing on selection of trainees, training methodology, post training follow-ups and linkages with the pre-service experience. It is also recommended that new joinee induction and on the job training programs must include elements of leadership, team building, soft skills and patient -centric approach in the teaching and learning curricula.

- Representation of subject matter experts (in-service/retired) in policy making at all levels for a particular sub-sector should be mandatory.

Training and Accountability of Health workforce

- Assessment and implementation of state level training viz-a-viz international standards to impart value based medical education.

- To solve the issue of accountability and absenteeism of health workforce, bio-metric based attendance system should be included in health facilities (refer to case study below).

Case Study 28 - Integrated Medical Information and Disease Surveillance System with biometric monitoring system at Primary Health Centers in Karnataka

Introduction

In 2010, the Government of Karnataka developed the Integrated Medical Information and Disease Surveillance System ("IMIDSS") to address absenteeism in PHCs and patient tracking. A biometric monitoring system that objectively records attendance and reports it to supervisors in real-time was installed, combined with a robust system of incentives and penalties for unauthorized absences, led to an improvement in staff attendance and patient health.

Implementation of the practice

From a sample of 322 PHCs across five socio-economically diverse districts, 140 were randomly selected to receive IMIDSS while the remaining 182 continued with the status quo paper system (J-PAL, 2020). PHCs in the treatment group were equipped with an IMIDSS device, consisting of a fingerprint reader and a multi-purpose mobile phone. The device was used to record staff attendance via thumb impression at the beginning and end of each day. It was also capable of recording details about cash benefits paid to patients along with photographs and signatures and thumb impressions of beneficiaries taken at the clinic, and statistics regarding the number of patients seen and the diseases treated. In practice it was primarily used for attendance monitoring (J-PAL, 2020).

Results of practice

- The monitoring system increased attendance among nurses, lab technicians, and pharmacists
- Even though the official leave policy was not strictly enforced, the monitoring system increased medical staff attendance by 5.5 percentage points (15 percent) from a base of 37 percent among medical staff. It had the greatest impact on nurses, lab technicians, and pharmacists (a 7%-point increase from a base of 40 percent), but virtually no effect on doctors (J-PAL, 2020).
- The new monitoring system led to improved antenatal care and infant health. Pregnant women in treatment PHCs were 11 percentage points (27 percent) more likely to receive recommended Iron Folic Acid tablets, compared to 39 percent of the comparison group (J-PAL, 2020).
- Mothers in treatment at PHCs were 8 percentage points (16 percent) more likely to have their baby delivered by a doctor, compared to 50 percent of the comparison group. Their newborn children were 4.6 percentage points (26 percent) less likely to be born underweight, compared to 18 percent of the comparison group, and weighed 67 grams more on average.

Lessons Learnt

- The monitoring system increased the attendance among nurses, lab technicians, and pharmacists
- The system did not have much effect on doctors

Conclusion

In this case, an attendance monitoring system led to health improvements, but its imperfect enforcement illustrates the limits of technological monitoring solutions when they are not combined with changes in the broader rules governing health workers due which the government has terminated the scaling up of the program.

Further Readings

https://openknowledge.worldbank.org/bitstream/handle/10986/18408/882680PUB0978100Box385205B00PUBLIC0.pdf#page=215

https://www.povertyactionlab.org/evaluation/evaluating-karnataka-integrated-medical-information-and-disease-surveillance-system

Minimum standard norms for medical education need not to be relaxed further

There should be more frequent inspections from NMC to ensure the availability of quality clinical trainings and teaching materials.

Collaborative approach for medical education should be adopted

- Most of the developing nations including India are focusing on standalone centres for medical education which was suggested in the Flexner Report of 1910. However, with the onset of globalisation, India should shift towards Lancet Commission recommendations and adopt cluster or collaborative approach to add richness to learning and teaching standards of regional medical colleges (private or public) by also involving private sector.

- Association of district hospitals with government medical colleges will generate symbiotic relationship between the two ensuring efficient utilization of existing resources and

minimising the issue of inadequate funds in medical colleges/nursing colleges (EY Primary Analysis: KII, 2019).

- Improved collaboration between DHS and DME can further augment functioning and implementation of different national health programs (EY Primary Analysis: KII, 2019).

Training and capacity building

- Use of IT enabled platforms for imparting trainings will save time, energy, resources and ensure quality service delivery.

- Comprehensive HRH Policy should include technology enabled (EY Primary Analysis: KII, 2019):
    a) teaching methodology- online tools and pedagogy to conduct trainings
    b) monitoring of training outcomes
    c) refresher courses and on-site mentoring
    d) training dashboard

- Governing bodies of state health mission and district health mission should more frequently resolve local issues with cross-sectoral and policy interventions.

Need for regulating Allied and Healthcare Professions (Para-medical) Sector

- Allied and Healthcare Professions Bill, 2018 has been submitted and is pending for introduction in the Rajya Sabha. The bill proposes to have a Central and corresponding state Allied and Healthcare Councils. There is a need to expedite the process, for improving the quality of service delivery.

- The Scheme for Setting up of State Institutions of Para-Medical Sciences in States and Setting up of Colleges of Para-medical Education should be relaunched post the enactment of the bill as recommended by the Expenditure Finance Committee.

Rationalization of Nursing Courses

It is recommended to rationalize the different nursing courses as per the evolving needs of the Indian healthcare system (EY Primary Analysis: KII, 2019).

Chapter 7: CSS- National AYUSH Mission

7. National AYUSH Mission

The analysis of the CSS- National AYUSH Mission has been discussed in this Chapter entailing the following sections. Section 7.1 details the background of this CSS including its objectives, components, structure and the stakeholders. Section 7.2 discusses the performance of the CSS based on the Output-Outcome indicators and parameters of REESI Framework. Further, in Section 7.3 and 7.4 relevant issues and recommendations at CSS level have been highlighted.

7.1 Background of National AYUSH Mission

During the 12th five-year plan, the National AYUSH Mission was launched to promote AYUSH medical systems with implementation being done through States/UTs on a Mission mode. The Mission has four mandatory components, which prior to its launch, were being undertaken as separate schemes.

Objectives

Department of AYUSH (re-named as Ministry of AYUSH (MoA) in November 2014, Government of India launched National AYUSH Mission (NAM) as a Centrally Sponsored Scheme on September 14, 2014 to be implemented through various States/UTs.

The basic objective of NAM is to promote AYUSH medical systems through:

a) Cost effective AYUSH services
b) Strengthening of AYUSH educational systems
c) Facilitating the enforcement of quality control of Ayurveda, Siddha, Unani & Homoeopathy (ASU&H) drugs
d) Ensuring sustainable availability of ASU&H raw materials by promotion of cultivation and post-harvest processing of medicinal plants

Details of the Scheme

There are four mandatory components of the scheme which include:

1. **AYUSH services**

   A crucial component of NAM is to strengthen institutional capacity at the state level through various services such as co-location of AYUSH with PHCs, CHCs and DHs; supply of essential drugs to AYUSH hospitals and dispensaries; upgradation of AYUSH hospitals and dispensaries; setting up of 50 bedded integrated AYUSH hospitals; development of AYUSH grams; public health outreach activities; BCC/IEC and School Health Program.

2. **AYUSH educational institutions**

   While infrastructure creation is one of the key focus areas of NAM, creation of a strong AYUSH workforce is imperative for the promotion of AYUSH as a system of medicine. Upgradation and strengthening of AYUSH educational institutions is the focus under this component and is aimed at increasing the number of AYUSH doctors and other professionals who can be employed while extending healthcare services through AYUSH in the country. The expected outcome is the improvement in AYUSH education by increasing the number of upgraded AYUSH educational institutions.

3. **Quality Control of ASU&H Drugs**

   Promotion and adoption of quality standards of AYUSH drugs and ensuring the supply of AYUSH raw materials in a sustained manner is one of the important objectives of NAM. Quality improvement under NAM is targeted at improved availability of quality ASU&H drugs through increase in the number of quality Pharmacies and Drug Laboratories and enforcement mechanisms of ASU&H drugs by strengthening the regulatory framework.

4. **Medicinal Plants**

   The medicinal plants component includes activities like cultivation of medicinal plants and establishment of nursery, post-harvest management units, marketing yards for such crops etc. This component is implemented through Mission Directors/CEOs identified in States/UTs located in State Horticulture/ Agriculture departments and State Medicinal Plants Boards. For implementation of this component - forest departments, AYUSH departments and Agriculture / Horticulture departments in the States are involved.

The flexible components under the scheme include AYUSH wellness centres including yoga and naturopathy, tele-medicine, sports medicine, innovation in AYUSH including PPP, reimbursement of testing charges, IEC activities, research and development in areas related to medicinal plants, voluntary certification scheme, market promotion, market intelligence and buy back interventions and crop insurance for medicinal plants. (Department of AYUSH, MoHFW)

As per the scheme guidelines, 20% of the funds allocated to the States for NAM are earmarked for flexible funds. However more than 5% of these funds cannot be spent on any one of the above-mentioned components

Structure and Stakeholders:

Figure 7-1: Structure and Stakeholders of National AYUSH Mission

Source: Ministry of AYUSH
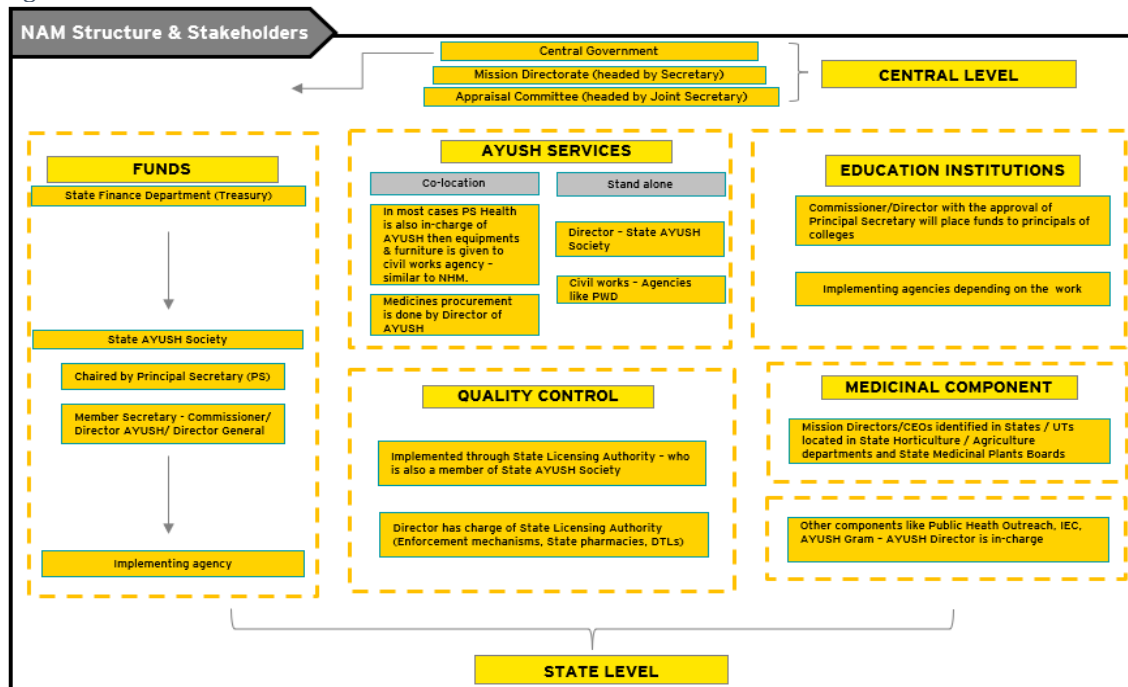
Chapter 7: National AYUSH Mission

7.2   Performance of National AYUSH Mission

7.2.1   Financial Performance of National AYUSH Mission

Over a 5-year period from 2015-16 to 2019-20, the Government has allocated approximately INR 2300 Crore to different States. The utilization rate over the period has been approximately 50%.

Figure 7-2 : NAM- Budget Allocations and Expenditure
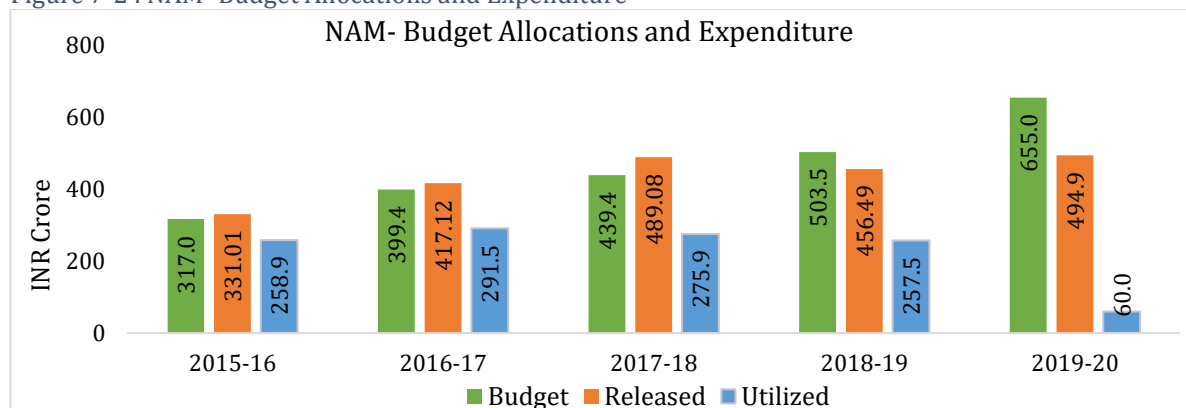
Source: Ministry of AYUSH, 2020

Figure 7-2 shows that the amount of funds released are indicative of remaining funds to be released from previous years as well as funds for the particular financial year. Over a 5-year period from 2015-16 to 2019-20, the Government has allocated approximately INR 2300 Crore to different States. The utilization rate (as a % of budget allocated) over the period has been approximately 50%. The low utilization in 2019-20 has been primarily due to release of funds in the second half of the financial year. The delay in release has been primarily due to delay in receipt of State Annual Action Plans from various states. The amount allocated has been consistently increasing over the years while the utilization rate has been decreasing without considering time scale factor.

Figure 7-3 : Funds released and utilized in 2018-19 (in INR Lakh)
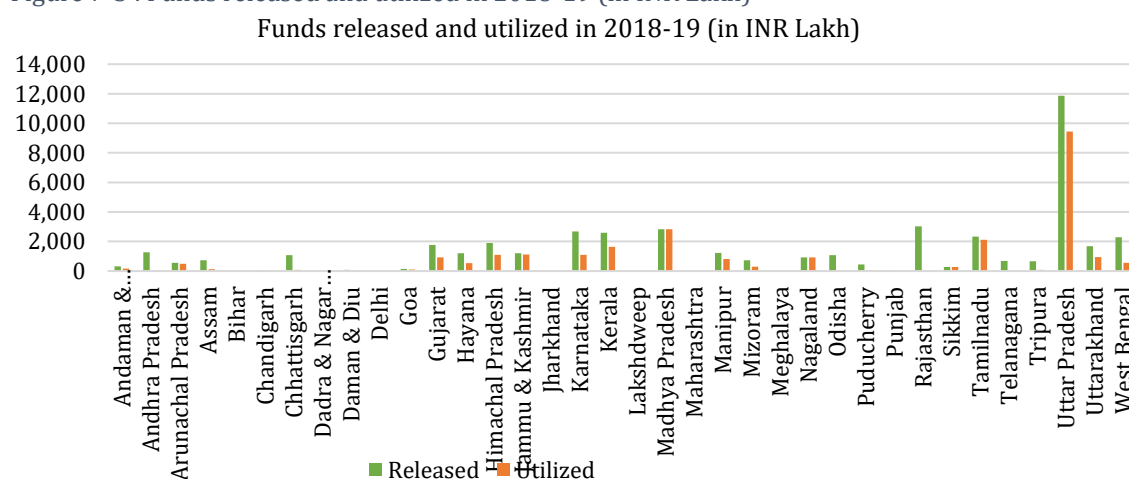
Source: Ministry of AYUSH, 2020

It was observed that in 2018-19:

- Madhya Pradesh, Nagaland and Sikkim utilized 100% of its funds
- Arunachal Pradesh, Jammu & Kashmir and Tamil Nadu utilized 75-100% of the funds. Andaman & Nicobar, Goa, Gujarat, Himachal Pradesh, Kerala, Manipur, Uttar Pradesh and Uttarakhand utilized 50-75% of the funds

- Assam, Chandigarh, Chhattisgarh, Damn & Diu, Puducherry, Tripura and Andhra Pradesh have utilized less than 15% of the funds
- Data is not available regarding utilization for Bihar, Dadra & Nagar Haveli, Delhi, Jharkhand, Maharashtra and Meghalaya.

It has been observed that high utilization of funds has been mostly propelled by (Mid-Term Evaluation of National AYUSH Mission (NAM), 2017); (EY Primary Analysis: Facility Survey, 2019):

1) Quicker availability of land for construction of stand-alone AYUSH units.
2) Several awareness programs undertaken under IEC/Outreach activities by States like Kerala, Uttar Pradesh, Sikkim and Uttarakhand
3) Availability of AYUSH workforce and filling in of vacancies
4) Well-functioning SPMUs
5) An independent AYUSH Secretary, as in the States of Kerala and Uttar Pradesh

The reasons for low utilization of funds have been:

1) There is lack of well-coordinated mechanism for timely submission of State Annual Action Plan by the States/UTs resulting in delay in release of funds at all levels
2) Excessive delay in procurement processes affecting the availability of drugs
3) Lack of qualified AYUSH staff
4) Lack of infrastructure support such as office equipment, computers etc.
5) Lack of coordination and communication between SMPBs and State AYUSH Societies except for Telangana and Andhra Pradesh

Figure 7-4 : % of AYUSH budget compared to budget of State Health Department
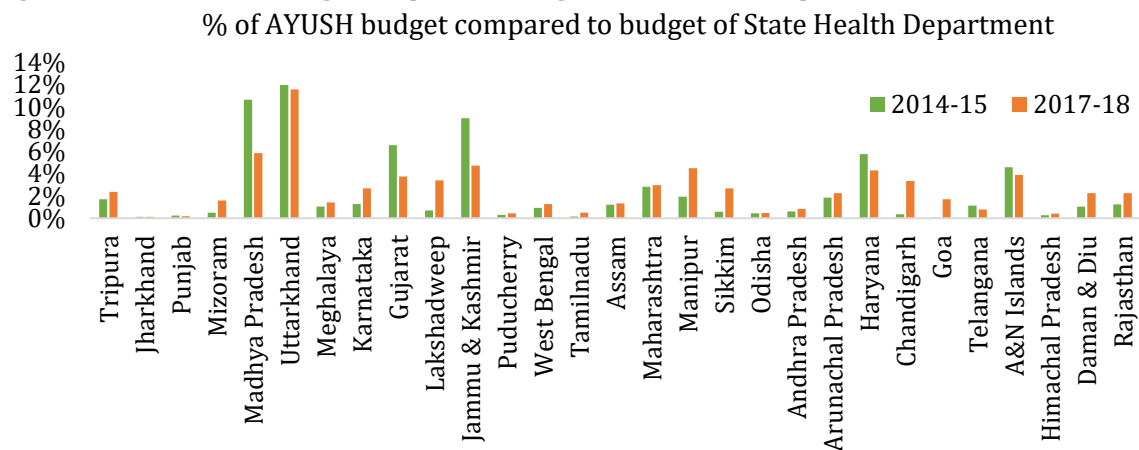
Source: Ministry of AYUSH

The fund allocation by the States/UTs for AYUSH system in comparison to the State health budget is critical for the success of AYUSH.

The findings are as below:

- Increase in % allocations: Tripura, Mizoram, Meghalaya, Karnataka, Lakshadweep, Puducherry, West Bengal, Maharashtra, Manipur, Sikkim, Odisha, Andhra Pradesh, Arunachal Pradesh, Chandigarh, Goa, Himachal Pradesh, Daman & Diu, Rajasthan
- Decrease in % allocations: Punjab, Madhya Pradesh, Uttarakhand, Gujarat, Jammu & Kashmir, Haryana, Telangana, A&N Islands
- No change in % allocations: Jharkhand

Chapter 7: National AYUSH Mission

In 2014-15, Uttarakhand (11.9%) followed by Madhya Pradesh (10.6%) had the highest % allocations. By 2017-18 there was a substantial % reduction in allocation in Madhya Pradesh. The % allocation in Uttarakhand also reduced slightly to 11.5% from 11.9% as shown in Figure7-4.

Percentage of AYUSH budget compared to budget of State Health Department indicates the state's commitment towards AYUSH systems development. It is evident that a majority of the States have been increasing the % of AYUSH budget compared to the budget of the State Health Department. This demonstrates the positive outlook of the States towards AYUSH.

SAAP and Fund flow

Figure 7-5 :SAAP process and fund flow
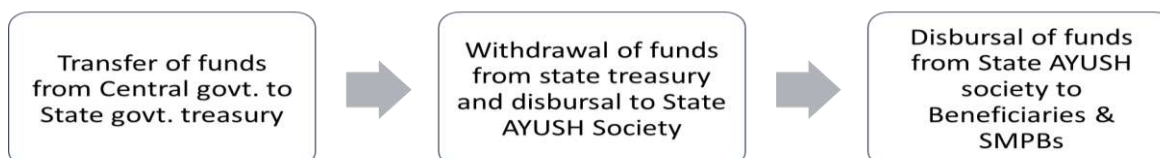
The funds from National AYUSH Mission are being transferred through the State treasury with effect from FY 2014-15 to State governments which, in turn, transfer the funds to the State AYUSH Societies along with the State share. Till 2013-14, the funds (also called grant-in aid) were transferred directly from Central Government to the State Health and Family Welfare Society (Ministry of Health and Family Welfare, 2014).

According to the Report on Mid-Term Evaluation of National AYUSH Mission (NAM), delays experienced in each stage of the fund transfer is one of the main reasons that affect the performance of the Mission. The funding cycle is stretched and that makes it very difficult to meet the physical and financial targets set by the State AYUSH Societies.

Average speed of funds flow for 24 States based on State Annual Action Plans (SAAPs), State Medicinal Plants Board (SMPB) and utilisation evidence (FY 2014-15 to FY 2016-17) is provided below. (Mid-Term Evaluation of National AYUSH Mission (NAM), 2017).

Table 7-1: Average time taken for release of funds (in days)

Average time taken for release of funds (in days)	
Average duration from centre to state governments after receipt of SAAP	158
Average duration from state governments to SAS	187
Average duration from SAS to beneficiaries if disbursed	106
Average duration from SAS to SMPB or equivalent if disbursed	125
Minimum duration from Centre to beneficiaries who have received funds	158
Maximum duration from Centre to beneficiaries who have received funds	490

Source: Mid-Term Evaluation of National AYUSH Mission

Average duration of release of instalment after receipt of State Annual Action Plans (SAAPs) has been 158 days on average throughout India as mentioned in Table 7-2. Time taken for the withdrawal of funds from state treasuries by the SASs is 187 days (over 6 months). The SAS take 106 days on an average to disburse funds to the final beneficiaries and to SMPB in 125 days. It was found that the minimum time taken for central funds to reach the beneficiaries has been 158 days, while the maximum time taken has been 490 days (more than 16 months). This shows a major bottleneck in the fund flow mechanism under National AYUSH Mission, especially in transfer of funds from State treasuries to State AYUSH Societies due to procedural delays at the state level, and steps need to be taken to reduce these delays

7.2.2 Performance on Output-outcome Indicators and REESI+E Framework

In 2019-20, 5 out of the 8 output indicators and 3 out of the 5 outcome indicators have been met. In 2018-19, 5 out of the 8 output indicators and 2 out of the 5 outcome indicators have been met.

From 2014-15 to 2019-20, support has been provided under NAM for co-location of 28,166 facilities (including PHCs, CHCs, DHs), upgradation of 6449AYUSH dispensaries and 2484 AYUSH hospitals and 91 integrated AYUSH hospitals (50 bedded).

In 2018-19, under the National AYUSH Mission:

- **3** drug testing labs which test 500 or above samples were set up
- **3000** drugs samples were tested
- Funds were released for **20** - integrated AYUSH hospitals (50 bedded)
- Funds were released for **2298** exclusive/standalone Government / Government aided AYUSH Hospitals and AYUSH dispensaries
- Funds were released for upgradation/new set-up of **8** educational institutes
- Funds were released for **104** AYUSH units co-located in health facilities
- **834** AYUSH units were co-located out of total existing PHCs, CHCs and DHs
- **6** integrated AYUSH hospitals (50 bedded) were operationalized
- **2183** additional facilities provided drugs for defined common ailments
- **2881** additional drug samples tested that met quality standards

The Output-Outcome analysis for the year 2019-20 under National AYUSH Mission provides an overview of the performance of the Mission in 2019-20. Based on the baseline data the targets were set for the Mission.

Table 7-2: Targets and Achievements in 2019-20 for Output Indicators

Indicators	Target (2019-20)	Baseline data (2018-19)	Status (2019-20)
Total number of States/UTs having mandatory drug testing labs	32	27	**28**
Total number of drug testing labs testing >500 samples	20	13	**17**
Total number of drug samples tested	10,000	8,000	**13,371**
Total number of additional up to 50 bedded integrated AYUSH hospitals for which funds released	85	85	**92**
Total number of exclusive/standalone Government / Government aided AYUSH Hospitals and AYUSH dispensaries for which funds released for upgradation of (i) AYUSH Hospital; (ii) AYUSH Dispensaries	7,500	7,261	**7,329**
Additional AYUSH educational institutes (UG/PG/Pharmacy/Para medical courses) for which funds released for: (i) up gradation; (ii) new set-up	110	108	**113**
Additional AYUSH units co-located in health facilities (PHCs, CHCs, & DHs) for which funds released	725	707	**736**
Total number of States having functional State/PSU pharmacies	15	15	**15**

Source: Ministry of AYUSH

Chapter 7: National AYUSH Mission

Table 7-3: Targets and Achievements in 2019-20 for Outcome Indicators

Indicators	Target (2019-20)	Baseline data (2018-19)	Status (2019-20)
Number of Government/Government Aided AYUSH education institutes meeting the minimum standards	136	129	**152**
Total number of AYUSH units co-located out of total existing PHCs, CHCs, and DHs	14,000	13205	**13,205**
Number of additional up to 50 bedded integrated AYUSH hospitals operationalized	10	6	**6**
Number of facilities providing drugs for defined common ailments	17,000	16,426	**17,740**
Total number of drug samples tested that meet the quality standards	10,000	7,881	**13,054**

Source: Ministry of AYUSH

■ Targets met/exceeded
■ Targets not met

In 2019-20, 5 out of the 8 output indicators and 3 out of the 5 outcome indicators have been met.

7.2.3   Other Performance parameters

NAM has been successful in terms of creation of infrastructure in accordance with its targets. While physical infrastructure is a crucial component, delivery related initiatives require key focus. Primary surveys have shown low levels of awareness about AYUSH services. Focus on AYUSH has been low in most of the States.

Figure 7-6 :National AYUSH Mission
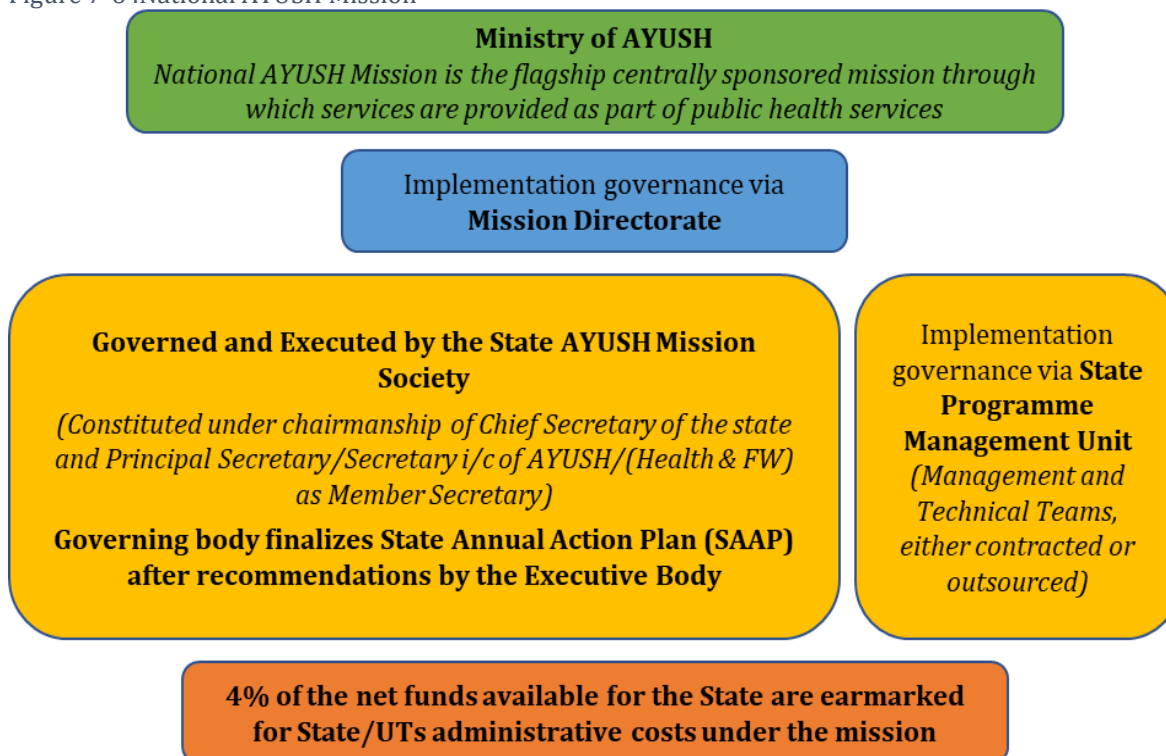
Source: (Mid-Term Evaluation of National AYUSH Mission (NAM), 2017)

A. Governance and institutional mechanisms

1) The implementation of the mission is governed at the central level by the Mission Directorate.

2) At the state level as depicted in Figure 7 -1, the funds are received by the State Finance Department (Treasury) and the governance and execution is carried out by the State AYUSH Societies which is chaired by a Principal Secretary and has Commissioner/Director AYUSH/Director General as the Member Secretary. The implementation is monitored by the State Program Management Unit (SPMU).

3) SPMUs of 24 States were studied as per the mid-term evaluation report of NAM. Out of these, Kerala, Assam, Uttar Pradesh and Rajasthan had the highest number of staff (6 in each state). 12 States had a staff strength of 1-3 members and the other 6 States had 4-5 members (Mid-Term Evaluation of National AYUSH Mission (NAM), 2017).

4) Out of the 24 States, only 17 SPMUs had a State Program Manager.

B. Infrastructure

The focus of NAM under the infrastructure component is to provide cost effective AYUSH services through:

a) Mainstreaming of AYUSH through co-location of AYUSH facilities at Primary Health Centers (PHCs), Community Health Centers (CHCs) and District Hospitals (DHs)

b) Upgradation of exclusive/stand-alone Government AYUSH hospitals

c) Upgradation of Government/Panchayat/Government aided AYUSH Dispensaries

d) Setting up of up to 50-bedded integrated AYUSH Hospitals

e) Supply of essential drugs to AYUSH Hospitals and Dispensaries

In 2018-19, the status of infrastructure available was (EY Primary Analysis: KII, 2019):

- 85 additional (up to) 50 bedded integrated AYUSH hospitals were financially supported for set up
- 6734 exclusive/standalone government/ government aided AYUSH hospitals and dispensaries were upgraded
- 707 additional AYUSH units were co-located in health facilities
- 13,205 AYUSH units were co-located out of total existing PHCs, CHCs and DHs
- 6 additional (up to) 50 bedded integrated AYUSH hospitals were operationalized

a) Mainstreaming of AYUSH through co-location of AYUSH facilities:

Mainstreaming of AYUSH was introduced via NRHM in 2005 to revitalize local health traditions and mainstream AYUSH into the public health system by increasing and improving the availability of human resources in rural areas by convergence with AYUSH. (National Rural Health Mission: Framework for Implementation, 2005-2012) The initiatives included:

- Setting up of AYUSH units in CHCs/PHCs
- Strengthening through posting/appointment on contract of AYUSH doctors, over and above the Medical Officers posted
- Providing a choice to the States about integration of AYUSH human resources either through PHC or by new contractual appointment
- Focusing on convergence with the Department of Women and Child Development and AYUSH

Figure 7-7 : Utilization of co-located units v/s standalone units

Utilization of co-located units v/s standalone units
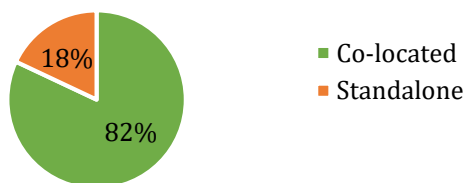
Source: EY Household Survey, 2019

National AYUSH Mission is contributing to mainstreaming of AYUSH through establishment of OPD clinics in PHCs, AYUSH IPDs in CHCs and AYUSH wings in DHs. The administrative and HR component of co-located units is still being handled by NHM while the infrastructure component is being funded under NAM.

In the co-located facilities, various issues were identified and reported. (EY Primary Analysis: Facility Survey, 2019) (EY Primary Analysis: KIIs, 2019) These include:

- In the co-located facilities, infrastructure including furniture, fixtures, equipment, etc is being funded under NAM while the HR component is being funded under the mainstreaming of AYUSH component of NHM. There is lack of coordination between NHM and NAM in implementing the mainstreaming of AYUSH component.
- During stakeholder discussions, out of 26 States and 3 UTs, all the States except Sikkim have agreed that there is lack of involvement of the AYUSH authorities in hiring and functioning of the resources for the co-located units (EY Primary Analysis: KIIs, 2019)
- Sub-optimal utilization of AYUSH for routine tasks other than the consultation of patients and differential treatment towards AYUSH workforce
- Lack of significant progress made under the mainstreaming component since its inception in 2005. As per NSSO 75th round merely 4.4 percentage of ailments treated by AYUSH in India.
- It is imperative to increase awareness towards AYUSH system of medicines. Lack of awareness is a concern. (EY Primary Analysis: Household Surveys, 2019) (EY Primary Analysis: KIIs, 2019)
- Lack of community outreach activities undertaken under the mainstreaming component.
- Orders for drugs in the co-located units are placed with Director of AYUSH through NHM. This creates an additional administrative layer further adding to the delay in the supply of drugs.

Key Findings:

In the co-located facilities, various issues were identified and reported. (EY Primary Analysis: Facility Survey, 2019) (EY Primary Analysis: KIIs, 2019) These include:

- Lack of coordination between NHM and NAM This is leading to lack of ownership and due focus towards the same.
- Lack of involvement of the AYUSH authorities in hiring and functioning of the resources (EY Primary Analysis: KIIs, 2019)
- Sub-optimal utilization of AYUSH work
- Lack of significant progress made under the mainstreaming component

b) Upgradation of exclusive/stand-alone Government AYUSH hospitals:

Under NAM, support is provided for upgradation of exclusive/stand-alone Government AYUSH hospitals. For upgradation, one-time grant is being provided for undertaking construction,

renovation of existing premises, furniture, fixtures, equipment etc. and the recurring grant for HR, procurement of drugs, diet and other consumables.

Key Findings:

- It was observed that there is a shortage of adequate human resources as the States are not taking initiatives to fill up the vacancies in AYUSH hospitals. This has been observed to affect the functional status and performance of hospitals. States are utilizing funds of NAM to fill in such gaps. In other cases, NAM funding has also been efficiently utilized for renovation/upgradation of hospitals. (EY Primary Analysis: Facility Survey, 2019)

Below are some of the findings from facility visits:

- In Rajkiye Ayurvedic Chikitsalaya, Lucknow, due to lack of appropriate human resources and infrastructure, the panchakarma facility has not been made functional.

- In Government Ayurveda College Hospital for Women and Children, Kerala, the deliveries had reduced to 2-5 deliveries per year prior to 2014. In 2014, the state government allocated INR 1.13 crores to revive the infrastructural facilities. However, there was severe shortage of human resources. In 2018, under NAM, 25 personnel were employed for the smooth functioning of the labour room. Due to the funding received from NAM, there has been a dramatic rise in the cases being handled at the hospital.

- At the Government Ayurveda Hospital in Neyyattinkara, Kerala, NAM funds have been utilized for human resource component (10 staff have been hired for all NAM funded initiatives) and for construction of the building for outpatients (due to be completed shortly.

c) Upgradation of Government/Panchayat/Government aided AYUSH Dispensaries:

Under NAM, support is being provided for upgradation of Government / Panchayat / Government aided AYUSH Dispensaries. For upgradation, one-time grant is provided for undertaking construction, renovation of existing premises, furniture, fixtures, equipment, etc. and a recurring grant is provided as lump sum contingency fund.

Key Findings:

- Lack of awareness leading to insufficient demand for AYUSH services (EY Primary Analysis: Facility Survey, 2019)

- Lack of equipment and drugs. In the AYUSH dispensary in Rajgarh, Madhya Pradesh, equipment, manpower and infrastructure were adequate. However, there is a large scope for demand generation as the residents of the village are largely unaware of AYUSH system of medicine and its benefits. In the AYUSH dispensary in Bagwara, Rajasthan, while the infrastructure was adequate there was a lack of equipment and drugs (EY Primary Analysis: Facility Survey, 2019).

- Shortage of support staff in AYUSH dispensaries leading to AYUSH doctors and Pharmacists performing routine activities. In the Government Ayurveda Dispensary in Kattakkada, Kerala, through NAM funds, a storage area and visiting area were constructed. While the supply and availability of drugs were regular, lack of adequate support staff and accessibility of the dispensary were cited as main concerns (EY Primary Analysis: Facility Survey, 2019).

- Lack of availability of AYUSH staff has been cited as a consistent issue across facilities at various levels during the facility surveys. For instance, it was reported that only 17 doctors

were available for 47 dispensaries in Bhind district in Madhya Pradesh (EY Primary Analysis: Facility Survey, 2019).

d) Supply of Essential Drugs to AYUSH Hospitals and Dispensaries:

Support is being provided under NAM for procurement of essential drugs to AYUSH hospitals and dispensaries.

29 diseases were identified for which AYUSH drugs are in demand (list of diseases has been provided in Appendix 6). Skin diseases, respiratory disorders, diabetes, gastrointestinal disorders, hypertension and arthritis were the diseases for which AYUSH drugs were mostly in demand. Some States reported shortage of certain medicines, particularly for arthritis and respiratory disorders (Mid-Term Evaluation of National AYUSH Mission (NAM), 2017).

To ensure the quality of drugs is maintained, the scheme guidelines indicate that 50% of the grant-in-aid provided would be used to procure from Central and State PSUs and the rest 50% is left to the discretion of the States as per Essential Drugs List (EDL) of AYUSH. (Department of AYUSH)

Key Findings:

- While almost all the States have indicated that the preference is towards procuring AYUSH medicines from Centre/State PSUs, the limited production capacity of these PSUs is hindering the ability to meet the requirements on a timely basis resulting in delays in supply and shortage of medicines. Pending litigations are also hampering the procurement processes in some States, where other private organizations manufacturing these medicines are keen to be included in NAM. (EY Primary Analysis: KIIs, 2019)

- Shortage of medicines due to lack of timely supply has been cited during facility visits and interactions with stakeholders at various levels. 28 States/UTs indicated the need for a state specific procurement policy (EY Primary Analysis: KIIs, 2019).

C. Education

The education component under NAM includes:

a) Infrastructural development of AYUSH Under-Graduate Institutions
b) Infrastructural development of AYUSH Post-Graduate Institutions/add on PG Pharmacy/Para-Medical Courses
c) Setting up of new AYUSH educational Institutions in the States where they are not available in the Government sector

In 2017-18, 46 existing educational institutions and 55 new Ayurveda colleges were approved (Ministry of Health and Family Welfare, 2018). AYUSH infrastructure in the country includes 7,71,468 registered practitioners, 550 teaching institutes, 170 postgraduate institutes, and 8,667 drug manufacturing units.

The target for 2019-20 for upgradation/setting up of additional educational institutes (UG/PG/ Pharmacy/Para medical courses) is 110. 8 additional educational institutes (UG/PG/Pharmacy/ Para medical courses) were taken up for upgradation in 2018-19. The overall number of upgraded educational institutions thus stood at 108 for 2018-19. The target for 2019-20 for number of Government/Government aided AYUSH education institutes meeting the minimum standards is 136. In 2018-19, 129 institutes met the standards. (EY Primary Analysis: KII, 2019)

Key Findings:

- Positive steps in AYUSH education have been taken in terms of NEET being applicable for AYUSH courses. There exist many challenges for this component in terms of lack of centrally regulated courses for allied healthcare professionals and limited training activities for the AYUSH workforce. (EY Primary Analysis: KII, 2019)

- Training and skilling component is not available under NAM. However, Ministry of AYUSH is implementing Central Sector Scheme for supporting Continuing Medical Education (CME) for providing need-based training to AYUSH teachers, doctors, allied healthcare personnel for upgrading their professional competence and skills. The KII findings have suggested the need for enhancing the robustness of CME and Reorientation training programs.

- Need for improvement in quality of education in AYUSH institutions and skill upgradation for in-service personnel has been cited in KIIs. This reflects a need for training and monitoring of quality of education/training being provided.

D. Quality Control

The focus of NAM under the quality control component is:

a) To strengthen State Government ASU&H Pharmacies and Drug Testing Laboratories
b) To strengthen ASU&H regulatory framework
c) To improve the Quality of ASU&H Drugs to enable their export in International Markets

To meet the objectives of this component, grant in aid is being provided for the following activities:

- Setting up/ Upgradation of State/Govt. ASU&H Pharmacies/ State Govt. ASU&H Cooperatives, State Govt. ASU&H PSUs
- Setting up/ Upgradation of State Drug Testing Laboratories of Ayurveda, Siddha, Unani and Homoeopathy (ASU&H) Drugs
- Strengthening of ASU&H Drug Control Framework
- Documentation, publication and dissemination of quality control material for States

While a one-time grant in aid and recurring grant is provided to new and existing government pharmacies by the centre, the responsibility lies with the States to ensure and upgrade the requirements of working capital, raw material, man power etc. Prior to NAM, recurring grant support was provided only to new government pharmacies and not the existing ones. The operational guidelines for this component require the States to form a monitoring committee to ensure quality of drugs.

Before 2014-15, 46 state pharmacies and 27 drug testing laboratories of Ayurvedic, Siddha, Unani & Homoeopathy system were provided grant-in-aid via a separate Centrally Sponsored Scheme. In 2014-15, this component was merged with NAM. Through NAM, 9 pharmacies and 10 drug testing labs were set up (Mid-Term Evaluation of National AYUSH Mission (NAM), 2017).

In the first two years of implementation of NAM, funds were not released by the Ministry of AYUSH for the Quality Control component. (Mid-Term Evaluation of National AYUSH Mission (NAM), 2017). From 2014-2017, the Drug Testing Laboratories (DTLs) have received ~50% of NAM funds released for Drug Control Framework whereas Pharmacies and enforcement mechanism received only ~25% of the funds (Mid-Term Evaluation of National AYUSH Mission (NAM), 2017).

Chapter 7: National AYUSH Mission

Key Findings for Pharmacies:

- As per the Ministry of AYUSH, in 2019, 52 AYUSH government pharmacies existed, out of which 9 have been non-functional. The reasons for the non-functional status despite the funds being sanctioned are: (EY Primary Analysis: KIIs, 2019) (EY Primary Analysis: Facility Survey, 2019)

- Lack of independent administrative structure at the state level leading to delay in decision making

- Lack of recruitment by States over and above the manpower funded by NAM, even when the requirement exists

Following are the other findings (Mid-Term Evaluation of National AYUSH Mission (NAM), 2017):

- Shortage of manpower in pharmacies
- Lack of funds from the State Government
- Need for increase in the recurring expenses on manpower of pharmacies
- Improvement in capacity and quality of production of drugs as a result of implementation of NAM

There is a need for States to allocate funds more proactively for provision of adequate manpower (over and above the funds being provided by NAM) and also to ensure quicker decision making. (Mid-Term Evaluation of National AYUSH Mission (NAM), 2017) (EY Primary Analysis: KIIs, 2019)

Key Findings for Drug Testing Laboratories:

- As per the Ministry of AYUSH, in 2019, there existed 33 DTLs, out of which 8 were reported to be non-functional.

- Some of the findings include (EY Primary Analysis: Facility Survey, 2019):

- In Karnataka, out of the 13 sanctioned posts, 8 are vacant. 4 drug analysts were appointed on a contractual basis with the support of NAM. The has increased the ability of the DTL to test more number of samples.

- In Uttar Pradesh, funding for HR and procurement of chemicals has not been received. However, while funding for civil construction work has been received, there has been a delay in initiating the construction activities by the state government. This is due to lack of standardized protocols for the construction activities.

- In Kerala, under NAM, funding has been provided for human resources and procurement of equipment. There is a need for more analysts to be hired at the DTL. It was indicated that there is a need for reference standards for natural compounds for qualitative and quantitative determination of Ayurvedic products. In addition to this, it was indicated that a research wing in the Ayurvedic department would prove beneficial.

- Shortage of human resources was cited as an issue in all the 3 DTLs as there were many samples pending for testing.

Lack of manpower in DTLs is impacting the capacity and performance of DTLs and there is a need for increase in assistance to DTLs from States. There is a need for further enhancement of

capabilities of the State level institutions. The fund utilization remains close to 25% and can be improved. (Mid-Term Evaluation of National AYUSH Mission (NAM), 2017)

E. Medicinal Plant Component

The NAM scheme aims to support cultivation of more species to fulfil the demands of the AYUSH industry and for exports of value-added items. The cultivation is proposed to be done in conjunction with the processing facilities and markets available for medicinal plants. This is proposed to be done in clusters identified by State Governments through individuals, self-help groups and cooperative societies of medicinal plants growers. Preference to cultivation in clusters through SHGs, growers, cooperatives and producer companies over individual centric cultivation will ensure targeting of subsidy to the small and marginal farmers.

Therefore, small and marginal farmers are organised into self-help groups and cooperative societies of medicinal plants growers or as producer companies to enable them to take up medicinal plants' cultivation, which currently they are unable to do. Financial assistance on project basis will also be provided to state implementation agency for mobilizing the Growers' cooperatives/ Federations as well as for preparation of the cluster. The subsidy is being provided for 140 species @ ranging from 30%, 50% or 75% of cost norms. As on December 1, 2019, the Ministry has supported 48,045-hectare area under cultivation of medicinal Plants under NAM scheme (EY Primary Analysis: KII, 2019).

Table 7-4: Details of year-wise cultivation (in hectares) targeted and achieved in Medicinal Plants Component under National AYUSH Mission (NAM) Scheme (2015-16 to 2017-18)

S.N.	Name of the States/ UTs Activities	2015-16 Target (in ha)	Achievement (in ha)	2016-17 Target (in ha)	Achievement (in ha)	2017-18 Target (in ha)	Achievement (in ha)
1.	Karnataka	317	266.04 (83.9%)	706.3	795.78 (112%)	769	530.76 (68.9%)
2.	Maharashtra	326.63	292.3 (89.5%)			443.8	
3.	Odisha			488.5	386.25 (79%)		
4.	Madhya Pradesh	1681	1844 (109%)	2518.0	2480 (98%)	2030	128.05 (6.3%)
5.	Uttar Pradesh (horticulture)	3188	439 (13%)	1898.0	1386.79 (73%)	1345	755.54 (56.1%)
6.	Telangana	345	263.31 (76.2%)	294.1	299.19 (101%)	457	156.885 (34.1%)
7.	Rajasthan	330	330 (100%)	1162.5	1162.50 (100%)	1341	1147 (85.5%)
8.	West Bengal	107	107 (100%)	230.0	180 (78.2%)	417	397 (95.2%)
9.	Himachal Pradesh	39	29 (74.3%)	120.0	62.59 (51.6%)	7	2 (28.5%)

Source: Ministry of AYUSH

Between 2015-2018, out of the 9 States evaluated, in terms of cultivation (in hectares) of the medicinal plants:

- Karnataka, Odisha, Rajasthan, and West Bengal have satisfactorily met the targets set out.
- Maharashtra came close to meeting its targets in 2015-16.
- Madhya Pradesh and Telangana were close to the targets set in 2015-16 and 2016-17, however in 2017-18, cultivated medicinal plants fell largely short of the targets set out.

- Himachal Pradesh achieved 75% of its target in 2015-16, however the achievement % has drastically reduced in 2016-17 and 2017-18.
- Uttar Pradesh has not been able to achieve the targets set in terms of cultivation.

Table 7-5: Details of year-wise funds allocated and utilized in Medicinal Plants Component under National AYUSH Mission (NAM) Scheme (2015-16 to 2017-18)

S.N.	Name of the States/ UTs Activities	2015-16		2016-17		2017-18	
		Allocated (INR Lakh)	Utilized (INR Lakh)	Allocated (INR Lakh)	Utilized (INR Lakh)	Allocated (INR Lakh)	Utilized (INR Lakh)
1.	Karnataka	107.8	78.2 (72.5%)	203.3	138.2 (67.9%)	219.34	147.9 (67.4%)
2.	Maharashtra	205.8	192.9 (93.7%)			355	
3.	Odisha			117.5	68.1 (57.9%)		
4.	Madhya Pradesh	306.9	304.8 (99.3%)	496.3	444.4 (89.5%)	450.27	86.5 (19.2%)
5.	Uttar Pradesh (horticulture)	720.0	52.6 (7.3%)	528.1	388.0 (73.4%)	249.179	141.7 (56.6%)
6.	Telangana	111.3	111.3 (99.9%)	252.1	185.1 (73.4%)	118.294	36.9 (31.2%)
7.	Rajasthan	113.5	113.5 (100%)	226.0	200.9 (88.9%)	747.843	607.8 (81.2%)
8.	West Bengal	180.6	166.6 (92.2%)	184.9	171.5 (92.7%)	201.979	124.1 (61.69%)
9.	Himachal Pradesh	61.9	61.9 (100%)	170.1	97.0 (57.05%)	75.54	59.4 (78.6%)

Source: Ministry of AYUSH

Between 2015-2018, out of the 9 States evaluated thus far, in terms of utilization of the funds allocated for the medicinal plant component:

- Rajasthan has utilized around 85% of the funds allocated for this component.
- Karnataka has utilized 65% -75% of the funds allocated.
- Maharashtra came close to 100% utilization in 2015-16 and Odisha has utilized around 60% in 2016-17.
- Madhya Pradesh, Telangana and West Bengal were close to the targets set in 2015-16 and 2016-17, however in 2017-18 fell largely short of the targets set
- Himachal Pradesh met 100% of its target in 2015-16. In 2016-17 and 2017-18, the achievement % stood at 57% and 78% respectively.
- Uttar Pradesh has not been able to achieve the targets set in terms of cultivation.

The fund flow to the implementing agency of the States was carried out effectively till 2017-18. However, during 2018-19 and 2019-20, there have been delays in the fund flow and activities under the medicinal plant component have not been undertaken during 2018-19.

Bihar has not submitted the SAAP to the Ministry of AYUSH and in Assam money has not been released to the implementing agency by the State AYUSH Society.

It has been observed that clear monitorable parameters to measure the outcome of this component need to be developed. While the operational guidelines for the Medicinal plant component elaborate the monitoring mechanisms, there is a need for concurrent evaluations to be undertaken.

F. Use of Technology

Monitoring and evaluation is done via a dedicated MIS monitoring and evaluation cell established at Centre/ State level. The concurrent evaluation of the AYUSH Mission is carried out to know the implementation progress and bottlenecks and scope for improvement.

Lack of IT infrastructure has played a role in negatively effecting utilization of funds, speed of flow of funds and educational institutions component. (Mid-Term Evaluation of National AYUSH Mission (NAM), 2017)

At the local levels, lack of computerization is affecting the implementation of NAM. Strengthening the hardware, software and human resources with regards to the same would aid in better monitoring and reporting and increasing the flow of funds and higher utilization of funds (Mid-Term Evaluation of National AYUSH Mission (NAM), 2017) .

G. IEC/outreach activities/community-based interventions

Under the AYUSH services component, support is being provided under NAM for Public Health Outreach activity and Behaviour Change Communication (BCC)/Information Education and Communication (IEC).

Public Health Outreach activity:

This component under NAM intends to undertake initiatives, activities and programs to increase the knowledge and understanding and promote and increase awareness about adoption of AYUSH for monitoring and prevention of diseases. Grand in aid is provided to the State Government initiatives for national campaigns identified by the Ministry of AYUSH (via distribution of medicines, organizing health awareness camps etc.) and for rollout of proven AYUSH interventions for improvement of health status of the population.

Public health outreach activities also aim at increasing awareness about AYUSH's strength in addressing community health problems resulting from epidemics and vector-borne diseases, maternal and child health etc.

Objectives:

a. Reduce the disease burden of communicable or non-communicable diseases or both
b. Create public awareness about the importance of hygiene, dietary habits, prevention, promotion etc. through AYUSH systems of medicine
c. Establish a Community Based Surveillance System (CBSS) for early identification of the outbreaks
d. Increase the accessibility of AYUSH treatment for population residing in a particular geographical region

INR 5 Lakh per unit of 2 Blocks for each district is provided under this initiative (Mid-Term Evaluation of National AYUSH Mission (NAM), 2017).

It was observed in the mid-term evaluation of AYUSH that:

- Despite funds being allocated to Goa, Odisha, Uttar Pradesh and J&K, no initiative or activity was undertaken at the ground level. The main reason for this was inadequate capacity to implement. In the remaining States, some public health outreach activity had taken place under NAM.
- 6 States have undertaken medical camps and awareness camps. Himachal Pradesh has conducted the maximum number of camps followed by Assam. INR 86.95 Lakh worth grant

was utilized in 2014-15 by all the States. After that, there has been a decrease in the amount of utilization in the second and third year. IEC material and camps have increased the levels of interest in the public.

Through primary surveys conducted, it is evident that ASHA and other health workers play a major role in creating awareness about AYUSH services.

Behaviour Change Communication (BCC):

It is important to implement among the communities, a mass-media based communication strategy that promotes adoption of AYUSH strengths in early prevention of diseases through healthy diet and lifestyle. Financial assistance of INR 20 Lakh per annum for each State is provided for Behaviour Change Communication (BCC)/IEC activities (Mid-Term Evaluation of National AYUSH Mission (NAM), 2017).

It was observed in the mid-term evaluation of AYUSH that:
- The implementation of this component lacks standardization.
- Key performance indicators for this component need to be developed. It is currently open to interpretation of the officers in charge. Due to most of these officers lacking any professional experience/understanding of the implementation mechanisms and crucial components of AYUSH, along with lack of sufficient impact, it results in information being mis-represented/wrongly conveyed.

Best practices adopted by different States for Community based interventions

Certain States like Kerala have undertaken various community-based interventions in AYUSH. Two such initiatives are Snehadhara and Sadgamaya:

Case Study 29 - Snehadhara in Kerala

Introduction

Snehadhara is an initiative by the Government of Kerala. The initiative employs ayurvedic practices and techniques for palliative care to patients suffering from long-term illnesses who require home visits.

Implementation

Snehadhara started as a project of a block panchayat in Idukki in 2016. It was further decided to allocate funds for this initiative in three districts. Snehadhara was initiated in three districts of the state, namely Thrissur, Thiruvananthapuram and Kasargod. The palliative policy of Kerala recognizes and encourages the role of other systems of medicine such as AYUSH in palliative care.

A trained nurse and a multipurpose staff were appointed, and a rented taxi vehicle was provided. The activities are carried out with association and support from LSGIs. With the help of ASHA workers, Local Self Government Institutions (LSGIs), and social workers the beneficiaries of each Panchayat were identified. The medical team visits bedridden patients at their doorstep.

Results of the practice - output and outcomes:

As reported by National AYUSH Mission, Kerala the total number of people benefitted from this initiative as on February 2020 is 9,803.

Case Study 30 - Sadgamaya in Kerala

Introduction:

The focus of this initiative is on adolescent health care. It started in the year 2014 with a thrust on adolescent problems especially behavioural and learning problems. It focuses on behaviour management and screening of learning disabilities in the various NCD clinics in the 14 districts.

Implementation:

One medical officer with a Bachelor of Homeopathic Medicine and Surgery or BHMS degree is appointed in each district for SADGAMAYA. The project is implemented in 14 districts across Kerala. Human resources support is provided by the National AYUSH Mission.

As a part of Sadgamaya, series of awareness classes are carried out in Schools, Grama Sabhas, and Resident Association Meetings and among teachers. ASHAs are also now educated of the problems dealt in Sadgamaya. The potential target children are identified by them and parents of these children are persuaded to attend clinic with children. These children are screened at centre for specific problems and corrective measures initiated.

Results of the practice

As reported by National AYUSH Mission, Kerala a total of 27,783 patients were assisted by the projects for various problems like ADHD, learning disorders etc.

Conclusion:

The initiative has played a positive role in understanding, identifying and assisting adolescents with behavioural and learning problem.

Further Readings

Ratnakaran, B., Anil, S. S., Thomas, S., & Ampanattu, S. D. (2015). Depictions of mental health topics in Malayalam cinema. Kerala Journal of Psychiatry, 28(2), 204-11.

AYUSH Gram and School Health Program Component

Under the AYUSH services component, support is being provided under NAM for AYUSH Gram and School Health Program Component. As per the mid-term evaluation report of NAM:

- AYUSH Gram component of the scheme includes selecting one village per block for adoption of AYUSH as a way of life. It started to gain some momentum towards the end of 2016-17 FY. Normative guidelines had been provided under NAM. Maximum flexibility is provided to the States/UTs under this component for implementing activities. The population norms and different strategies for implementation of the program have already been spelled out in the guidelines. AYUSH Gram in Chhattisgarh is discussed in Case Study 21.
- AYUSH School Health Program component of the scheme intends to cater to the health requirements and needs of school going children both physically and mentally through AYUSH services including yoga and counselling. Out of the 10 States (Andhra Pradesh, Gujarat, Haryana, Kerala, Manipur, Mizoram, Sikkim, Telangana, Uttar Pradesh and West Bengal) visited during the mid-term evaluation report for NAM, it was reported that only 3 States – Sikkim, Manipur and Gujarat utilized the funds for this component. The reasons cited for non-utilisation were difficulty in recruiting suitable personnel and the scope of this component remaining unclear and requiring standardization.

Chapter 7: National AYUSH Mission

- As on December 2019, according to the Ministry of AYUSH, it has been observed that with respect to utilization of funds (for AYUSH Gram and School Health Program), all 10 States have utilized the grants-in aid and reported expenditure. More States should actively promote the AYUSH gram concept and undertake initiatives on a scale that is being undertaken in villages across Chhattisgarh.

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Case Study 31 - Chhattisgarh – AYUSH Gram in Tekari and Mana Villages

Introduction

AYUSH Gram is a concept wherein one village per block will be selected for the adoption of method and practice of AYUSH way of life and interventions of health care. In AYUSH village AYUSH based lifestyles are promoted through behavioural change communication, training of village health workers towards identification and use of local medicinal herbs and provision of AYUSH health services. The elected village representatives are sensitized towards the concept so that there is also active participation from the community. Financial assistance of Rs. 10.00 Lakhs per unit covering 10, 000 in population in 5 to 15 villages in a State is being provided. The objectives of the practice are:

- To spread awareness within community for practice of those dietary habits and lifestyles as described in AYUSH Systems of Medicine which help in preventing disease and promoting health.
- To advice people for preservation and cultivation of those herbs which are found in their surroundings by explaining them their medicinal values.
- To advice people about common ailments and its cure thorough use of herbs found in their localities.
- To raise campaign against communicable diseases like Malaria, T.B., Diarrhea etc. and measures for their prevention and treatment.

Implementation of the practice

- Herbs are grown within the Dispensary. Herbal drinks are distributed to villagers and school kids
- Women in SHG are involved in gathering and coordinating with the villagers and organising various street plays, dances and other awareness campaigns
- Yoga teacher is present in the school and takes classes on a weekly basis
- Every 15-18 days either health check-up camps/yoga camps/ street plays/ dances/awareness campaigns are conducted (termed as Kala Jatta)
- Health check-up camps are regularly organised with grant support of INR 4,000 (for 3months interval)
- AYUSH training to ASHAs, Anganwadi workers and school teachers is given every quarter

Lessons Learnt and Conclusion

- Ayurveda Gram Centre is the first approach point for any type of illness or preliminary treatment. They are not dependent on Sub-centres or PHCs.
- Villagers indicated increase in reliability on Ayurveda. Food habits have changed for better and awareness towards Medicinal herbs has increased
- Farmers are still not motivated to cultivate herbs as selling of these herbs remains to be a challenge. It is difficult to recover the invested money.

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Initiatives in Tekari Village

Initiatives in Mana Village

H. Patients attended to in Government AYUSH facilities

In 2017-18, the number of OPD patients who visited Government AYUSH health care facilities were 17.7 Crores and the number of IPD patients who visited Government AYUSH health care facilities were 19.5 Lakhs. (Ministry of AYUSH, 2018)

Below are the graphs of the States in the order of maximum number of patients (IPD and OPD) attended to in AYUSH Government Health Care Facilities. Kerala, Tamil Nadu, Gujarat, Maharashtra and Himachal Pradesh are the States which have witnessed high patient inflow to

Chapter 7: National AYUSH Mission

Government AYUSH facilities. Assam, Sikkim, Nagaland and Manipur have witnessed negligible patient inflow.

Figure 7-8:State/UT-wise Patients Visited Government AYUSH Health Care Facilities during 2017-18 – IPD
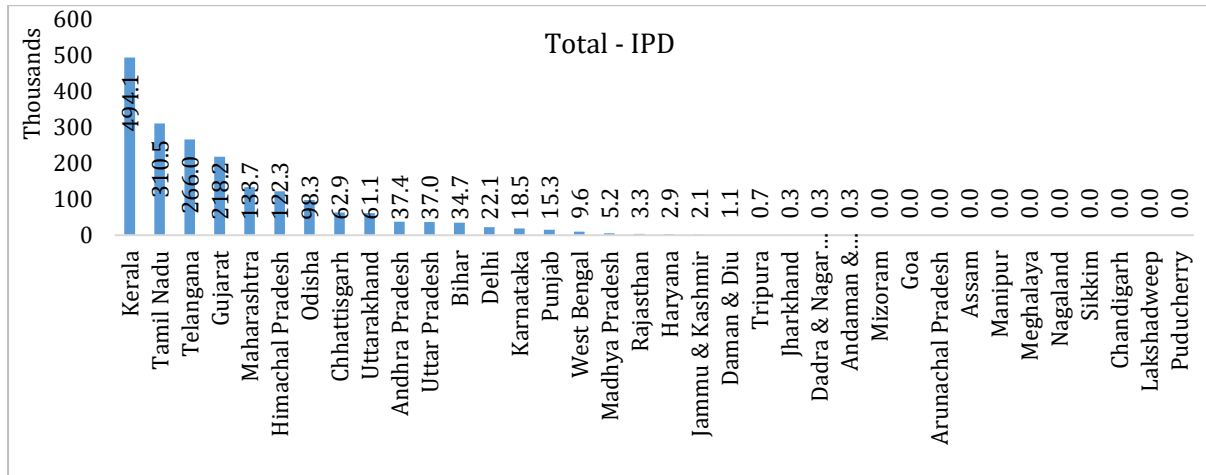
Source: Ministry of AYUSH, AYUSH in India 2018

Figure 7-9: State/UT-wise patients visited govt AYUSH Health Care Facilities during 2017-18–OPD
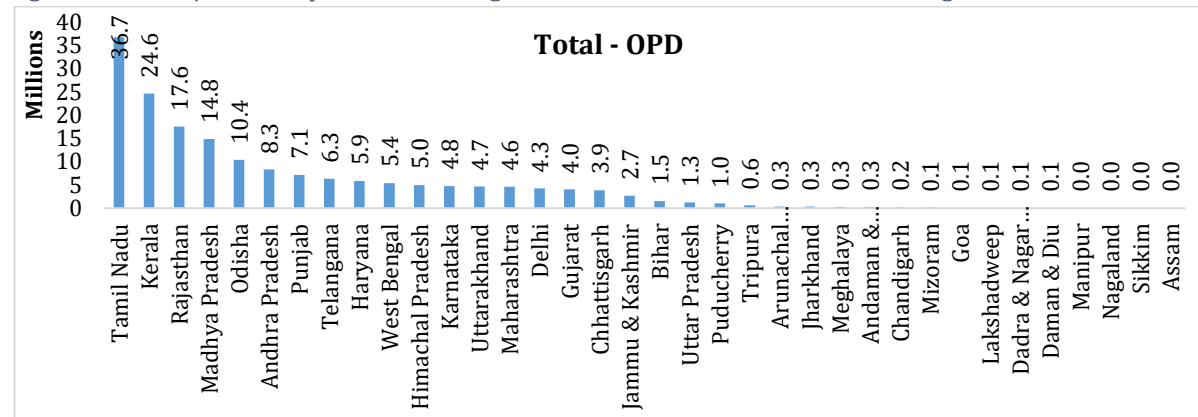
Source: Ministry of AYUSH, AYUSH in India 2018

Figure 7-10: Awareness levels of AYUSH services
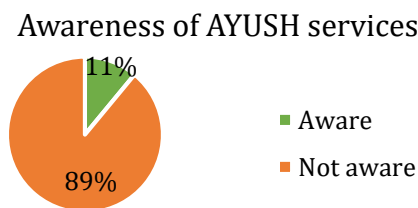
Source: Household Surveys

During household surveys, it was observed that only 11% (of the total 1610 respondents) stated they were aware about the AYUSH services that were being provided at government health centres. Along with low awareness levels, accessibility to AYUSH facilities, availability of AYUSH doctors and staff, availability of AYUSH drugs, local perceptions and acceptance for AYUSH as an alternative source of medicine are factors that are responsible for the disparate figures in the number of IPD and OPD patients who visited government health care facilities.

In the household surveys conducted, it was observed that lack of availability of doctors (along with lack of quality); medicines; and AYUSH staff were the reasons for respondents' lack of satisfaction with the quality of services provided.

Through print and media channels, awareness regarding AYUSH services is high in Assam and Delhi while low in case of Madhya Pradesh and Maharashtra. Awareness through ASHA/other

health workers is high in Madhya Pradesh and Bihar while low in case of Delhi and Himachal Pradesh.

Figure 7-11: Means of awareness of AYUSH services across different geographies
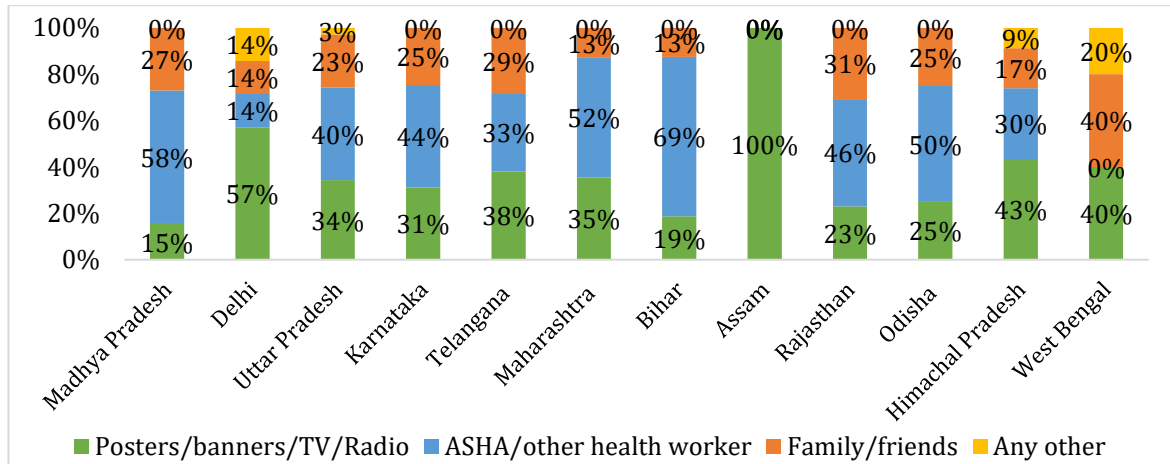
Source: EY Household Survey

I. Treatment seeking behaviour

The percentage of ailments treated by AYUSH in India accounts for merely 4.4% (NSSO 75th round, 2019). A larger percentage of ailments in females over males, primarily ailments in urban females, is treated by AYUSH in India. When it comes to males, it is largely ailments in rural males, which have been treated by AYUSH.

Table 7-6: % of ailments treated by allopathy and AYUSH from July 2017 to June 2018

| Sector | % of ailments treated by allopathy and AYUSH, all-India | | | | | | | | |
| | Allopathy | | | AYUSH | | | Other | | |
	Male	Female	All	Male	Female	All	Male	Female	All
Rural	95.7	95.1	95.4	4.2	4.7	4.5	0.1	0.2	0.1
Urban	96.2	94.7	95.4	3.6	5.1	4.3	0.2	0.3	0.2
All	95.9	94.9	95.4	4.1	4.8	4.4	0.1	0.3	0.2

Source: NSSO 75th, 2018

An analysis of the state-wise numbers from July 2017 to June 2018 indicates that when compared with the other States, in Arunachal Pradesh, Assam, Bihar, Karnataka, Mizoram, Sikkim and A&N islands, a larger % of ailments was treated by AYUSH (NSSO 75th Round, 2018)

It was observed that out of the 1610 respondents, only 15% households indicated a preference towards AYUSH as a system of treatment (EY Primary Analysis: Household Survey, 2019).

Regarding AYUSH treatment, Himachal Pradesh & Maharashtra had the highest preference at 33% and 24% respectively, while Assam & Telangana had the lowest preference at 0% and 2% respectively amongst the selected states (EY Primary Analysis: Household Survey, 2019).

Among the social groups, the preference for different treatment was similar to the overall trend (EY Primary Analysis: Household Survey, 2019).

The higher income group is more inclined towards AYUSH system of medicines (EY Primary Analysis: Household Survey, 2019).

Case Study 32 - Innovative AYUSH practices in Kerala - JANANI

JANANI is an initiative of the Department of Homeopathy, Government of Kerala that was launched in Kannur in 2012. The initiative employs homeopathy treatments for infertility in public health facilities. Cases like repeated abortions, polycystic ovary disease, endometriosis, fibroids and related problems which are known to be some of the reasons for female infertility are tackled under JANANI.

Implementation of the practice

Cases at JANANI Kannur District Homeopathy Hospital

2000	
1500	1500
1000	
500	
0	100
July - Dec 2012	Jan - Dec 2017
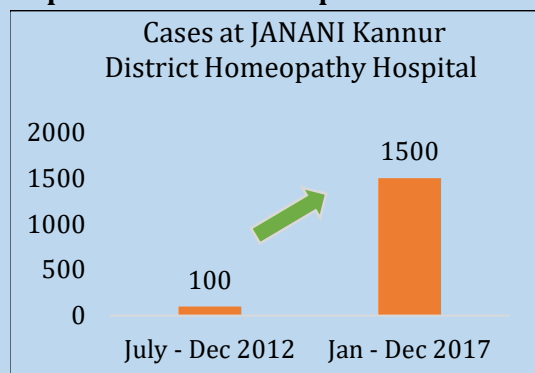
The government implemented this project as a pilot study in the homeopathy department using plan funds. An infertility centre was set up in Kannur District Hospital wherein the treatment was free of cost including the medicines under the district panchayat fund. After the pilot in 2012 by 2013, the department introduced infertility treatment centres at Thiruvananthapuram and Kozhikode as well.

Results of practice

Over time there has been an exponential growth in the number of infertility cases being registered and treated at Kannur District Homeopathy Hospital. As per the Economic Survey 2018-19, the cases have increased to ~1500 in 2017 (Economic Survey 2018-19).

JANANI has been extremely beneficial for those who were unable to conceive even after undergoing 10-15 years of treatment like IVF (In Vitro Fertilization), ICSI (Intra-Cytoplasmic Sperm Injection) (EY Primary Analysis: KIIs, 2019).

The JANANI scheme of Government of Kerala has spread awareness about the availability of Homeopathy treatment for infertility in public health facilities. The total number of conceptions after homoeopathic intervention through JANANI project till March 2019 is 1,655 of which 966 were reported as successful deliveries (EY Primary Analysis: KIIs, 2019).

Lessons Learnt

- With the success of the pilot project, expansion strategies for scaling up and increasing the reach with the creation of a greater number of centres were effective.
- Successful involvement of district panchayat through the funding of medicines and community outreach.
- IEC activities like medical camps, awareness classes and district-specific initiatives were also useful. For example, a family meet of beneficiaries is conducted in Kozhikode.

Conclusion

Other States may also look at adopting such practice for using homeopathy to treat infertility and other related health issues. This will also lead to increased awareness about homeopathy treatments and their benefits.

J. Sustainability

95% of the AYUSH products are plant-based and the source is predominantly forests. This needs to move towards cultivated sources for long-term sustainability (Department of AYUSH). The National AYUSH Mission through the National Medicinal Plant Board is funding for encouraging cultivation of raw materials, which otherwise are sourced from forests.

K. Financial risk protection (OOPE and insurance)

The cost of medicines is one of the major contributors for the out of pocket expenditures in India. It is expected that AYUSH Programs could play a role in bringing down the OOPE as co-location of AYUSH units with existing healthcare services could result in transition from allopathic medicines to AYUSH for various non-communicable diseases and infertility treatments etc and thus bring down the costs (Economic Survey 2018-19)

The Ministry of AYUSH has also recommended the inclusion of 19 AYUSH treatment packages under PMJAY (list of AYUSH treatment packages is mentioned in Appendix 6). While the diseases that are being considered for inclusion can be treated by existing allopathic medicines and procedures, it is expected that this would be a step towards encouraging alternative medicine and will serve the purpose of co-locating AYUSH facilities (EY Primary Analysis: KII, 2019).

L. Increase in employment generation

NAM has contributed to employment generation through creation of infrastructure and provision of services including standalone AYUSH hospitals, dispensaries and pharmacies, 50-bedded integrated AYUSH hospitals, AYUSH educational institutes, AYUSH units being set up in co-location with either District Hospitals, CHCs or PHCs, drug testing laboratories, wellness centres, and quality improvement and control. This has resulted in huge employment generation for AYUSH doctors, AYUSH nurses, other AYUSH staff, AYUSH officials, AYUSH drug inspectors, teachers, researchers etc. Various NGOs, ASHA workers, ANMs, AWWs etc. are also involved in the public health outreach component.

There has been a steady increase in the number of registered AYUSH doctors in India from 7,71,468 in 2016 to 7,73,668 in 2017 and 799,879 in 2018 (Ministry of Health and Family Welfare, 2019).

7.2.4 REESI+E Framework Analysis

Table 7-7: Analysis of NAM in REESI+E Framework

Themes	Remarks
Relevance	+ As there is an increase in lifestyle related disorders particularly chronic diseases, NCDs and systemic diseases, there is a need to promote AYUSH as an alternative system of medicine in India. + The objectives are relevant as the cases of chronic diseases, NCDs and systemic diseases are on the rise. This demands for an integrated health care approach with AYUSH playing a complementary role. + The cost of medicines is one of the major contributors for the out of pocket expenditures in India. It is expected that AYUSH Programs could play a role in bringing down the OOPE as co-location of AYUSH units with existing healthcare services could result in transition from allopathic medicines to AYUSH for various non-communicable diseases and infertility treatments etc and thus bring down the costs.

Chapter 7: National AYUSH Mission

| Themes	Remarks
Effectiveness	**+** In 2017-18, the number of OPD patients who visited AYUSH Government health care facilities were 17.7 Crores and the number of IPD patients who visited Government health care facilities were 19.5 Lakhs which has shown marginal improvements from the previous year (2016-17). **+** Targets for 5 out of the 8 output indicators and 3 out of the 5 outcome indicators have been met or exceeded in 2019-20. Targets for 5 out of the 8 output indicators and 2 out of the 5 outcome indicators have either been met or exceeded in 2018-19. **−** NAM has been successful in terms of creation of infrastructure in accordance with its targets. While physical infrastructure is a crucial component, delivery related initiatives require key focus.
Efficiency	**−** Over a 5-year period from 2015-16 to 2019-20, the Government has allocated approximately INR 2300 Crore to different States. The utilization rate (as a % of budget allocated) over the period has been approximately 50%. **−** The resource utilization varies from state to state and depends on various aspects. (independent administrative structure, flow of funds, availability and training of AYUSH workforce, IEC activities etc.)
Sustainability	**+** For different community-based interventions, States are providing financial support for implementing innovative practices in AYUSH **−** The scheme cannot sustain without central support **−** Focus on AYUSH is low in most of the States. There has been a decrease in % of AYUSH budget compared to budget of State Health Department in Punjab, Madhya Pradesh, Uttarakhand, Gujarat, Jammu & Kashmir, Haryana, Telangana, A&N Islands.
Impact	**−** Some States like Kerala and Chhattisgarh have actively replicated and scaled up successful features of the scheme. **−** The National Health Policy envisages better access to AYUSH remedies through co-location in public facilities. Co-located units serve as the first point of contact for AYUSH systems and has immense potential to generate demand and awareness about AYUSH services. Hence this component requires critical attention and priority. **−** Primary surveys have shown low levels of awareness about AYUSH services. As per NSSO 75th round, the percentage of ailments treated by AYUSH in India accounts for merely 4.4%.
Equity	**+** A larger percentage of ailments in females over males, primarily ailments in urban females, is treated by AYUSH in India **+** The Ministry of AYUSH has also recommended the inclusion of 19 AYUSH treatment packages under PMJAY. It is expected that this would be a step towards encouraging alternative medicine and will serve the purpose of co-locating AYUSH facilities **−** Use of AYUSH services has found to be lower among middle income households as compared to high income households.

	Satisfactory		Average		Needs Improvement		Data unavailable

7.2.5 Cross Sectional Thematic Analysis

Table 7-8: Analysis of Cross-Sectional Themes for National AYUSH Mission

Cross-Sectional Theme		Indicative Area of Enquiry	Key Questions	Remark
Accountability & Transparency	🟡	Availability of Data Records and Reports in public domain	Is data available for the scheme in public domain?	✚ Yes, Data is available for the scheme in public domain and the dashboard is being regularly updated by the Ministry of AYUSH
			What data records are available for the scheme in public domain?	✚ The data for various initiatives is available including scheme guidelines, budget provisions, budget utilization, AYUSH infrastructure, practitioners and patients, AYUSH education, AYUSH drug industry AYUSH institutes, NMPB activities etc. Further, the MoA is in the process of setting up a nationwide 'AYUSH Grid' to connect all the hospitals and laboratories. This would result in creation of electronic health records of all the beneficiaries and will create evidence to establish the effectiveness of AYUSH system of medicine. This is expected to enhance transparency and accountability in the sector
			What level of data is available in public domain - National/State/District-level/ Beneficiary level;	✚ National & State level
			Is beneficiary-level data available? At what level?	✚ Under DBT applicable components beneficiary level data is maintained at State level
		Monitoring Mechanisms	What is the frequency of audits?	✚ As per CAG
			Has a social audit been conducted? When?	✚ Varies from state to state
			Does a robust monitoring mechanism exist and at what level?	✚ Monitoring mechanisms has not been developed in most States
			What design aspects have been implemented for reduced leakages?	✚ Treasury system has been introduced to plug the leakages in fund flow and DBT has been implemented in 2019
		Evaluation Mechanisms	Process/Impact evaluation studies conducted in the last decade - Frequency, quality, coverage, Etc.	✚ Performance of NAM from inception up to March 31st 2017 was studied in the Mid term evaluation report conducted by third party

Chapter 7: National AYUSH Mission

Cross-Sectional Theme		Indicative Area of Enquiry	Key Questions	Remark
		Citizen Accountability	Has a citizen charter been carefully drafted, adopted and publicized?	**+** Yes, The citizen corner on the Ministry of AYUSH website entails grievance redressal cell, public grievance portal and information on AYUSH systems
			Are there functional grievance redressal mechanisms that successfully incorporate beneficiaries' and non-beneficiaries' concerns?	**−** No, Structured Public Grievance redressal mechanisms are available as per the central and State Government guidelines. Grievance redressal cell and public grievance portal have been introduced on pilot basis and will be made functional soon. Information on AYUSH systems is available on the website.
			Is the RTI mechanism functioning effectively?	**+** Yes, it has been functioning effectively
		Financial Accountability	What funding mechanisms are being used?	**+** The fund flow is elaborated in section 7.2.1
			Is DBT being used?	**+** Yes, DBT has been implemented in 2019
Direct/Indirect Employment Generation	🟢	Employment generation	What is the level of employment generation through schemes in the sector and overall sectoral contribution in National employment generation?	**+** AYUSH doctors/practitioners in India have increased by 16.5% from 6,86,319 in 2013 (prior to NAM) to 7,99,879 in 2018 (post implementation of NAM). In 2018-19, NAM has contributed to employment generation through creation of 104 co-located AYUSH units, 2298 hospitals/dispensaries, upgradation/setting up of 8 educational institutions, 2183 additional facilities providing drugs for common ailments, 3 drug testing labs and 6 integrated 50-bedded hospitals.
			What is the proportion of Informal jobs converted into formal	**−** Data unavailable
			What is the improvement in income levels?	**−** Data unavailable
			What is the improvement in availability of employment opportunities	**+** This has resulted in substantial employment generation for AYUSH doctors, AYUSH nurses, AYUSH staff, AYUSH officials, AYUSH drug inspectors, teachers, researchers etc. Various NGOs, ASHA workers, ANMs, AWWs etc. are also involved in the public health outreach component. The exact numbers may be difficult to quantify in the short period of this study. Medicinal plant component of NAM also generates employment by engaging farmers, self-help groups and cooperative societies of medicinal

Cross-Sectional Theme		Indicative Area of Enquiry	Key Questions	Remark
				plants growers for the purpose of cultivation of medicinal plants.
			What is the women participation (%) in the Sector/Programme	▬ Data unavailable
Gender mainstreaming	🟡	Inclusiveness in scheme design/planning	Is there a specific mention of gender equality and equity considerations in the scheme guidelines/objectives, i.e. has the scheme been designed keeping gender considerations in mind?	▬ No The framework for implementation of NAM does not include specific initiatives for gender mainstreaming. ✚ However, through facility visits, it has been observed that States like Kerala have taken up initiatives to improve maternal and child healthcare through a combination of AYUSH and standard treatments utilizing the funds of NAM. ✚ Further, as per NSSO 75th round, AYUSH services in India are being utilized largely by female patients over male patients, particularly in urban areas.
			Is gender budgeting being actively practised?	▬ No
			Are there any initiatives for the inclusion of transgender people?	▬ No
		Gender-friendly infrastructure and policies	Are gender-friendly plans translating into greater empowerment of women in implementation?	• Not applicable
			Are there women-friendly policies in place, like parental leave (maternity and paternity), crèches, flexible working hours, inclusion in decision-making etc.?	• Not applicable
		Capacity Building	Is there any specific training offered for women to enhance job roles or assist career progression?	▬ Data unavailable
			Are there sufficient awareness-raising communications or courses regarding women-friendly provisions/safeguards,	▬ Data unavailable

Cross-Sectional Theme		Indicative Area of Enquiry	Key Questions	Remark
			sexual harassment policies, grievance redressal mechanisms etc.?	
			Are there sessions/plans for sensitization of the work force on gender equality?	▬ Data unavailable
Climate change & sustainability including adoption of climate-change resilient practices & diversifications	⬤	Climate resilience	Is there a well-developed understanding of how climate change will affect the sector?	• Not applicable
			Are appropriate climate resilient policies, for mitigation and/or adaptation, included in the scheme objectives and design?	• Not applicable
			Are the planned design factors being successfully implemented?	• Not applicable
			Is there an appropriate disaster risk reduction plan in place?	• Not applicable
		Sustainable practices	Are there possibilities for circular economy development in the sector?	• Not applicable
			Is there an appropriate/sufficient focus on diversification (eg. agrobiodiversity) to reduce risk?	✚ 95% of the AYUSH products are plant-based and the source is predominantly forests. This needs to move towards cultivated sources for long-term sustainability (Department of AYUSH) ✚ The National AYUSH Mission through the National Medicinal Plant Board is funding for encouraging cultivation of raw materials, which otherwise are sourced from forests.
			Is there an effective waste management/end-of-life system in place for resources used in the sector/schemes?	• Not applicable
		Awareness and capacity building	Are there any training sessions held regularly for reducing pollution, adopting green practices, using local materials etc.?	• Not applicable
			Are the end beneficiaries aware of climate risks and possible individual mitigation/adaptation measures?	• Not applicable

Cross-Sectional Theme		Indicative Area of Enquiry	Key Questions	Remark
Social Inclusion: Role of Tribal Sub-Plan (TSP) and Scheduled Caste Sub-Plan component of the scheme in mainstreaming of Tribal and Scheduled Caste population	🟡	Funds allocated under TSP/ SCSP and other provisions for vulnerable communities Capacity Building	What is the fund allocated under TSP & SCSP for each scheme?	**+** 2% of overall funds under NAM for TSP and 5% of overall funds under NAM for SCSP has been earmarked.
			What is the fund allocated under TSP & SCSP for each scheme in different states?	• Since, the allocation to the States for TSP and SCSP is depends upon the TSP and SCSP applicable states and regions, the allocation by different states under these components are also varied.
			How much of the fund been utilized overall and by each state?	• Data unavailable
			For what outputs has the fund been utilized?	**–** At present no specific TSP and SCSP components are there in NAM. **+** However, the funds are utilized for relevant activities applicable to concerned population under NAM in identified TSP and SCSP areas.
			What has been the effect of the TSP & SCSP funds on improving equity?	• By augmenting the AYUSH services in TSP and SCSP regions, the scheme could enhance the accessibility and availability of AYUSH health care in identified TSP and SCSP regions
		Inclusion of vulnerable groups in scheme as well as sector	What are the interventions implemented for specific vulnerable groups?	• Even though the existing schematic provisions covers various target groups like the geriatric population, pregnant women, lactating mothers etc. more specific targeted programs may be required to added in the scheme.
			What are the major challenges for inclusion?	• Not applicable
			Are there any vulnerable groups not covered?	• Not applicable
Use of IT/Technology in driving efficiency	🟡	Deployment of IT enabled mechanisms for monitoring of the Schemes	In case of a scheme to create physical assets, is geotagging and use of geotagged photographs being done?	• Under development
			In case if the scheme intends to directly benefit an individual beneficiary or an enterprise or a collective, is JAM trinity and DBT being used?	**+** Yes, DBT is being used under the components of AYUSH services and medicinal plants (recently added)

Chapter 7: National AYUSH Mission

Cross-Sectional Theme		Indicative Area of Enquiry	Key Questions	Remark
			How is technology being used for on-ground data collection?	**+** NAM web portal is being launched to capture all the information on real time basis.
			Is there an online scheme MIS to ensure regular update of progress and effective supervision?	**+** Yes, M&E is done via a dedicated MIS monitoring and evaluation cell. However, this is not done on a concurrent basis.
			What is the granularity of data available in MIS?	**+** Data upto the district level is available
			What is the frequency at which the information is being updated/reported on the MIS/Dashboard?	**−** Does not happen on a concurrent basis
			What are the benefits of and challenges faced in implementation of MIS portals/ Apps?	**−** Accurate data reporting, integrity and standardisation have been identified as areas of improvement for HMIS. Use of HMIS data in planning health activities has to be emphasised to address local health needs
			Are the IT-enabled mechanisms user friendly?	**+** Yes **−** Capacity building of data collection and operating staff may further help
		Use of latest technology to improve efficiency and effectiveness of scheme implementation	What are the technologies being used in project implementation, service delivery?	**+** Components like Telemedicine etc. are available in the schematic guidelines. **−** However, this needs to be given more focus by the States/UTs.
			Which states are using the latest technologies?	• Not applicable
			How is technology adoption being encouraged?	**+** A nationwide digital platform called "AYUSH GRID" which aims to bring onboard all AYUSH facilities including hospitals and laboratories and to promote traditional systems of healthcare is underway.
Development, dissemination & adoption of innovative	🟡	Fund allocation towards promotion of innovation	What percent of total allocation is directed towards development, dissemination and adoption of innovative practices and technology? How much of it is utilized?	• Varies from state to state

Cross-Sectional Theme		Indicative Area of Enquiry	Key Questions	Remark
practices, technology & know-how		Contribution of improved practices in increasing outcomes	What is the status of acceptance of innovative practices and technologies amongst the target beneficiaries? What are the possible challenges faced hindering acceptance of the same?	▬ The acceptance in the beneficiaries has still been low due to lack of awareness about the AYUSH system of practices and medicines.
			What is the impact of innovative technologies and practices on scheme and sectoral outcomes?	▬ The innovative practices to scalable level is yet to be developed by the States/UTs.
Stakeholder and Beneficiary behavioural change	🟡	Fund Allocation	What percent of total allocation is directed towards Awareness generation or sensitization? What is the utilization rate? and How much impact has it been able to generate in terms of behaviour change?	• Varies from state to state. IEC activities come under the flexible component of NAM.
		Mechanisms to promote and ensure behaviour change	What are the existing mechanisms at State/District/Block level to promote beneficiary awareness and sensitization?	• Varies from state to state. IEC activities come under the flexible component of NAM.
			What activities are undertaken at District/Block level to promote adoption of good practices?	• Varies from state to state. IEC activities come under the flexible component of NAM. There is a scope to develop Behaviour change component as a structured program.
Research & Development	🟡	Fund Allocation	What percentage of total allocation (Sector as well as Scheme specific) is directed towards R&D? How much of that percent is being utilized?	✚ -Research & Development in areas related to medicinal plant component is being funded through NAM under the flexible component of the scheme. However, for this activity there are not many takers. ✚ Apart from NAM, Ministry of AYUSH promotes research and development by funding various other institutions and initiatives.
		Institutes and departments dedicated for R&D	What is status of availability of any Institute or centre or department dedicated for R&D in the Sector?	✚ In 2019-20, INR 292 Crores were allocated to Central Council for Research in Ayurvedic Sciences, INR 118 Crores were allocated to Central Council for Research in Homeopathy and INR 152 Crores were allocated to Central Council for Research in Unani Medicine.

Chapter 7: National AYUSH Mission

Cross-Sectional Theme		Indicative Area of Enquiry	Key Questions	Remark
				✚ Assistance is also being provided by the Ministry to accredited AYUSH Centres of Excellence in non-governmental sector, private sector engaged in AYUSH education, drug development and research, clinical research and folk medicine
		Private Sector participation in R&D	What is the percentage of private sector participation in R&D?	• Data unavailable
		Challenges in undertaking R&D efforts	What are the challenges?	▬ There is a need to converge different disciplines in conducting the research based on a robust research protocol with focus on epistemological identities of AYUSH principles and practices
			What are the gaps? Are there any under-researched areas?	▬ The utilization of AYUSH strengths in Public Health can be one of the priority areas for research
Unlocking Synergies with other Government Programmes	🟡	Convergence (Inter-Ministerial/Inter-Departmental/Financial/Human Resource/Administrative/Institutional /Schemes)	What are the existing mechanisms to ensure convergence across Schemes, Departments at different levels (i.e. National/State/District/Block)?	✚ Mainstreaming of AYUSH in being done through co-ordination with National Health Mission of Ministry of Health and Family Welfare. ✚ For the implementation of the Medicinal plant component of NAM, co-ordination is required with multiple departments at state level including Horticulture, Agriculture and Forest departments.
			What activities are undertaken to ensure convergence at community level? Are there any Action Plans prepared at State/District/Block level to ensure the same?	✚ AYUSH Gram component under NAM ensures convergence at community level. The elected village representatives are extensively involved for promoting AYUSH based lifestyles, campaigning against communicable diseases, training village health workers for identification and use of local medicinal herbs and providing AYUSH health services. Active participation from the community is involved in the implementation of this component. There is involvement of PRIs, ASHAs and other health workers at local level.
			What are the challenges hindering effective convergence?	▬ Issues of dual control in mainstreaming component ▬ Lack of devolution of administrative and financial power at lower levels.

Cross-Sectional Theme		Indicative Area of Enquiry	Key Questions	Remark
Reforms, Regulations	🟢	Adoption of models acts and reforms at governance, institutional and administrative level	What are the acts/rules/regulations adopted at different levels (National/State/District)?	**+** Regulations: • National Health Policy, 2017. • IMCC Act, 1970 • HCC Act, 1975 • Drugs & Cosmetics Act & Rules there under • Drugs & Magic Remedies Act • Indian Forest Act • Clinical Establishment Act etc.
			What are the challenges faced in effective implementation of the Model Acts and Regulations?	Since, Health is a State subject, the implementation of provisions under these acts mainly rests upon concerned State/UT. The successful implementation depends on the commitment and field level infrastructure available in the States/UTs.
			What measures are being taken to ensure effective implementation and compliance of adopted acts/rule/regulations? (like in areas of safety, accountability, transparency etc.)	1. The mission inter-alia support the efforts of state Governments in enforcing the Minimum Standard Regulations under IMCC Act and HCC Act by providing Grant-in-Aid to AYUSH educational institutions for infrastructure development. 2. The mission also support the States/UTs for ASU&H drug enforcement mechanism under Drugs & Cosmetics Act. 3. By providing the support for cultivation of medicinal plants, the mission envisages to reduce the exploitation from resources.
Impact on and role of private sector, community/ collectives/ cooperatives	🔴	Private Sector Participation	What is the percentage of private investment in the clusters/programs run by the government	**–** There exists a provision for innovations in AYUSH through PPP in the framework for implementation of NAM.
		Public-Private Partnership	What incentives are available to promote private investments in the Sector?	**–** Data unavailable
			How Private sector can help in improving value chain creation?	**–** Data unavailable
			What provisions/incentives are existing to promote PPP in the Sector?	**–** Data unavailable
			How well have PPP functioned in the Sector? What are the challenges faced?	**–** Data unavailable

🟢	Satisfactory	🟡	Average	🔴	Needs improvement	⚪	Not relevant/ applicable	🔵	Data unavailable

7.3 Issues & Challenges

Governance & Institutional Mechanisms

- While few States have officials taking independent charge for AYUSH (Kerala, Rajasthan, Himachal Pradesh, Uttar Pradesh, Madhya Pradesh), senior level officers have multiple charge and the lower level officers do not have devolution of power.

- Majority of the States indicated good synergies among various departments at the state level (State Medicinal Plant Board, Drug Licensing Authority, Directorate of Health Services, National Health Mission). They however cited, dual control under NHM and NAM as an issue.

- Meetings of governing bodies and executive bodies of States are not attended properly by the senior-level state representatives and this inhibits effective communication and resolving of issues.

- Majority of the SPMUs were observed to be inadequately staffed both in terms of expertise and availability

Flow of funds

- The adequacy and timelines of funds disbursement have been a challenge.

- It was found that funds were parked for a long duration in some States like Punjab and Maharashtra where funds were not devolved to the State AYUSH Societies and were at the treasury for 2 years.

- There are long delays in receiving funds that are being transferred from the state treasury to implementing agencies.

Infrastructure (HR)

- AYUSH courses exist for UGs and PGs but not for allied health professionals. However, it was observed that AYUSH courses for allied health professionals are run by States although they are not centrally regulated.

- There is lack of coordination between NHM and NAM in implementing the mainstreaming of AYUSH component. This is further leading to lack of ownership and due focus towards the same. In co-location, AYUSH personnel feel de-motivated due to marginalization and work distribution. The doctors are often sub-optimally utilized for other activities like maintaining registers etc.

- Ministry of AYUSH has financially supported setting up of 50 bedded integrated AYUSH hospitals, upgradation of hospitals & dispensaries. In this regard, the States are not creating regular/incentive based long-term contractual staff posts for the AYUSH doctors. There is a strong need for creation of regular/incentive based long-term contractual staff with their rational deployment.

- In the NAM framework for implementation, the provision for hiring of support staff for AYUSH dispensaries is lacking.

Medicinal Plant Component

- Need for increased cultivable land for medicinal crops

- Lack of market intelligence on demand, supply, pricing, etc. (last study conducted in 2014-15)

- Lack of adequate marketing linkages e.g. Mandis, Market Place

- Lack of proper Post harvesting facilities e.g. drying yards, storage, grading, etc. as per the requirements of industries / exports

- Lack of Semi-processing units for value addition

- SOPs, quality standards, regulatory and policy framework for marketing and trade of medicinal plants still evolving

- Low uptake of subsidies and low utilization under the scheme

- Lack of clear monitorable parameters to measure outcomes

- Lack of contribution and low priority from States towards this component of the CSS

Procurement

- Medicines have to be procured as per the guidelines, wherein 50% have to be procured from centre and state PSUs. The production capacity of these PSUs is less and there is lack of timely supply and shortage of medicines.

- Despite there being a provision for procurement from private players, many of the States/UTs are not giving them an adequate opportunity for participation in the procurement process. Pending litigations are also hampering the procurement processes in some States.

- States do not have dedicated policies for the procurement of medicines. Hence it is not possible to directly place orders after receiving the grant.

- Lack of standardized protocols for construction activities is leading to delay in utilization of funds.

- Lack of storage facilities at State/District level for proper storage of medicines

Quality of assets/services

- Procurement procedures of States is a concern as they vary year on year.

- States indicated cases where drugs are sold despite sub-optimal test results (indicated by the drug controller) showing poor quality of drugs.

- In States where the scheme is implemented, a monitoring committee is supposed to be formed and submit reports twice in a year. (Department of AYUSH) This committee is to be constituted with the representative of state government/drug controller AYUSH and representative from Ministry of AYUSH (joint advisor who is dealing with drugs). This has not taken place in almost all the States. (except Chattisgarh)

IEC/Outreach activities

- IEC and outreach activities are being undertaken not just from the budget allocated under AYUSH but even from the budget allocated by Woman and Child Welfare departments etc. Hence various departments' staff also conduct these activities.

- Training of staff conducting these activities is crucial as the right messages need to be conveyed.

Training

- Limited training activities for AYUSH work force have taken place in States.

- Except for few trainings like training of medical officers in Haryana and Sikkim, Mizoram and Madhya Pradesh, systematic programs have not been undertaken (Source: Mid-term evaluation report of NAM).

Technology

- Lack of IT infrastructure has played a role in negatively affecting utilization of funds, speed of flow of funds and educational institutions component.

- At the local levels, lack of computerization is affecting the implementation of NAM.

Other issues & challenges

- Re-appropriation of funds is not possible in NAM. In case of re-appropriation, the States while submitting the fresh proposals for the next year provide details of committed and un-committed expenditure and the quantum of finances released is adjusted based on the un-committed expenditure that is pending. This is however not possible under NAM as the resource pool is itself very small and, in most cases, the un-committed amount exceeds the quantum of finances that are to be released for the next year, leading to non-absorption of funds.

7.4   Recommendations

Governance

- Administrative set up for AYUSH needs to be more independent with dedicated resources – Devolution of administrative and financial power at lower levels is required for quicker decision making.

- There is a need for strengthening of CPMU and SPMUs by ensuring that they are adequately staffed with suitable human resources with subject knowledge and expertise.

- At present there is a State AYUSH Society at the State level, but unlike NHM there are no district/nodal officers present in every district for monitoring and implementation of NAM initiatives that are being undertaken in that particular district. It is proposed that a District Program Management Unit (DPMU) be set up with members consisting of Heads of the AYUSH hospitals in the district, Heads of the AYUSH colleges in district, Chief Medical Officer of the district, nominee from Office of the District Magistrate, an appointed District Nodal Officer to ensure synergy of inputs between modern medicine system and AYUSH and for planning, implementation and monitoring of AYUSH initiatives.

- While dual control has been sighted as a challenge, considering the need for better coordination a matrix structure (dual control) is preferred. However, better coordination and utilization of human resources should be ensured.

Flow of funds

- It is suggested that the state agencies may conduct rigorous follow ups with the state treasury for timely release of funds.

- Integration and enforcement of PFMS system to track disbursal and utilization of funds at the execution point.

Infrastructure (HR)

- There is a need to introduce strategies for effective implementation and facilitation of mainstreaming of AYUSH along with stringent monitoring mechanisms (Shrivastava, Shrivastava, & & Ramasamy, 2015). Better coordination mechanism between NHM and NAM needs to be developed and adhered to with respect to recruitment process, training and capacity building and regular performance monitoring of AYUSH staff.

- Clear roles and responsibilities should be defined for AYUSH and allopathic practitioners and protocols needs to be in place for interactions between allopathy and AYUSH system.

- All HR and training related to AYUSH may be devised in co-ordination with Ministry of AYUSH. Currently the HR component under co-location is still being handled by NHM. AYUSH doctors at co-located facilities may also be trained/re-trained in their core professional areas beside NHM interventions. Exit surveys may be conducted covering patients attending co-located facilities to elicit their views on treatment preferences and experiences at AYUSH facilities. This will also facilitate development of norms for cross referrals and increase relevance and value addition by AYUSH doctors.

- There may be a regular mechanism for assessment, improvement and monitoring of skills specific to AYUSH.

- Incorporate provision for posts for hiring AYUSH support staff for AYUSH dispensaries in the framework for implementation.

Medicinal plant component

- SOPs, quality standards, policy framework for medicinal plants

- Drafting an action plan on increasing uptake of subsidies for cultivation and value addition infrastructure

- Supporting farmers & FPOs in cultivation, processing and value addition of medicinal crops including entrepreneurship development and support to FPCs, Self Help Groups through subsidies and grants

- Medicinal plant component may be a central sector scheme instead of CSS as the harvesting is in a particular season and the availability of fund would be critical for timely implementation

Procurement

- All the States may have their procurement policies in place. NAM may consider developing a model procurement policy to support States in adopting/finalising their policy.

- It is suggested that AYUSH department in States may leverage the existing purchase and procurement infrastructure including medical services corporation of the state (whichever is applicable) for procurement of drugs. The corporation may be authorized to also monitor quality of the medicines. The corporation could also empanel private players.

- Implement standardized protocol for the construction activities under NAM that are to be implemented by state authorities.

Public Outreach Activity

Chapter 7: National AYUSH Mission

- The centre should issue guidelines on ensuring uniformity in the messages that are intended to be conveyed. This component of NAM also requires clear targets from the centre. The IEC activities may be linked with the outreach activities under NHM such as breast-feeding week in August, child nutrition week in September etc.

- Innovative initiatives such as inclusion of school children for distribution of free saplings of medicinal plants etc. may be encouraged.

Quality of assets/services

- States may follow the list of plant species mentioned by the State Medicinal Plants Board as it is required to ensure that infrastructure for selling and storage of these species is available. There is a need to document medicinal plants with established medicinal values and protect patent rights under the relevant regulations or Acts.

- A mechanism may be put in place to rank the existing AYUSH colleges and hospitals.

Technology

- Strengthening the hardware, software and human resources with regards to the same would aid in better monitoring and reporting and increasing the flow of funds and higher utilization of funds.

Other recommendations

- There is a need for increasing capacity of States for the absorption of funds. The centre may develop various programs in consultation with States and empower the States to build capacity to absorb the funds. The centre may handhold the States in preparing SAAPs for better utilization of resources.

- As has been done in NHM, the States may be supported in developing quality SAAPs and funds should be released accordingly. Physical and financial targets may be regularly monitored.

- Standard Treatment Guidelines for the treatment of 22 diseases by integration of AYUSH system of medicines has been prepared by Ministry of AYUSH. They should be operationalized in a time bound manner by the States.

- M&E is done via a dedicated MIS monitoring and evaluation cell. However, this is not done on a concurrent basis. There is a need for concurrent evaluation of the NAM components for effective results.

- It is proposed that like NHM, NAM should also have functional verticals like HR, Infrastructure, Finances, Outreach programs, Quality control etc. This will enable adoption of the flexi pool concept for NAM as well. Under NAM, major funding is for infrastructure components. While physical infrastructure is a crucial component, delivery related initiatives require key focus as in the case of NHM. Targeted interventions through CHCs, PHCs, sub centres and other similar institutions are required so that preventive and promotive health care is given more focused orientation. The focus should now be on ensuring quality and implementation of the medicinal plant component. Autonomy and flexibility for functioning needs to be provided to NAM.

- Under R&D (central sector scheme), a separate component on research & development for integrated care pathway should be launched. Evidence based integrated care pathway would help AYUSH mainstream itself.

Chapter 8: Conclusion

8. Conclusion and Recommendations

The study focuses on evaluation of Centrally Sponsored Schemes in Health Sector- National Rural Health Mission, National Urban Health Mission, Tertiary Care Program, Human Resources for Health and Medical Education and National AYUSH Mission.

For the evaluations mixed method has been used with a combination of qualitative approach followed by quantitative approach (statistical analysis), using both secondary and primary data. For secondary analysis, past studie, research papers etc. published during the study period have been reviewed. For primary analyses data has been collected from household/facility surveys, Key Informant Interviews (KIIs) and Focus Group Discussions (FGDs).

This chapter concludes the study with the summary of key findings and recommendations.

8.1 Key Sector Findings

Table 8-1: Gap map synthesis of Sector and CSS

Key Findings	Sector Objective	Schemes addressing the issue	Coverage
High OOPE	Decrease in proportion of households facing catastrophic health expenditure from the current levels by 25%, by 2025	• AB-PMJAY • NRHM • NUHM • Tertiary Care Programs • NAM	**Adequate**
Shortage of healthcare professionals Weak primary infrastructure and care pathway linkage	• Universal Health Coverage • Reinforcing trust in public healthcare system • To have at least two beds per thousand population	• NRHM • NUHM • Tertiary Care Programs • Human Resource for Health and Medical Education • NAM • AB-PMJAY • Pradhan Mantri Swasthya Suraksha Yojana	**Adequate**
Ensuring equity	Universal Health Coverage	• NRHM • NUHM • Tertiary Care Program • Human Resource for Health and Medical Education • National AYUSH Mission • AB- PMJAY • Pradhan Mantri Swasthya Suraksha Yojana	**Adequate**
Meeting SGD/NHP goals	Increase Life Expectancy at birth from 67.5 to 70 by 2025	• NRHM • NUHM • Tertiary Care	**Adequate**
	Establish regular tracking of Disability Adjusted Life Years (DALY) Index as a measure of burden of disease and its trends by major categories by 2022	• NRHM • NUHM • Tertiary Care • National AIDS Control Program	
	Reduction of TFR to 2.1 by 2025	• NRHM • NUHM • Family Welfare Schemes	
	Reduce U5MR to 23 by 2025 and MMR to 100 by 2020		
	Reduce IMR to 28 by 2019		
	Reduce neo-natal mortality to 16 and still birth rate to "single digit" by 2025		

Key Findings	Sector Objective	Schemes addressing the issue	Coverage
	Achieve and maintain elimination status of Leprosy by 2018, Kala-Azar by 2017 and Lymphatic Filariasis in endemic pockets by 2017	NHM - Flexible Pool for communicable diseases	
	Achieve and maintain a cure rate of >85% in new sputum positive patients for TB and reduce incidence of new cases, to reach elimination status by 2025	NHM - Flexible Pool for communicable diseases	
	Reduce the prevalence of blindness to 0.25/ 1000 by 2025 and disease burden by one third from current levels	• NHM - Flexible Pool for non-communicable diseases • Tertiary Care Programs	
	Reduce premature mortality from cardiovascular diseases, cancer, diabetes or chronic respiratory diseases by 25% by 2025	• National Health Mission • Tertiary Care Programs • National AYUSH Mission	
Quality and periodicity of data	• Ensure district-level electronic database of information on health system components by 2020. • Strengthen the health surveillance system and establish registries for diseases of public health importance by 2020.	• NRHM • NUHM • Tertiary Care Program • Human Resource for Health and Medical Education • National AYUSH Mission • AB-PMJAY	**Inadequate**
Low Technology penetration	• Establish federated integrated health information architecture, Health Information Exchanges and National Health Information Network by 2025.	• NRHM • NUHM • Tertiary Care Program • Human Resource for Health and Medical Education • National AYUSH Mission • AB-PMJAY	**Inadequate[98]**
Fragmentation of service providers		-	**No Coverage**
Missing middle	Universal Health Coverage	Health Assurance through: • NRHM • NUHM • Tertiary Care Programs • National AYUSH Mission	**Inadequate**
Health seeking behaviour		• NRHM • NUHM	**Inadequate**
Medical Value Travel	Employment Generation	-	**No Coverage**

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[98] National digital health mission has been recently launched which would provide adequate coverage

Chapter 8: Conclusion and Recommendations

8.2   Recommendations

8.2.1   Reduction in OOPE

Multiple schemes as detailed in Table 8-1 adequately cover various elements relating to reduction in OOPE at the design stage. Services like free transport, free diagnostics, free dialysis, and free drug / Jan Aushadhi Kendras are initiatives that have helped reduce OOPE. Most of these programs have been launched during study period and some of these are still in roll out phase. However, learning from the experiences till date, the implementation of the programs needs more attention. The monitoring mechanism needs to be further strengthened to ensure effectiveness and efficiency

While continuing the ongoing efforts, public health facilities need to expend quality assured services to a larger population with the inclusion of more essential services with higher reliability. With increase access through transportation and motorable roads, the public health facilities and their linkages with each other (viz SC, PHC, CHC, and DH etc) needs to be revisited to ensure efficient availability of optimal services. A separate study may be carried out in this direction.

This study also revealed that public awareness about entitlements and benefits under various programs/schemes including PM-JAY needs to be enhanced. For this purpose, focused IEC (based on channel effectiveness); and involvement of local governments and communities need to be further increased. The medical expenditure has reduced during the study period for public hospitals.

Some of the new initiatives which may be considered include:

► While, NHM has certain provisions and initiatives for strategic purchasing of select services from the private sector, the Government may consider higher level of engagement with the private sector to increase strategic purchase of services across urban and rural areas post establishment of strict referral mechanisms. Without a strict referral mechanism and adequate monitoring, the strategic purchase may not be successful. Such a strategic purchase shall be largely for IPD services

Further, on pilot basis, OPD services may be purchased to understand the possibility of scalability. The strategic purchase needs to be mapped and designed by States/UTs depending on their need. In case of strategic purchase, outreach activities also need to be planned separately by the government through select government facilities. In order to reduce the fragmentation and ensure that end patient continues to receive the services, there is need for an aggregator for different service providers. The same has been highlighted by stakeholders in KII. A detailed policy paper may be explored in this aspect.

► Cost of healthcare has been a concern. In order to reduce the cost of healthcare, there is a need to incentivize the private sector to drive efficiency & quality improvements. Various existing programs like PMJAY may also be instrumental in this regard. Further, continued investment in development of public health facilities for households not covered under the PMJAY is required.

► Government may also consider setting up of a Challenge Fund to promote entrepreneurs driving technology penetration and various innovations which ultimately lead to reduction in cost of service delivery and increasing the availability of services.

► There is also a need to further encourage Make in India for medical supplies/manufacturing across the value chain. Along with incentives and facilitation to attract private sectors for

manufacturing, there is a need to create an eco-system for the sector. Complete eco-system creation itself would be a good attraction.

8.2.2   Increased availability of healthcare professionals

Availability of healthcare professionals both technical and managerial has been a constraint. Various programs have been initiated for increasing technical manpower including doctors (general practitioners), specialists, nursing staff, and allied healthcare staff and these programs are also showing the impact. To further reap the benefits, it is required that a transparent and robust policy for recruitment and posting of human resources maybe developed. MoHFW may develop a model policy to aid and support the states. Further, policy for training of healthcare professionals also need to be clearly articulated and implemented.

On the managerial side, public health management cadre, as also approved by Central Council of Health and Family Welfare, MoHFW, may be conceived combining the public health and health management skills. Once trained, these officers should be posted in public health positions rather than as medical officers as also recommended by IIPH & IIM Study, 2020. Further, periodic capacity building of in-service health professionals using digital platforms should be encouraged and training outputs for health professionals should be regularly monitored. For this purpose a dedicated digital learning platform may be developed. The same platform can be leveraged for training other stakeholders involved in healthcare

Further, medical curriculum should also have courses on national health programs and on manging local health needs. Further, courses focusing on development of mid-level health professionals should be introduced including enriching their role in primary care.

8.2.3   Strengthening of health infrastructure and care pathway linkage

Various service delivery aspects of the Comprehensive Primary Health Care (CPHC), such as out-patient care, palliative care, preventive health, IEC etc. are closely interlinked and the CPHC can be best delivered through an integrated service delivery system. It is precisely with this objective the AB-HWC programme has been launched by the government where the full range of primary care services including all its aspects is envisaged to be provided through the public health system.

The budgetary allocation towards achieving comprehensive primary healthcare needs to be increased, focusing on:
- ► System strengthening initiatives like increased uptake and upgradation of FRUs, SNCUs and 24×7 facilities, human resources
- ► Ensuring availability and reliability of service at HWCs, PHC, and CHCs by
    - Adhering to quality norms
    - Periodic infrastructure & audit
    - Increased pace of upgradation of facilities to HWCs
- ► Specific focus is required to increase availability of functional facilities and reliable services
- ► Leveraging technology: CPHC-NCD App, Telemedicine, Artificial Intelligence, Block chain etc

To increase the reliability of services, quality assurance should be an area of focus with special focus on establishment of standard treatment protocols. 100% compliance with quality certifications (such as NQAS, Kayakalp, LaQshya) and its continuous monitoring against defined standards is required. The identified gaps should be addressed health facility-wise, in a systematic manner.

Chapter 8: Conclusion and Recommendations

The care pathway linkage also needs to be improved through
► enforcement of gate keeping mechanism,
► availability of reliable services at various levels leveraging technology
► active involvement of local governments (PRI and ULBs) in planning and monitoring of healthcare programs. For this purpose, adequate training to local government representatives needs to be imparted which can be achieved using technology as the one of the tools. Technology can also be used to monitor learning.

The R&D component of central sector scheme should provide adequate fund to facilitate research on development and operationalization of Integrated Care Pathway involving AYUSH and modern medicine. Integrated care pathway would also help in reducing the manpower and infrastructure requirements for modern medicine.

8.2.4   Ensuring equity

Various schemes / programs adequately cover the equity aspect at the design stage. There is a need to strengthen the implementation of the schemes / programs on certain aspects including:

► Targeted IEC activities making beneficiaries aware of their entitlement would facilitate effective utilization of healthcare services for equitable access

► Ongoing efforts in bringing social behaviour change should be augmented further with involvement of local governments and community outreach

► Enabling access to health in tribal areas requires better infrastructure planning including free transport services, Mobile Medical Units, increased local HR, innovations in retention strategies and training for HR need to be considered in the local context.

8.2.5   Meeting SGD/NHP goals

The schemes are adequate in design, further focus is desired on the implementation including:

► Technology for monitoring scheme implementation progress

► Stronger convergence with other ministries through task force

► Community based follow up of children discharged from nutrition rehabilitation centre and intense collaboration with ICDS as per POSHAN recommendations

► Convergence with Swachh Bharat, Jal Jeevan Mission and Poshan Abhiyaan etc.

► Stronger IEC campaigns against consumption of tobacco and alcohol

► Higher taxation for tobacco and higher criminal punishments for substance abuse

► Development of infectious disease wards each district to cater to the future challenges

8.2.6   Quality and Periodicity of Data

The present status of quality and periodicity of data has been discussed in section 2.2.5. There is a need to ensure data availability with higher periodicity and of certain quality to facilitate evidence-based decision making. To enhance the periodicity of data, it is recommended that the MoHFW or NITI Aayog may consider carrying out annual surveys through third party survey agencies in addition to augmenting the data in HMIS (e.g including CD & NCD data apart from RMNCH+A).

Further, following recommendations would help enhance the quality of data, among others:

- ► National Health Digital Mission should be established to implement National Digital Health Blueprint recommendations

- ► Increased focus is required for database integration, introduction of e-health records (both for patient record and health infrastructure/ resource record) and capacity building of health workforce for data collection and reporting

- ► Capacity building of health workforce including ASHAs is required to effectively use technology in data collection and reporting

- ► Need to further develop systems, standards and regulations to ensure portability across systems and adapt to increased digitization of the healthcare delivery

- ► HRMIS database should be regularly updated for common data sharing amongst different stakeholders (Directorate of Health Services, State Health Mission, State Health Society, Directorate of AYUSH) for information relating to recruitment, transfers and postings of health officials

8.2.7 Facilitating Technology Penetration

Technology is expected to play a greater role in the next decade in delivery of healthcare services. For this purpose, it is suggested that an open health network may be developed to allow portability of data across various stakeholders without compromising on the security and identity.

Further, Challenge fund may be set up to provide entrepreneurs who facilitate technology adoption in the healthcare sector. The challenge fund may be set up at the state level to ensure that the entrepreneurs are encouraged to develop solutions as per the local needs and are replicable in nature.

8.2.8 Dealing with fragmentation of service providers

Fragmentation of service providers not only hinder the portability of healthcare service but also adversely impact the quality of service. Presently, none of the schemes / programs address the fragmentation of service providers. A mechanism may be developed to incentivize private sector providers to (a) drive efficiency, (b) adherence to quality, (c) participation in strategic purchase (if conceived). This will drive some level of consolidation and standardization of service providers. Further, standardization may be achieved through capacity building of service providers on various aspects through digital mode.

8.2.9 Missing Middle (Fragmentation of purchaser)

While PM-JAY has consolidated the bottom 40% of the population, there is a large segment of near below poverty line and informal work-force who do have institutionalized insurance / assurance for getting healthcare services. There is a need to enable risk pooling for missing middle (middle income population not covered under Ayushman Bharat or any other institutional purchase of insurance/assurance) through insurance or assurance model.

8.2.10 Health seeking behaviour

There is an increasing trend of people becoming health conscious. According to an estimate 9 Cr people were health conscious in 2018 and it is expected that the number would increase to 13 Cr by 2022 (RedSeer Consulting, 2018). There is a need to provide incentives and have targeted IEC to promote health seeking behaviour. This would increase focus on promotive and preventive care. There is also a need to have stronger IEC campaigns against consumption of tobacco, alcohol,

substance abuse and lifestyle management. Further, physical and mental wellbeing may be added a part of academic curriculum.

8.2.11 Medical Value Travel

MVT involves activities relating to travel and hosting of a foreign tourist for the purpose of restoring, improving, maintaining health though medical interventions. The medical facilitators are the key business sourcing entities / individuals.

The MVT facilitators are presently fragmented. They may be organized in associations and be regulated through the association. Further, they may also be accredited by NABH.

Further, "Heal in India" as a campaign may be launched in key origin countries to attract MVT patients.

8.3 Summary for Rationalization of Scheme

Scheme/Program[99]	Performance	Relevance	Rationalisation	Remark
National Rural Health Mission	🟡	🟢	▶ ⬆	Additional funding towards programs addressing NMR, U5MR and disease control programs, reducing of health inequalities (targeted initiatives for underserved), availability of health workforce especially specialists, and improving quality of care
Health System Strengthening	🟡	🟢	▶ ⬆	Focusses on enhancing accessibility & coverage along with ensuring quality of care, which is critical for universal health coverage India
NPCDCS	🟡	🟢	▶ ↔	Focus on creating referral linkages and early identification/management
NMHP	🟡	🟢	▶ ⬆	Mental health issues have increased with urbanisation and increase in lifestyle diseases. Increased funding to focus on more than 100 districts (still not covered under district mental health program) and creation of beneficiary data base
NPCBVI	🟡	🟢	▶ ↔	NPCBVI is relevant and caters to the increasing prevalence of blindness and requirement of cataract surgeries in the country
NPHCE	🟡	🟢	▶ ↔	Only 2.8% of elderly people (immobilised) that require specialised geriatric care have been provided OPD services under the program. The scheme should be continued with focus on making geriatric services available at all DH and CHCs.
RCH Flexible Pool (RMNCH+A)	🟢	🟢	▶ ↔	Increased focus areas should be on primary care and ensuring continuity of care
NIDDCP	🟡	🟢	▶ ↔	Over 330 districts are endemic to iodine deficiency disorder, making NIDDCP relevant and important.
IDSP	🟡	🟢	▶ ↔	Increased resources to focus on strengthening surveillance, early detection and data reporting.
Strengthening of State Drug Regulatory System	🟡	🟢	▶ ↔	The scheme recently was separated from RCH flexipool to a separate budget head with substantial increase in budgetary allocations. Data reporting to be improved for effective evaluation and monitoring of. The scheme should be continued and strengthened in terms of infrastructure, human resources, equipment, training, budget, and adoption of latest computerization and online aids

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[99] For reference, CSS have been highlighted while others are programs under the respective CSS

Chapter 8: Conclusion and Recommendations

Scheme/Program[99]	Performance	Relevance	Rationalisation	Remark
NLEP	🟠	🟢	▶ ↔	NLEP is relevant with the prevalence rate of 0.67/10000 population in the country. While the Gr. II disability cases have decreased, there is still a lot more desired towards leprosy eradication.
NTEP (RNTCP)	🟠	🟢	▶ ↔	NTEP has shown good financial absorption capacity and increased private sector involvement in TB notification. Focus on tracking and complete treatment with IT intervention
NVBDCP	🟠	🟢	▶ ⬆	Targets for vector borne diseases remain unmet and require increased efforts from NVBDCP.
NPPCD	🟠	🟢	▶ ↔	NPPCD is relevant with the prevalence of 6.3% in deafness, affecting more than 80 million people in the country. Continued efforts towards addressing the DALYs due to deafness related issues are required
NOHP	🟠	🟢	▶ ↔	There is a need for guidelines from Centre regarding prioritising the implementation of Oral health program and integration with relevant national programs pertaining to prevention and promotion. The fund disbursement pattern is skewed, since more than 60% of the funds are consumed by 3-4 good performing states. Other states which are currently generating a low demand should also prioritise the implementation of the program
NPPCF	🟠	🟢	▶ ↔	The program is relevant with changing demand across the country. The program reports 50% utilization of funds in 2018-19. There is a need for sustained efforts by addressing the shortage of staff and funds for regular monitoring and review of the program.
National Urban Health Mission	🟠	🟢	▶ ⬆	Higher investments for strengthening of primary and secondary care infrastructure. Programs need to be modified as per urban context. Equivalents of ANM in rural context required to make urban ASHAs more effective.
National AYUSH Mission	🟠	🟢	◔ ⬆	The centre may develop various programs in consultation with States and empower the States to build capacity to absorb the funds. The centre may handhold the States in preparing State Action Plans for better utilization of resources. AYUSH needs to be integrated seamlessly in the monolithic care pathway. A new program component may be added to popularize AYUSH as well as to carry out the research to suggest mechanism for integrated treatment pathway. Medicinal plant component may be a central sector scheme as States have not seen the appetite to be able to provide matching funds and it needs timely action on field for sowing during specific months of the year.

Scheme/Program[99]	Performance	Relevance	Rationalisation		Remark
Tertiary Care Programs	🟡	🟢	▶	⬌	More commitment from states desired to make the facilities operational at the earliest. Fund flexibility under the tertiary care program needs to be improved. The apex level institutes should provide capacity building and referral support to secondary level hospitals adopting a formal mechanism for referral compliance and in-service program should be linked to the colleges generating health workforce.
National Mental Health Program	🟡	🟢	▶	⬌	NMHP has successfully increased the total number of PG seats in the field of mental health but has been unable to keep up with the increasing population. The ratio of psychiatrists to population decreased from 2014 to 2017. NMHP should be continued to cater to the increasing demand of mental health professionals
National Programme for Prevention and Management of Trauma and Burn Injuries	🟡	🟢	▶	⬌	Construction is completed in 131 TCFs, out of which 109 are functional. Out of these, till 2018, 100 TCFs were made functional. Due to fund flow restrictions, during 2019-20 only 9 additional TCFs could be made functional. However, quality trauma and burn care services are being provided in all these TCFs. With the increasing population and traffic accident, the need for such facilities will be increasing.
National Program of Health Care for Elderly	🟡	🟢	▶	⬌	NPHCE caters to the increasing demand for elderly care. NPHCE (tertiary component) has to focus on making the 19 RGCs fully functional.
National Program for Control of Blindness & Visual Impairment	🟢	🟢	▶	⬌	The program has been successful in increasing the number of human resources in the field of blindness control. The program should continue to improve and sustain the progress made so far.
Telemedicine	🟡	🟢	▶	⬌	Telemedicine will see an increase in demand due to COVID-19. Telemedicine needs strengthening in standardisation of services and awareness about the program.
Tobacco Control Program & Drug De-addiction Program	🟢	🟢	▶	⬌	More than 28% adults in India were known to use tobacco in 2016-17. Though tobacco usage in India is decreasing, there a substantial proportion of the population using tobacco and drugs. The scheme is relevant and should continue. IEC and taxation may be used more effectively to dissuade usages of substances harmful for ones' health.
National Program for Prevention and Control of Cancer, Diabetes, CV and Stroke	🟡	🟢	▶	⬌	Most of the tertiary care facilities created are yet to be functional. Increased thrust is required under this program to ensure facilities are made functional at the earliest.
Human Resources for Health and Medical Education	🟡	🟢	▶	⬆	HRH & ME schemes (UG & PG seats, upgradation of District hospital to medical college,) should be continued. Scheme for setting up post enactment of the Allied and Healthcare Professions act. A comprehensive & transparent Human Resource Policy (for recruitment, posting, transfer & retention) should be adopted by all states.

Chapter 8: Conclusion and Recommendations

Scheme/Program[99]	Performance	Relevance	Rationalisation		Remark
District Hospitals - Upgradation of State Govt Medical Colleges (PG seats)	🟡 Satisfactory	🟢 Highly Satisfactory	▶ To be continued	⬆ Increased allocation	Focus on unserved districts is desirable with additional funding
Strengthening of Govt Medical Colleges and Central Govt Health Institutions	🟡 Satisfactory	🟢 Highly Satisfactory	▶ To be continued	⬌ Allocation trend to continue	The scheme aims to create more than 10,000 MBBS seats and has been successful in increasing 2765 MBBS seats in Government medical colleges and more proposals are on the way. Scheme be continued till it achieves the goal of increasing ten thousand MBBS seats.
Establishment of New Medical Colleges (Upgrading District Hospitals)	🟡 Satisfactory	🟢 Highly Satisfactory	▶ To be continued	⬆ Increased allocation	Under different phases, 157 new medical colleges have been established/to be established and 42 are functional. With the completion of this project, India will have more than 700 medical colleges. This scheme boosted the medical education sector especially in underserved areas and GoI should aim to complete this scheme to strengthen the medical education system with increased seats. Private sector participation may also be explored, and efforts made to increase the pool of teaching faculties for existing and new medical colleges
Upgradation/ strengthening of Nursing Services (ANM/GNM)	🟡 Satisfactory	🟢 Highly Satisfactory	▶ To be continued	⬌ Allocation trend to continue	With the convergence of GNM curriculum and B. Sc Nursing course, there is no such need of separate GNM schools and given the growth of HWCs, more ANM schools need to be established
Setting up of State Institutions of Para-Medical Sciences and Setting up of Colleges of Para-medical Education	🟡 Satisfactory	🟢 Highly Satisfactory	▶ Continued with modifications	⬌ Allocation trend to continue	Due to absence of a central regulatory council, there are no formal records of para-medical professionals. There is a need to have such para-medical council at the centre to regulate the sub-sector for greater good. The scheme may be re-launched after taking appropriate steps towards implementation and monitoring.

▶ To be continued	▶ Continued with modifications	🟢 Highly Satisfactory	🟡 Satisfactory	⬆ Increased allocation	⬌ Allocation trend to continue

Appendices

Appendices

Introduction

The Novel Corona Virus (COVID-19) originating in Wuhan, China expanded its circle to various parts of the globe and finally spreading its routes to India in late January with its first reported case in Kerala. With extensive screening, testing and tracking, NHM has played a vital role in managing the epidemics. This section discusses NHM's contribution w.r.t system capacity ramp up, testing strategies, infrastructure, infection control, community processes, insurance for healthcare workers and other related aspects.

Health Systems Capacity

- NHM supported state level preparedness under the leadership of Prime Minister, Health Minister and allied Ministry officials at the Central level and Chief Ministers, Principal Secretaries and Mission Directors at State level. Regular reviews were being conducted using video conferencing with the States. And feedback was taken regularly from the States on the strategies proposed.

- NHM has been contributing in the States towards system capacity ramp up for handling emergency services. In any emergency/unforeseen situation, the States have been relying on NHM because of its flexibility. A large percentage of the human resources (especially the one who are leading the COVID -19 management from the front in the districts, blocks, facilities e.g. hospital administrator/quality manager) in most states are been from NHM (EY Analysis: KII, 2020).

- The epidemiologist vacant positions when brought to notice of the Central Ministry, even amidst the pressing pandemic times action was taken within a month by the NHM and around 91% vacancies were filled. Flexibility for recruitment procedures, numbers of human resources, salary and related norms were relaxed for the COVID emergency so that any gap in the human resources could be bridged at the earliest.

- SOPs were updated from time to time as recommended by the experts and including UN agencies on travel advisory, specimen collection, packaging and transportation, contact tracing, etc. We need to acknowledge that the world is facing a pandemic which is unprecedented. The knowledge about the disease is also evolving continuously and India managed to remain flexible and responded to the ever changing scenario.

- In order to scale up the infrastructure with respect to isolation and quarantine facilities, dedicated COVID hospitals, ICU beds & equipment, ventilators, PPEs, etc. in the States, NHM's fund flexibility principles enabled use for the said purpose. Also, flexibility in the procurement rules through broad application of the emergency procurement rules for the States helped ease the process with speedy procurements.

- Quick information access and status on availability of ICUs, isolation beds, oxygen support was provided through NHM mechanism. NHM has further helped in establishing standardized formats for data collection for effective reporting and planning. Facility assessment and constant feedback to the States was given to improve and accelerate setting up of infrastructure to meet surge capacity.

- An orientation on assessment for operationalizing Dedicated COVID Hospitals (DCH) and Dedicated COVID Health Centres (DCHC) was conducted for all the development partners, regional directors and other stakeholders who are there in the states for supporting them.

- A detailed state wise analysis and support for assessing need of oxygen, both for ventilatory and non-ventilatory beds along with the process of filling the gaps is

continuously being done under NHM for all states. Supportive supervisory visits to COVID designated health facilities by the qualified NQAS assessors were arranged under the NHM for supporting the states. This has helped the states in augmenting the capacity of their hospitals both for ventilatory and non-ventilatory beds.

- NHM supported issue of guidelines on transporting COVID suspect and confirmed cases along with infection prevention protocols for ambulances during and after transport.

- Additional funds of Rs 3,000 Crore have been released under the COVID Package to State/UTs, for strengthening of existing health facilities as COVID dedicated hospitals, dedicated COVID health centers and dedicated COVID care centers. Personal Protection Equipment (PPE), N95 masks and ventilators, testing kits and drugs for treatment have also been procured centrally.

- The Communication & IEC strategy includes use of print materials (travel advisory, spread and prevention of disease, OPD display, home isolation), telephone and SMS, radio advertisements etc. Ministry of AYUSH has also displayed at various platforms materials relating to immunity boosting measures for self-care. IEC activities around Arogya Setu application has been actively taken up in areas like information privacy etc.

- The suboptimal primary healthcare infrastructure in metros/urban settings have posed one of the biggest challenge in the fight against COVID. Hence, strategies like new component of urban HWC below PHC were suggested to be incorporated involving both clinical services and outreach activities for public health. Also, location for setting up of UHWC will include areas near the urban poor population like slum pockets. Different strategies were adopted by States in urban areas under NUHM such as a) door to door surveillance in Karnataka, Delhi and UPHC and; b) urban dispensaries acting as voluntarily sample collection centre under NHM Assam (EY Analysis: KII, 2020).

Testing Strategies

Detailed guidelines, protocols and advisory for quarantine, isolation, testing, treatment, disease containment, decontamination, social distancing and surveillance has been formulated by the Ministry of Health and Family Welfare (MoHFW) with support from ICMR, IDSP, NCDC, etc.

The 3T strategic planning of testing, tracking and treating has been adopted for containing the disease spread. Diagnostics laboratories network and testing capacity has been expanded and the existing multi-disease testing platforms under National TB Elimination Programme were leveraged. The testing strategies for COVID-19 includes Real Time RT-PCR, TrueNat and CBNAAT and also recent additional tests like Rapid Point-of-Care (PoC) Antigen Detection Test, Standard Q COVID-19 Ag detection test (ICMR, 2020). NHM has also supported through the existing biomedical equipment maintenance program.

Infection Control

'Kayakalp award scheme' under the NHM had prepared the Public Health Facilities in States & UTs by strengthening upkeep of health facilities, infection control practices, biomedical waste, and general waste including liquid waste management. Based on the changing evidences, Central Pollution Control Board (CPCB) has been revising guidelines for management of healthcare waste for highly infectious COVID patients. Implementation these guidelines have been supported under the NHM in term of additional resource allocation and capacity building under the NHM, so that community and healthcare workforce remain safe.

Appendices

Implementation of ISQua (International Society for Quality in Healthcare) accredited standards at district hospitals and lower level health facilities under the NHM has brought about change in culture in term of adherence to clinical care protocols and measurement of quality of care, which became critical in adequacy of response of the health system to COVID in India and better clinical outcome. On ground, field preparedness verification was initiated under NHM through National Quality Assurance Institutional arrangement involving ~520 external assessors. The program gave onsite support to various states and facilities in terms of monitoring key performing indicators (EY Analysis: KII, 2020).

Community Processes

ASHAs and other frontline workers have played a major role in contact tracing, community surveillance and raising awareness in the community on COVID 19. For instance, in Kerala, besides many other successful factors, active involvement of ASHAs have been an important factor in COVID management with support in home visits, quarantine and isolation. Tamil Nadu on the other hand had to rely on ANMs and SHG members (EY Analysis: KII, 2020).

Insurance

Under Pradhan Mantri Garib Kalyan Package, Insurance Scheme was announced for Health Workers Fighting COVID-19 covering accidental death on account of COVID'19 related duty with 50 Lakh insurance amount. The entire amount of premium for this Scheme is borne by the MoHFW. The Scheme covers a) public healthcare providers including community health workers; b) private hospital staff and retired, volunteers, local bodies, outsourced staff, daily wage staff etc. appointed for COVID responsibilities (Scheme guidelines, Ministry of Health and Family Welfare, 2020). The claims are being speedily settled as an incentive to the frontline workers (EY Analysis: KII, 2020).

Funding

Flexible funding mechanism under NHM has been a best practice.

- The funds disbursal management has been in 2-3 phases. Firstly, in March, 2020, available funds under NHM were directed for the purpose of COVID management with flexibility to utilize funds from any of the flexipool. For meeting the further requirements, the next phase included additional budget from Government of India and loans from multilateral organizations like, World Bank, ADB, etc. as arranged by the Department of Expenditure and Ministry of Finance.
- The quantum of funds allocated was on the basis of gravity of the situation in the States; States with more number of reported cases were allocated more funds. Utilization of funds has been 100% in majority of the States.
- The PIP for approvals due to emergency was also relaxed. The States were not required to send details to the Central Ministry, and unprecedently could take approval from their Executive committee of the State Health Society by holding a meeting..
- MoHFW has functioned as one organization and there has been good integration and seamless flow of resources among the various implementation agencies (National Health Mission, Central Procurement Division, , Dept. of Health Research/ICMR, National Centre for Disease Control) as per the evolving emergent situation.
- NHM has been the mechanism through which the funds are distributed to various National and State agencies ..

- The provision of untied funds was available at facility and RKS level under NHM, however, it was not available at the district level. Under the COVID funds, provision of untied funds has been made at district level which will remain under the District Magistrate who is the chairperson of the District Health Society in NHM.

Role of Private Sector

States designed a mechanism for appropriate private sector engagement using the Epidemics Act, Clinical Establishment Act/Nursing Homes Act. Three broad models developed were:

1. Dedicated COVID hospital, COVID care hospitals- Many states have designated private hospitals/facilities for COVID like Tamil Nadu, Rajasthan, Maharashtra. The States would bear the expense cost but within the pre-defined norms;
2. Capping and fixing the mutually agreed prices for services (testing and treatment) in private sector-Maharashtra, Telangana, Tamil Nadu, Karnataka and others;
3. Publicly financed insurance schemes- PMJAY and State financed Schemes in Andhra Pradesh, Telangana, Maharashtra. The beneficiaries could get treatment in private hospitals on rates fixed by the Government under the insurance schemes.

Multi-Sectoral Convergence

The COVID response in its early weeks was a MoHFW, Department of Health Research and NCDC driven approach. Thereafter, MHA constituted 11 empowered committees involving various Ministries/Departments like Pharmaceuticals, MEITY, Information and Broadcasting, MSME etc. (Ministry of Home Affairs, 2020). Ministry of Textiles has also been actively involved in manufacturing of masks.

Maintaining Continuity of Services

Non-covid related essential clinical services were also recouped majorly in all states facilitated by Ministry guidelines for essential services (both generic one and specific ones on RMNCH+A, HIV AIDS, NVBDCP, viral hepatitis, chronic diseases etc).

For initial few months, it was difficult for EAG States and a few others to maintain continuity of services w.r.t non-covid related services. However, with better COVID handling and through constant video conferencing, essential services were flagged and continued. OPD/IPD services also resumed as the situation improved. Tele-consultation services were also explored by states with the recent Telemedicine Practice Guidelines in March 2020.

HWCs play a key role in ensuring delivery of non COVID essential services.

Closing remarks

With the available primary health infrastructure, NHM has played a pivotal role in responding to the situation. Flexibility under NHM has led to a quick response in ramping up of the required infrastructure and other resources. The primary level urban health infrastructure was sub-optimal to address the urban setting requirements, which is being taken up by NHM on priority basis.

Appendices

REESI+E Mapping	Key Evaluation Objectives
Relevance	What is the relevance of the scheme in current context?
	To what extent the scheme's objectives are still valid?
Effectiveness	Was the scheme effective in delivering desired/planned results?
	How effective has the project been in responding to the needs of the beneficiaries and what results were achieved?
	How effective were the strategies and tools used in implementations of the scheme?
Efficiency	How well were the resources used to achieve the scheme outcome?
	Were the allocated funds utilized in an optimal manner?
Sustainability	Can the scheme sustain after the government support ceases/is reduced/implementation model is changed?
	What are the key factors/risks (political, economic, institutional, technical, social, environmental, and financial) which can influence the economic life of the scheme?
Impact	Does the scheme contribute to reaching higher level development objectives (over-all objectives/ national priorities)?
	What is the impact or effect of the intervention in proportion to the overall situation of the target group or those affected?
	Have efforts been undertaken to scale up and replicate successful features of the scheme?
Equity	What is the contribution of the scheme to the reduction of inequality of opportunity and income?
	What is the extent to which government services are being made available to and accessed by different social groups?
	Has the principle of equity been integrated into the scheme at the design stage, as well as whether it is playing out in implementation?

Appendix 3: Health Outcome[100] Rural-Urban Divide – F-Test Analysis

TFR	Total	Rural	Urban
Andhra Pradesh	1.6	1.7	1.5
Assam	2.2	2.4	1.6
Bihar	3.2	3.3	2.5
Chhattisgarh	2.4	2.6	1.8
Delhi	1.5	1.5	1.5
Gujarat	2.1	2.4	1.8
Haryana	2.2	2.4	1.9
Himachal Pradesh	1.6	1.7	1.1
Jammu & Kashmir	1.6	1.8	1.2
Jharkhand	2.5	2.7	1.9
Karnataka	1.7	1.8	1.6
Kerala	1.7	1.7	1.7
Madhya Pradesh	2.7	3	2.1
Maharashtra	1.7	1.8	1.5
Odisha	1.9	2	1.3
Punjab	1.6	1.7	1.5
Rajasthan	2.5	2.7	2.2
Tamil Nadu	1.6	1.6	1.6
Telangana	1.6	1.7	1.5
Uttar Pradesh	2.9	3.1	2.4
Uttarakhand	1.8	1.8	1.8
West Bengal	1.5	1.7	1.2

F-Test Two-Sample for Variances - TFR

	Variable 1	Variable 2
Mean	2.140909	1.690909
Variance	0.304437	0.138009
Observations	22	22
df	21	21
F	2.205928	
P(F<=f) one-tail	0.038446	
F Critical one-tail	2.084189	

IMR	Total	Rural	Urban
Andhra Pradesh	29	33	21
Assam	41	44	20
Bihar	32	32	30
Chhattisgarh	41	42	35
Delhi	13	8	13
Gujarat	28	33	20
Haryana	30	33	25
Himachal Pradesh	19	20	14
Jammu & Kashmir	22	23	20
Jharkhand	30	31	26
Karnataka	23	25	20
Kerala	7	9	5
Madhya Pradesh	48	52	36
Maharashtra	19	24	14
Odisha	40	41	31
Punjab	20	21	19
Rajasthan	37	41	26
Tamil Nadu	15	18	12
Telangana	27	30	21
Uttar Pradesh	43	46	35
Uttarakhand	31	31	29
West Bengal	22	22	20

F-Test Two-Sample for Variances - IMR

	Variable 1	Variable 2
Mean	29.95455	22.36364
Variance	132.3312	66.4329
Observations	22	22
df	21	21
F	1.991952	
P(F<=f) one-tail	0.061121	
F Critical one-tail	2.084189	

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[100] From SRS Report 2018

Appendices

NMR	Total	Rural	Urban
Andhra Pradesh	21	25	10
Assam	21	22	12
Bihar	25	26	20
Chhattisgarh	29	30	22
Delhi	10	8	10
Gujarat	19	24	11
Haryana	22	24	16
Himachal Pradesh	13	13	9
Jammu & Kashmir	17	18	14
Jharkhand	21	22	14
Karnataka	16	20	10
Kerala	5	6	4
Madhya Pradesh	35	38	23
Maharashtra	13	18	8
Odisha	31	33	22
Punjab	13	13	11
Rajasthan	26	29	15
Tamil Nadu	10	14	6
Telangana	19	21	14
Uttar Pradesh	32	34	21
Uttarakhand	22	23	21
West Bengal	16	17	12

F-Test Two-Sample for Variances - NMR		
	Variable 1	*Variable 2*
Mean	21.72727	13.86364
Variance	66.9697	30.79004
Observations	22	22
df	21	21
F	2.175044	
P(F<=f) one-tail	0.041085	
F Critical one-tail	2.084189	

Percentage of Neo-natal deaths to Infant deaths	Total	Urban	Rural
Andhra Pradesh	70.8	46	77.5
Assam	51.4	60.3	51
Bihar	78.7	66.3	80.1
Chhattisgarh	70.1	63.8	71.3
Delhi	74.8	74.4	100
Gujarat	69.2	55.2	74.7
Haryana	72.5	65.9	75.1
Himachal Pradesh	68.4	63.4	68.6
Jammu & Kashmir	75.4	71.7	76.3
Jharkhand	68	52.6	71.2
Karnataka	70.6	49.9	80.2
Kerala	73.1	79.5	69.5
Madhya Pradesh	71.8	63.1	73.4
Maharashtra	68.4	55.6	74.2
Odisha	79.4	72.5	80.2
Punjab	61.2	59.2	62.4
Rajasthan	70.6	59.4	72.8
Tamil Nadu	65.3	50.8	76.2
Telangana	69.7	68.9	70.1
Uttar Pradesh	73.2	60.9	75.8
Uttarakhand	73.2	73.1	73.3
West Bengal	72.3	59.6	75.8

F-Test Two-Sample for Variances - Percentage of Neo-natal deaths to Infant deaths		
	Variable 1	*Variable 2*
Mean	62.36818	74.07727
Variance	76.19846	74.57898
Observations	22	22
df	21	21
F	1.021715	
P(F<=f) one-tail	0.480603	
F Critical one-tail	2.084189	

U5MR	Total	Rural	Urban
Andhra Pradesh	33	37	24
Assam	47	50	23
Bihar	37	37	32
Chhattisgarh	45	47	38
Delhi	19	17	19
Gujarat	31	37	21
Haryana	36	39	30
Himachal Pradesh	23	23	17
Jammu & Kashmir	23	24	20
Jharkhand	34	36	29
Karnataka	28	30	24
Kerala	10	11	9
Madhya Pradesh	56	60	39
Maharashtra	22	27	15
Odisha	44	45	35
Punjab	23	23	22
Rajasthan	40	43	31
Tamil Nadu	17	22	14
Telangana	30	35	23
Uttar Pradesh	47	49	38
Uttarakhand	33	33	33
West Bengal	26	27	25

F-Test Two-Sample for Variances – U5MR		
	Variable 1	*Variable 2*
Mean	34.18182	25.5
Variance	143.013	69.30952
Observations	22	22
df	21	21
F	2.063396	
P(F<=f) one-tail	0.052309	
F Critical one-tail	2.084189	

Appendices

Evolution of Health Sector

Focus on improving equity and coverage (1947-1960)

The health activities of the state before the mechanism of policy-advocacy was governed through five-year plans and recommendations of the various committees. The five-year plans laid down schemes with specific targets to be fulfilled. Each plan had several schemes and based on the efficiency and yearly results subsequent schemes were added or dropped from the plan (Nichter and Sickle, 2016).

Bhore Committee (1946) was one such first Committee constituted just before independence to survey the then existing health conditions in India and make recommendations for future development. The major recommendations of the committee included the need for social orientation of medical practice, increased public participation and parallel development of environmental health in the country (Devadasan, Ghosh, & Sundararaman, 2014). The Committee also suggested a blueprint for primary health centres (PHCs) and formation of village health committees to obtain support in development of health programs (Report of the Health Survey and Development Committee, 1946).

The major focus in 1950s and 60s in the health sector was to manage epidemics. Mass campaigns were initiated for awareness and eradication of various diseases. National Malaria Eradication Program (NMEP) was started in 1958 since malaria was considered a major international threat. In 2003 the program was converted to National Vector Borne Disease Control Program and includes monitoring of all vector borne diseases like Malaria, Filaria, Dengue, J.E. Plague, Chandipura, Kala Azar etc (Benelli & Beier, 2017).

Mudaliar Committee (1959) was set up to assess the field of public health and medical relief after the first two five-year plans and to draw future path of development of health services. The key recommendations included strengthening of district hospitals, upgradation and strengthening of PHCs, extension of University Grant Commission to medical education, institution of National Programs for malaria, small pox, cholera, leprosy, tuberculosis and filariasis (Report of Health Survey and Planning Committee).

Primary Health Approach (1960-1980)

The third five-year plan launched in 1961 discussed the issues of health institutions and health personnel in the sector. The outlays were proposed for medical colleges, establishments for preventive and social medicine and schemes for encouraging training and research (Nichter & Sickle, 2016).

National Tuberculosis Program (NTP) was formulated in 1962 and subsequently implemented in phased manner. With establishment of Association of India, the anti-TB movement gained momentum in India, leading to the introduction of mass-produced low-cost BCG vaccination. The deficiencies identified in NTP were addressed and Revised National Tuberculosis Program (RNTCP) was developed in 1997. RNTCP was renamed as National Tuberculosis Elimination Program in January 2020.

In 1963, Chadha Committee was constituted to investigate the requirements for planning and functioning of PHCs and performance of National Malaria Eradication Program. The recommendations included strengthening of rural health services, vigilance through medical

institutions and developing multipurpose domiciliary health services for all health programs (Sharma, Raman, Kohli, & Kumar, 2016).

With the aim of providing inputs for the third five-year plan, the committees were established and constituted to focus on health infrastructure and health personnel in the country. The committees gave serious consideration for suggesting a solution to insufficient staffing issue for rural and peri-urban areas (Maiti, Bhatia, Padhy, & Hota, 2015). Subsequently, in 1965 Mukerjee committee was commissioned to review staffing pattern and financial provision under Family Planning Program. The aim was to review the changes required in the financial provisions and staffing pattern because of advent of intrauterine contraceptive device (IUCD) in the Family Planning Program (Rao & Mazumdar, 2017).

Jain Committee (1966) was constituted to study medical care services. The working of different hospitals was studied in the country to improve the standards of medical care. The key suggestions were to provide specialist medical care at district hospital and improving the capacity and coverage of PHCs to provide maternity facilities (Lo, 2015). Further, Jungalwalla Committee (1967) was commissioned with the aim to study various problems related to integration of health services, abolition of private practice by doctors in government services, and the service conditions of doctors (Jungalwalla & Bhatia, 1967).

The fourth five-year plan was developed on the lines of the third-year plan and importance of PHCs was stressed to consolidate the maintenance phase of the communicable disease program. Population growth was considered the central problem and attained government's focus. On recommendations of Central Family Planning Council, Kartar Singh Committee (1973) was constituted to study the issues of integrated services, training and mobile services. The main recommendations included Multipurpose Health Workers (MPHW) for the delivery of health, family planning and nutrition services to the communities, at least one female health worker (FHW)/auxiliary nurse midwife (ANM) to be made available for a population of 10,000-12,0000, each PHC to have sub-centres spread over its area and training for all workers engaged in the field of health, family planning and nutrition (Rao, 2017).

The fifth five-year plan recognized that though there were advances with respect to the infant mortality rate decreasing and life expectancy increasing, the number of medical institutions, functionaries, hospital beds and other health facilities remained inadequate in rural areas (Planning Commission, 1976). Minimum Needs Program (MNP) was introduced to provide basic social and economic facilities for development of the underserved community (Saxena, 2018).

Shrivastava Committee (1975) was then commissioned to deliberate on medical education and manpower. The major course of action recommended was: (a) organization of basic health services such as nutrition, family planning and health education and training personnel for the same; (b) Creation of referral services by developing proper linkages between PHC, service centres and higher level referral; (c) Creation of administrative and financial machinery to reorganize medical and health education in accordance with the objectives of NHS (Ministry of Health and Family Planning, 1975).

The recommendations of the Shrivastava Committee were adopted in 1977. Introduction of part-time Community Health Workers, selected by the village and working on promotive and curative healthcare, was seen as a major health innovation. These CHWs were trained for three months in both allopathy and indigenous medicine systems (Perry, Zulliger, & Rogers, Annual Review of Public Health).

Appendices

Alma Ata Declaration in 1978 led to the launch of "Health for all by 2000" ratified by 137 countries including India. The Declaration advocated for first contact services and basic medical care for all within the integrated health services. The responsibility as per this declaration for comprehensive primary health care further led to the formulation of National Health Policy in 1983.

Global Development Priorities and Economic Liberalization (1980-2000)

The sixth five-year plan was heavily influenced by the Alma Ata Declaration. The realization was that the existing health-services model was still depriving the rural-class from the benefits of the good health and medical services (ICMR-ICSSR, 1980). Also, focus was established on horizontal and vertical linkages between the interrelated programs like water supply, sanitation, hygiene, nutrition, education and family planning. Until the 1980s, the influence in the sector was primarily through advocacy and ideology and hence limited penetration was seen. With the advent of globalization and liberalization, post eighties, the money flow increased mainly through soft loans (Baru & Mohan, 2018).

National Health Policy shifted the healthcare development approach from committee to policy based in 1983. The major goal of the policy was in accordance with the Directive Principles of the Constitution of India in providing universal and all-inclusive primary health services. This was the first time after Bhore Committee that universal health care was being addressed (Allsop, 2018). The salient features of the 1983 policy included a)emphasis on a preventive, promotive and rehabilitative primary health care approach; b) decentralised system of health care including provisions for community participation; c) expansion of the private curative sector which would help reduce the government's burden; d) targets for achievement that were primarily demographic in nature (Balarajan, Selvaraj, & Subramanian, 2011).

Medical Education and Review Committee (1983) set up by MoHFW, Government of India recommended for undergraduate (MBBS) medical students to be posted in general practice outpatient units to be exposed to multidimensional nature of health problems and their origins. The committee also suggested that this practice should be further developed so that an increasing number of students pursue higher study in this area.

The seventh five-year plan, in line with NHP advice, recommended development of specialties and super-specialties that need to be pursued with proper focus on regional distribution. An expert committee for Health Manpower Planning, Production and Management- Bajaj Committee (1986) was constituted with recommendations including formulation of National Medical & Health Education Policy, establishment of health manpower cells at centres and in the states, carrying out health manpower survey, education at 10+2 levels for health related fields for generation of quality allied healthcare personnel and establishment of Health Science Universities in various states and union territories.

Focus on quality improvement (2000-2010)

National Population Policy, 2000 provided for an overarching policy framework for child health and family planning goals. The unaddressed needs such as contraceptives, health infrastructure, health personnel and integrated services of reproductive and child health services were addressed. With support of voluntary and NGO organizations the policy aimed for delivery at village level for basic RCH services. Long-term policy objective was to achieve a stable population by 2045 with consistent levels of sustainable economic growth, social development and environmental protection (Chandra, 2000).

Attainment of health indices was improving; however, the spread was uneven with rural-urban divide and a wide gap between high and low performing states. The tenth five-year plan announced the draft National Health Policy in 2001 and invited feedback from the public. National Health Policy, 2002 aimed to reduce this inequality and include disadvantaged sections of society. The policy aimed at comprehensive primary health services linked with health education. The concern for regulating the private health sector through statutory licensing and monitoring of minimum standards by creating a regulatory mechanism was also addressed by the policy.

National Rural Health Mission (NRHM) was launched in 2005 to undertake a shift in the public health system and to provide accessible, affordable and accountable primary healthcare services to poor households in remote parts of rural India (Samal, A review on mainstreaming of AYUSH and revitalization of local health traditions under NRHM , 2015). Major objectives of NRHM included a) to raise public spending on health; b) to provide access to primary healthcare services for the rural poor, with universal access for women and children; c) to achieve a concomitant reduction in IMR / MMR / TFR; d) to prevent and control communicable and non-communicable diseases; and e) to revitalize local health traditions (Fathima et al., 2015).

Curative, Preventive and Promotive Healthcare Regime (2010- Present)

Sustainable Development Goals (SDGs) are an umbrella set of 17 goals and 169 targets to steer the development action for all by 2013. The SDGs evolved from the Millennium Development Goals (MDGs) for 2015. MDGs with 8 goals and 18 quantifiable targets, were the first global attempt on setting goals for key challenges like extreme poverty, reducing child mortality rates, fighting epidemics like AIDS and developing global partnership for development (Liu, et al., 2016). However, the benefit of growth was mixed and not equally distributed and MDGs saw its own set of challenges (Kanayo, 2014). As a result, in 2015, SDGs came into existence to combat the MDGs challenges with a more comprehensive and universal approach (Silver and Singer, 2014). A more detailed discussion on SDGs and Goal 3: Good Health and Well-being has been elaborated in the following chapters.

National Health Mission (NHM) in 2013 integrated NRHM and National Urban Health Mission (NUHM). The major objectives of the mission are: a) Reduction in Infant Mortality Rate (IMR) and Maternal Mortality Rate (MMR); b) Population stabilization, gender and demographic balance; c) Achieve Universal access to public health services like women's health, child health, water, sanitation & hygiene, immunization, and nutrition; d) Promotion of healthy life styles; e) Access to integrated comprehensive primary healthcare and f) Revitalization of local health traditions and mainstream AYUSH (Samal, Role of AYUSH workforce, therapeutics, and principles in health care delivery with special reference to National Rural Health Mission , 2015). Some of the initiatives of the mission are: community health workers like Accredited Social Health Activists, Patient Welfare Committee, Janani Suraksha Yojana (JSY), Janani Shishu Suraksha Karyakram (JSSK), National Mobile Medical Units (NMMUs) and others (Sharma A. , 2014).

The Ministry of Ayurveda, Yoga & Naturopathy, Unani, Siddha, Sowa Rigpa and Homoeopathy (AYUSH) was constituted in 2014 with considerable focus to alternative (and esp. indigenous) forms of medicine under the healthcare sector. Various committees like Bhore, Mudaliar and Shrivastava Committee emphasized on improvement of traditional systems of medicine in India (Rudra, Kalra, & Joe, 2017). The ministry runs multiple health programs such as Homeopathy for Healthy Child primarily aiming at the rural population. National AYUSH Mission was launched in 2014 to promote AYUSH medical systems through cost effective AYUSH services, strengthening of

Appendices

educational systems, facilitate the enforcement of quality control of AYUSH drugs and sustainable availability of AYUSH raw materials.

With the changing health priorities, such as growing burden on account of non-communicable diseases and some infectious diseases and health care costs, a new health policy responsive to these contextual changes was required. Hence, National Health Policy, 2017 envisaged its goal for attainment of highest possible level of health and well-being for all ages without financial burdens as a consequence. It aims at reaching universal health coverage (UHC) and delivering quality health services to all at affordable costs (Duran, Kutzin, & Menabde, 2014).

Ayushman Bharat was launched as a centrally sponsored scheme in 2018 and has two components-1) Health and Wellness Centres (HWCs); 2) Pradhan Mantri Jan Arogya Yojana (PM-JAY). The scheme aims at making interventions in primary, secondary and tertiary care systems, covering preventive, promotive and ambulatory care, to address healthcare holistically (Lahariya, 2018). It subsumes multiple schemes including Rashtriya Swasthya Bima Yojana, Senior citizen health Insurance Scheme (SCHIS), Central Government Health Scheme (CGHS), Employees' State Insurance Scheme (ESIS), etc (Bakshi, Sharma, & Kumar, 2018)

Institutional Structure of Public Health Sector in India

The nature of health system in India is pluralistic with existence of multiple actors performing diverse roles and functions (McPake & Hanson, 2016). Ministry of Health and Family Welfare looks after the health policy in India with a strategic vision to strengthen the public health sector of the country (Samal and Dehury , 2016). This section outlines the major forces driving the public health sector in India at various levels. Also, the role of allied ministries and departments playing an important role in the health sector have also been discussed.

National Level

Ministry of Health and Family Welfare is entrusted with formulation and implementation of health policy in India (MoHFW) (Samal, 2015). The Ministry of Health and Family Welfare implements its programs and provides services through different executing and regulatory authorities (Sheikh, Ranson & Gilson, 2014). MoHFW comprises of the following two Departments a) Department of Health and Family Welfare; b) Department of Health Research, each department headed by a Secretary of Government of India. These departments take required initiatives and steps to implement Government policies and programs to achieve the stated health goals and objectives (Sarwal, 2015).

The Department of Health and Family Welfare deals with health care and family welfare, including awareness campaigns, reproductive and child healthcare, immunisation campaigns, preventive medicine, and public health (Ramadass, Gupta, & Nongkynrih, 2017). Bodies under the administrative control of this department are[101]:

- National AIDS Control Organization (NACO) supports and provides aid to HIV/AIDS control program in India through 35 HIV/AIDS Prevention and Control Societies. It is the nodal organisation for formulation of policy and implementation of programs for prevention and control of HIV/AIDS in India (Paranjape & Challacombe, 2016)

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[101]https://mohfw.gov.in/about-us/departments/departments-health-and-family-welfare.

- Central Mental Health Authority established to register all Central mental health establishments and develop quality and service provision norms for different types of mental health establishment (Murthy R. , 2014)

- National Health Systems Resource Centre, a technical support institute with National Health Mission, assists in policy and strategy development in the provision and mobilization of technical assistance to the states and in capacity building for the Ministry of Health

- National Health Authority (NHA) is the apex body responsible for implementing India's flagship public health insurance/assurance scheme 'Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (PMJAY)'. It is an attached body of the MoHFW with functional autonomy and responsibility for PMJAY relating to guidelines, compliances and protocols and strategic purchasing of healthcare services (Kumar R. , 2019)

- Central Council of Health and Family Welfare established under Article 263 of the Constitution of India, the Council supports and advices the MoHFW on policy formulation (Murthy R. , 2014)

- National Medical Commission is a statutory body for establishing uniform and high standards of medical education in India. Earlier, Medical Council of India was responsible for the same (Minocha, 2017)

- Dental Council of India regulates the profession of Dentistry and Dental Education at undergraduate, post-graduate and super specialization levels throughout India (Mohanty, Rajesh, & Aruna, 2013)

- Indian Nursing Council is a national regulatory body for nurses and nurse education in India (Walton-Roberts, Bhutani, & Kaur, 2017)

- Pharmacy Council of India is responsible for regulating pharmacy profession in India. The Pharmacy Council was constituted for registering and maintaining pharmacists in various states of India.

- Indian Pharmacopoeia Commission (IPC) is an autonomous institution of the MoHFW for setting standards for drugs, pharmaceuticals and healthcare devices and technologies in India. IPC plays a pivotal role in enhancing the quality and safety of medicines by adding new and updating existing monographs in the form of Indian Pharmacopoeia (IP) on a regular interval.

The Department of Health Research of MoHFW focuses on the health, clinical and biomedical research. The studies involve basic, applied and operational research around diseases and its conditions, their detection, cause and strategies for health promotion, protection and rehabilitation (Dandona, Katoch, & Dandona, 2011).

Directorate General of Health Services (DGHS) is an attached organization of the MoHFW with repository of technical knowledge concerning Public Health, Medical Education and Health Care. The Directorate coordinates with the health Directorates of all states and UTs for implementation of National Programs (Samal, 2015). DGHS also oversees the functioning of all Central Government Hospitals and their management (Singla, et al., 2014).

The Central Drugs Standard Control Organization (CDSCO) under Directorate General of Health Services is a national regulatory authority for Indian pharmaceutical and medical devices (Dalal, Ganguly, & Alpa, 2016). National Pharmaceutical Pricing Authority (NPPA) is the regulatory body that regulates and controls the prices of pharmaceutical drugs in India. Besides pricing, NPPA also

Appendices

deals with the legal matters arising out of drugs, drugs availability and export and import of drugs (Ahmad, Khan, & Patel, 2015).

NITI Aayog is a policy think tank of GoI aiming to achieve the SDGs by involving State Governments in the economic policy-making process (Sengupta, 2015). NITI Aayog and MoHFW together purpose to achieve the SDGs including Goal 3 related to ensuring healthy lives and promoting well-being for all at all ages (Male, 2018).

Ministry of Ayurveda, Yoga & Naturopathy, Unani, Siddha, Sowa Rigpa and Homoeopathy (AYUSH) is another government body in India purposed with developing, education and research in the field of alternative medicine (Chandra & Patwardhan, 2018). The NHP 2017, has strongly advocated for mainstreaming the traditional systems of medicines and emphasized the need of integrating AYUSH in the NHM, research and education (Shankar & Patwardhan, 2017).

State and District Level

Each State has a Directorate of Health Services (DHS) that has an important role in the provision and administration of health services and in order to raise the quality, extend accountability and deliver the services effectively (Mishra, 2014). The Directorate of Medical Education at state level helps in developing medical and para-medical personnel to cater to the health needs of the State. The department also has a role to play in establishment and maintenance of well-equipped teaching institutions, which are the premier referral centres with state-of-the-art equipment and technology (John, Bavadekar, Hasnain, & Karandikar, 2015).

National Health Mission at the state level is guided by the State Health Mission and State Health Society. They are supported by State Program Management Unit (SPMU), State Health System Resource Centre (SHSRC) and State Institutes for Health and Family Welfare (SIHFW). The District Health Mission and City Health Mission are responsible for implementation and review at their respective administrative levels. They are supported by District Program Management Units (DPMU) which are linked to District Health Knowledge Centre (DHKC), District Training Centre (DTC) and District Health Society (DHS) (Patel, et al., 2015).

Role of Other Allied Ministries and Departments

The institutional structure of health system in India remains incomplete without discussing the role of the allied Ministries, Department and Bodies that play an essential role in strengthening and ensuring sustainable development, universal health coverage and health security and resilience.

The Department of Pharmaceuticals in the Ministry of Chemicals and Fertilizers is one such body that aims at the development of the pharmaceutical sector in the country and regulates pricing and availability of medicines at affordable prices through initiatives like Jan Aushadhi (Mukherjee, 2017). Besides this, the department is also involved in research and development to promote domestic manufacturing of medical devices and protection of intellectual property rights relating to the pharmaceutical sector (Banerjee, Chakrabarti, & Das, 2014). Also, Ministry of Tourism, is involved in promoting India as a medical and Health Tourism Destination. The Ministry aims to provide Medical and Health Care at international Standard at comparatively low cost (Dogra and Dogra, 2015). Indian systems of medicines, i.e. Ayurveda, Yoga, Panchakarma, Rejuvenation Therapy, etc. are among the most ancient systems of medical treatment of the world (Medhekar, H.Y., & Hall, 2014).

Additionally, the Ministry of Women and Child Development through Central Technical Committees on health and nutrition looks into Integrated Child Development Services (ICDS) (Jain M. , 2015).

The ministry is also involved in the mid-day meal and Poshan Abhiyan for holistic nourishment and reducing malnutrition from the country (Ministry of Women and Child Development , 2019).

The Central Pollution Control Board under the Ministry of Environment and Forests (MoEF) regulates the provisions relating to Bio-medical waste in any form from medical establishments, forensic laboratories and research labs. In addition to these Ministries, Swachh Bharat Mission under the Department of Drinking Water and Sanitation, Ministry of Jal Shakti and Ministry of Housing and Urban Affairs looks in to achieve universal sanitation coverage and focuses on sanitation and healthy practices for all (Jangra, Majra, & Singh, 2016).

Health Sector Regulations

The fundamental right to life enshrined in Article 21 of the Constitution also extends to the guaranteed protection of one's health (Bandhua Mukti Morcha v. Union of India). The judicial precedents set by the Hon'ble Supreme Court establish that the right to health is an integral part of the right to life enshrined under Article 21 (Consumer Education and Resource Centre v. Union of India; State of Punjab and Others v. Mohinder Singh). As a corollary, the Constitution of India, in Part IV (Directive Principles of State Policy) also imposes a positive duty on the State under Article 47 to raise the level of nutrition and the standard of living, and to improve public health.

"*Public health and sanitation; hospitals and dispensaries*" is listed at Entry No. 6 in List II (State List) of Schedule VII of the Constitution of India. Accordingly, only State Legislatures have the legislative competence to enact laws on the subject. However, Article 252 of the Constitution of India empowers the Parliament to enact laws on any subject included in the State List where the State Legislatures of two or more States have adopted resolutions to the effect that such subject must be regulated by an Act of Parliament in those States. Any State may subsequently adopt the Act so passed by Parliament, by passing a resolution to that effect. Therefore, over the years, the Parliament has enacted several central legislations on public health in order to ensure uniformity of regulation in the Health sector.

This section of the Report endeavours to analyse these central legislations and highlight the key reforms brought about and identify gaps in the regulatory framework, if any.

I. THE NATIONAL MEDICAL COMMISSION ACT, 2019

Key Achievements:

- The Act repeals the Indian Medical Council Act, 1956 and replaces the Medical Council of India with the National Medical Commission.

- The Act attempts to curb perverse practices by having eminent medical personalities who will be appointed for only one term of four years, without further extension. To ensure probity and integrity of the highest order, they will have to declare their assets at the time of being appointed and again while demitting office. The members will also have to declare their professional and commercial engagement or involvement which will be published on the website of the Commission (PIB, 2019).

- In the composition of the National Medical Commission, there will be 10 Vice Chancellors of State Health Universities and 9 elected members of State Medical Councils. Thus, majority of the members would be from the States and only a minority of members will be appointed by the central government thereby, ensuring that the National Medical Commission is representative, inclusive and respecting the federal structure of Indian polity (PIB, 2019).

Appendices

Key Gaps:

- A fee cap may discourage establishment of new private colleges, thereby limiting the expansion of medical education in the country. Further, it may be difficult to enforce a fee cap and medical colleges may continue to charge 'under the table' capitation fees and other periodic fees on various pretexts (NITI Aayog Report, 2016).

- The limited license granted to Community Health Providers, enabling them to independently prescribe primary and preventive medicine may encourage and legitimize quackery in the medical profession (Nishith Desai, 2019).

- Owing to instances of violence against doctors and the property of healthcare establishments, there were demands by doctors and allied practitioners to enact specific laws that specifically dealt with such situations. However, the Act does not delve into this issue (Sapra, Jain, Ghosh, 2019).

- The Act empowers the Central Government to override the National Medical Commission and the Autonomous Boards, by mandating the latter to be bound, in exercise of their powers and discharge of their functions under the Act, by the directions of the Central Government on questions of policy (Section 45).

II.   THE MENTAL HEALTHCARE ACT, 2017

Key Achievements:

- The Act decriminalizes the attempt to suicide and presumes that such action was committed under severe stress and imposes a corollary duty on the government to rehabilitate such person to ensure that there is no recurrence of attempt to suicide (Section 115).

- The Act guarantees free mental health treatment to all persons with mental illness living below the poverty line, whether or not in possession of a below poverty line card, or who are destitute or homeless, in Government run or designated mental health establishments (Section 18(7)).

- The Act enables people with mental illness to declare in advance how they can (or cannot) be treated. In addition, the Act empowers them to choose a person to make treatment decisions on their behalf when they are not in a position to do so (Section 5).

- The Act, by including institutions belonging to other alternative health systems in the definition of mental health establishments, has made uniform regulations in establishing and regulating mental healthcare delivery services. The act regulates both public and private mental health sectors (Math, Basavaraju, Harihara, Gowda, Manjunatha & Kumar, 2019).

- The Act permits the use of ambulance services in the same manner, extent, and quality as provided to persons with physical illness, thereby clearly aiding families, in case of emergency, for shifting the patient to a mental health establishment (Math, Basavaraju, Harihara, Gowda, Manjunatha & Kumar, 2019).

Key Gaps:

- As per the definition of 'mental illness' in the Act, the Act is applicable only to those who have "substantial" impairment in thinking, mood, perception, orientation or memory that grossly impairs judgment, behaviour, capacity to recognize reality, or ability to meet the ordinary demands of life. Thus, the Act does not apply to all mentally disturbed persons (Math, Basavaraju, Harihara, Gowda, Manjunatha & Kumar, 2019).

- The Act is not clear on whether it extends to persons with personality disorders. The Act is also ambiguous concerning substance abuse, referring to "mental conditions associated with the abuse of alcohol and drugs". This could include intoxication, harmful use of substances, substance dependence, withdrawal, drug induced psychosis and brain damage secondary to substance misuse (Duffy & Kelly, 2017).

- The Act advocates the integration of mental health into primary health care. However, the Act mandates all the establishments to take registration for treating persons with mental illness, which may come in the way of integrating mental healthcare into general health care and thus the implementation of NMHP (Rao, Math, Raju, Saha, Jagiwala, Sagar, 2016).

- The Act does not specify the role of the family members in providing care in the hospital environment. There should be emphasis on admissions of persons with mental illness along with their relative (by blood, marriage, or adoption) to encourage family support during an acute crisis which provides moral, emotional, and physical support to the suffering individual (Avasthi, 2010).

III. THE HUMAN IMMUNODEFICIENCY VIRUS AND ACQUIRED IMMUNE DEFICIENCY SYNDROME (PREVENTION AND CONTROL) ACT, 2017

Key Achievements:

- The Act prohibits discrimination against persons with HIV, strengthens the existing program by bringing in legal accountability and establishes formal mechanisms for inquiring into complaints and redressing grievances. (Singh, 2018)

- The Act prohibits hatred and physical violence against HIV positive person or affected groups. (Singh, 2018)

- The Act provides for the appointment of an ombudsman by each state government to inquire into complaints related to the violation of the Act and the provision of health care services. (PRS Legislative Brief, 2017)

- The act provides for the right to HIV prevention, testing, treatment and counselling services of every person in the care and custody of the state. (PRS Legislative Brief, 2017)

IV. BIO MEDICAL WASTE MANAGEMENT RULES, 2016

Key Achievements:

- Compared to the erstwhile Bio Medical Waste Management Rules, 1998, the definition of occupier has been expanded to include various health camps such as vaccination camps, blood donation camps, and surgical camps. This makes the coverage of the rules more comprehensive (Rule 2(f)).

- New obligations have been placed on the occupier so as to prevent leakage of bio-medical waste. The occupiers/healthcare facilities have been obligated to conduct pre-treatment of various laboratory waste and blood bags in accordance with the guidelines of WHO and NACO (Rule 4 (c)).

- Within 2 years of notification of the Rules, plastic bags, gloves, and blood bags have to be phased out to eliminate emissions of dioxins and furans into the environment during their burning (Rule 4 (d)).

- The Rules also call for a bar code system for all bags/containers used for bio-medical waste treatment and disposal (Rule 4 (i)).

- Bedded hospitals/occupiers will get automatic authorization and non-bedded occupiers/ healthcare facilities will get a one-time authorization upon application (Rule 10).

Key Gaps:

- To phase out chlorinated plastic bags, gloves, blood bags and to establish a bar code system for bags/containers the cost will be high and time span for doing this i.e. two years may be too short (Dutt, Kaur Mohi & Chander, 2018).

- Considering the fact that the Rules emphasizes that occupiers and healthcare facilities are to transport their bio-medical waste to the common bio-medical waste treatment facilities, there is a dire need to increase the number of such common facilities since as of January 2018, there were only 198 such facilities which were operational (Dutt, Kaur Mohi & Chander, 2018).

V. CLINICAL ESTABLISHMENTS ACT, 2010

Key Achievements:

- National Council for Clinical Establishment has been set-up to perform the functions of, inter alia, review and appeal of orders, publication of the list of all registered Clinical Establishments and classification of Clinical Establishments into various categories.

- A District Registering Authority has been established to perform the functions of, inter alia, grant and renewal of Clinical Establishment registrations, inspection and inquiry of registered Clinical Establishments, cancelation of registrations and levy of penalties from violators.

- The rates for all procedures and services provided by any Clinical Establishment shall be confined to the range of rates determined and prescribed by the Central Government in consultation with the State Government (Singh, 2015).

- The Act mandates all Clinical Establishments to adhere to the Standard Treatment Guidelines for Clinical Establishments as determined and prescribed by the Central Government or State Government (Section 12).

- The Act is applicable on all Clinical Establishments including all hospitals, maternity homes, nursing homes, dispensaries, clinics, sanatoriums or institutions by whatever name called, that offer services for diagnosis, care or treatment of patients in any recognized system of medicine (Allopathy, Homeopathy, Ayurveda, Unani or Siddha), public or private, except establishments operated by the Armed Forces (CEA Operational Guidelines, 2017).

Key Gaps:

- The National and State Councils include members from non-allopathic systems also (for dealing with non-allopathic establishments) but representation of members from non-allopathic systems has not been provided in the District Registering Authority.

VI. NATIONAL TRUST FOR WELFARE OF PERSONS WITH AUTISM, CEREBRAL PALSY, MENTAL RETARDATION AND MULTIPLE DISABILITIES ACT, 1999

Key Achievements:

- The National Trust has been established to enable persons with disability to live independently through promoting measures for their protection in case of death of their parents.

- The Act evolves procedures for the appointment of trustee and guardian appointment and facilitates equal opportunities in the society for persons with disability.

VII. TRANSPLANTATION OF HUMAN ORGANS AND TISSUES ACT, 1994

Key Achievements:

- The Act has established a framework to facilitate organ/tissue transplants and regulate the process of living and deceased donations by prescribing safeguards at each level to minimize the possibility of organ trade/trafficking (NOTP Operational Guidelines, 2015).

- The National Network division of NOTTO (a statutory body created under the Act) has been established to function as the apex centre for all India activities of coordination and networking for procurement and distribution of organs and tissues (PIB, 2019).

- The recognition of the concept of 'brain-stem death' under the Act has facilitated solid organ transplantations, including liver, heart, lungs, and pancreas, in addition to kidneys (Westphal, 2016). Further, the Act has mandated all hospitals with ICUs to counsel near relatives of persons admitted in ICUs regarding organ/tissue donation after death (Section 3(1A)).

- The Act provides for the appointment of an Appropriate Authority, which is empowered to investigate complaints of breach of any of the provisions of the Act and refer them to a Metropolitan Magistrate or Judicial Magistrate for criminal prosecution (Section 13 r/w 22).

Key Gaps:

- The Act follows the principle of opt-in consent for organ donation, whereby organ retrieval is permissible only where express consent has been given by the deceased person through pledging his organs or by the near relatives if the deceased person had no objection to organ donation after death. In India, where there is a negative attitude towards organ donation, opt-in consent, instead of presumed consent (where organ donation is not permitted only where the deceased person had expressly objected to organ donation) reduces the pool of potential donors (Tikoo, 2017).

- The Act requires consent of the deceased donor as well as of the near relatives before organs/tissues may be retrieved. Where the deceased person had no objection to organ donation or even where the deceased person had expressly pledged to donate his organs after death, if the near relatives withhold consent, organs may not be retrieved (NOTTO FAQs).

- The Act permits living donations only from parents, children, siblings, grandchildren and grandparents (near relatives). In addition, living donations from other than near relatives is permissible only out of affection or attachment or for other special reasons, but not for consideration. Thus, the purely altruistic ground for donation may not be sufficient motivation for many living donors to come forward (Tikoo, 2017).

- The Act does not provide for (a) incentives to family of cadaver donor, (b) benefits to live donors such as life-long follow up care where donation took place, and customised Life Insurance Policy (Review Committee Report, 2005).

- The Act penalises both the donor and the recipient, if convicted of commercial trade in human organs. Penalising donors who may be forced to sell organs due to financial need may deter them from reporting instances of commercial trade of organs or organ trafficking (Sanyal, 2010).

Appendices

- The Act states that no court can take cognizance of an offence under the Act till a complaint is made to it by the Appropriate Authority. Any person who wishes to file a complaint must first give a 60-day notice to the Appropriate Authority (Section 22).

- Despite the enactment of the legislation, over the years, multiple cases of organ commerce and kidney scandals have been regularly reported in the Indian media, pointing towards gaps in implementation of the Act (Vora, 2019).

VIII. PRE-CONCEPTION AND PRE-NATAL DIAGNOSTIC TECHNIQUES (PROHIBITION OF SEX SELECTION) ACT, 1994

Key Achievements:

- The Act mandates the registration of all institutions, having any equipment that have the potential to detect sex of fetus, with the appropriate authority.

- The Act prescribes penalties for institutions partaking or involved in sex determination of fetus. The Act also prescribes punishment for the family of pregnant woman that request for pre-natal sex-determination.

- The Act regulates the sale of the ultrasound machines to only registered bodies.

Key Gaps:

- Stringent standards and punishment prescribed under the Act notwithstanding, the sex ratio continues to remain skewed in the country (Patnaik & Kejriwal, 2012).

IX. INFANT MILK SUBSTITUTES, FEEDING BOTTLES AND INFANT FOODS (REGULATION OFPRODUCTION, SUPPLY AND DISTRIBUTION) ACT, 1992

Key achievement:

- The Act has managed to regulate marketing of infant milk substitutes, feeding bottles and infant foods and focuses on quality control measures to ensure malpractices with respect to marketing of such products

X. THE NARCOTIC DRUGS AND PSYCHOTROPIC SUBSTANCES, ACT, 1985

Key Achievements:

- Every offence pertaining to narcotic drugs and psychotropic substances defined under the Act has been made cognizable and non-bailable

- A Central Government Authority, namely the NARCOTICS CONTROL BUREAU (NCB) has been constituted under Section 4(3) of the Act to exercise the powers and functions of the Central Government with respect to coordination between different State and Central Agencies for enforcement of the provisions of the NDPS Act. NCB has various zones and sub-zones in different States for the purpose of collecting and analysing data on various aspects of usage of narcotic drugs and psychotropic substances.

- Section 36 and 36A of the Act provides for constitution of special courts for speedy trial of the offences prescribed thereunder. All offences under the Act which are punishable with imprisonment for a term of more than three years shall be triable only by the Special Court

- Section 35 and 54 of the Act place a reverse burden of proof on the accused to prove that he is innocent in respect of any offences alleged to be committed by him under the Act.

XI. HOMEOPATHY CENTRAL COUNCIL ACT, 1973

Key Achievements:

- The Act provides for the regulation of medical qualifications and medical colleges in the field of homeopathy by the formation of a Central Government Authority.

- Section 14 of the Act also provides for the recognition of medical qualifications granted by medical institutions in States or countries outside India upon fulfilment of certain conditions, thereby enabling students to undertake the study of homeopathy outside the country.

Key Gaps:

- As mentioned in the Statement of Objects and Reasons of the Homoeopathy Central Council (Amendment) Act, 2019, the Central Council of Homoeopathy had failed in its responsibilities and not cooperated willfully with the Central Government in carrying out its duties in the manner that is required to safeguard the standard of education and practice of Homoeopathy system of medicine This led to the need for supersession of the Council by a fresh Board of Governors. It may be noted that initially the Council was required to be reconstituted within a year of its supersession. However, this tenure has now further been extended in 2019 to two years.

XII. MEDICAL TERMINATION OF PREGNANCY ACT 1971

Key Achievements:

- The Act prescribes eligible personnel who may perform induced miscarriage and medical termination of pregnancy.

- The Act prescribes the situations or events when the registered medical practitioner may terminate pregnancies. The events prescribed includes, inter alia, tests to detect anomalies during pregnancies and diagnosis of such tests.

XIII. INDIAN MEDICINE CENTRAL COUNCIL ACT, 1970

Key Achievements:

- The Central Council has been established to perform the functions of, inter alia, mandatory provision of information about courses of study and examinations from every university, board or medical institution in India, prescribe the minimum standards of education in Indian medicine, for the purpose of granting recognised medical qualifications by universities, boards or medical institutions in India (Borkar, 2019).

- The Act mandates the registration of all practitioners of traditional and alternative medicines with a State Register or the Central Register of Indian Medicine. The Act also mandates such registered practitioners to possess a recognised medical qualification.

Key Gap:

- The Act does not address the informal practices of Indian system of medicines (Borkar, 2019).

XIV. DRUGS & MAGIC REMEDIES (OBJECTIONABLE ADVERTISEMENT) ACT, 1954

Key Achievements:

Appendices

- The Act prohibits misleading advertisements related to diagnosis, cure, mitigation, treatment or prevention of any disease, disorder or condition specified in the Schedule, which currently include diseases such as diabetes, cancer and obesity.

Key Gaps:

- The Act prohibits misleading health advertisements, where 'advertisement' is defined to include "any notice, circular, label, wrapper, or other document, and any announcement made orally or by any means of producing or transmitting light, sound or smoke." This definition does not account for communications over web-based/digital media (Rastogi, 2012).

- Currently, though the Advertising Standards Council of India (ASCI) self-regulates advertisements and reports misleading health advertisements, there is no statutory body established for this purpose which is empowered to undertake pre-clearance or pre-vetting of advertisements (Sapra, Lenin, Kulshreshtha & Birla, 2019).

- While the Act contains provisions prohibiting false and misleading advertisements and prescribes a penalty for the same, there is no provision mandating the issuance of corrective advertisements as a remedy (Rastogi, 2012).

- On the implementational side, there is a shortage of sufficient number of Ayurveda drug inspectors who are qualified to inquire into the complaints against ayurvedic companies promising magical remedies (Sapra, Lenin, Kulshreshtha & Birla, 2019).

- The regulatory regime requires strengthening by ensuring stricter disciplinary action, including mandatory jail term for advertising magic cures. Strict action is also necessary against platforms that publish or broadcast advertisements which are in contravention of the Act, including imposing of fines, imprisonment of the concerned designees and suspending platforms which are repeat offenders (Parliamentary Standing Committee, 2016).

- In order to achieve the objectives of the Act, in addition to the prohibition on misleading advertisements, organized awareness initiatives are necessary to adequately caution consumers against such advertisements and to keep them well-informed (Rastogi, 2012).

XV. **EPIDEMIC DISEASES ACT, 1897**

Key Achievement:

- The Act has facilitated the formulation of a regulatory framework for controlling the spread of epidemic diseases and to govern the conduct of persons in such situations.

Key Gaps:

- The Act, though formulated to deal with "dangerous epidemic diseases", does not define or describe a "dangerous epidemic disease". There is also no indication of what qualifies an epidemic as "dangerous", whether it is number of people affected, the extent of geographical spread, the demographic profile affected (women, children, senior citizens) or the severity of disease (potential for death or disability) (Rakesh, 2016).

- The Act does not address the newer avenues of disease spread such as, increasing rates of international travel, greater economic migration within states, increased industrialisation and urbanisation, rise in population density, increasing chances of contact with animals and birds, changing climatic conditions and biosafety lapses (Rakesh, 2016).

- The Act provides for quarantine measures and calls for the segregation of persons who may be infected by a contagious disease, but is silent on other methods of epidemic management, such as vaccination, surveillance and organised public health response (Rakesh, 2016).

- The Act emphasises the power of the government but is silent on the rights of citizens. While the Act empowers the government to quarantine individuals and to carry out inspections, the Act does not expressly state the grounds for the exercise of such power or the regulatory safeguards subject to which the authority may act (Rakesh, 2016).

- The Act itself does not describe any standards for the control of disease spread, but only enables the Central or State Governments to frame guidelines in this regard (Rakesh, 2016).

XVI. DRUGS (CONTROL) ACT, 1950

Key Achievement:

- During the initial implementation of the Act, it was successful in preventing hoarding and profiteering in medicines.

Key Gap:

- After the enactment of the Essential Commodities Act, 1955 and 'drugs' having been declared as an essential commodity under the Essential Commodities Act, 1955, the Drugs (Price Control) Orders are being issued from time to time since 1970, under section 3 of the Essential Commodities Act, 1955. Since price control is being done under the Essential Commodities Act, 1955, the Drugs (Control) Act, 1950 has become redundant (Drugs (Control) Repeal Bill, 2006).

XVII. PHARMACY ACT, 1948

Key Achievements:

- Under the Act, at the central level, the Pharmacy Council of India was formed (Section 3) and at the State level, respective State Councils have been formed (Section 19).

- The Act has empowered the Pharmacy Council of India to lay down minimum educational qualifications for a person to be registered as a pharmacist and dispense medicines (Sections 10 and 11).

- The Act has prescribed for the creation of central level and state level register of pharmacists and has laid down the procedure for registration (Section 15A read with Sections 31, 32 and 33).

- There are penal provisions in place in the Act for practice of pharmacy without valid registration and other specific violations (Sections 41, 42 and 43).

Key Gaps:

- The Act empowers the Pharmacy Council of India to prescribe educational qualifications. However, the Pharmacy Council of India has no jurisdiction over MPharm and other higher-level degree programs.

- The educational regulations laid down by the Pharmacy Council of India become applicable to a State only upon notification of the regulations by the State government in the official gazette. This causes a lack of uniformity within the country and leaves a window of opportunity for States to apply their own educational and training standards for registration of pharmacists (Basak, Sathyanarayana, 2010).

Appendices

XVIII.   DENTISTS ACT, 1948

Key Achievements:

- Under the Act, at the central level, the Dental Council of India was formed (Section 3) and at the State level, respective State Councils have been formed (Section 21).

- The Act has specifically laid down dental qualifications which may be considered valid to enable persons to practice dentistry in India (Schedule I read with Section 10).

- The Act has prescribed the creation of central level, namely the Indian Register, (Section 18) and State level register of dentists (Section 31) and has laid down the procedure for registration (Sections 32-35).

- The Act has recognised the principle of reciprocity whereby the Dental Council of India can enter into negotiations and reach an agreement with other countries to recognize the dental qualification granted by that country (Section 10 (5)).

- The Act lays down clear penalties for various violations such as falsely claiming to be registered under the Act, misuse of titles, practicing dentistry without having registration and failure to surrender registration certificate even after registration has been cancelled (Sections 47-50).

XIX.   DRUGS AND COSMETICS ACT, 1940

Key Achievements:

- The Drugs Technical Advisory Board has been created to advise the Central Government and the State Governments on technical matters arising out of the administration of the Act.

- For Ayurvedic, Siddha and Unani drugs, a separate board called Ayurvedic, Siddha and Unani Drugs Technical Advisory Board is created.

- The Central Drugs Laboratory has been created to undertake quality control of drugs and cosmetics manufactured within the country or imported into India.

- The Central Drugs Standard Control Organization has been established to undertake regulatory control over the approval of drugs, conduct of clinical trials, standards for drugs, quality of imported drugs in the country etc.

- An advisory committee, namely the Drugs Consultative Committee has been established to advise the Central Government, State Governments and the Drugs Technical Advisory Board on securing uniformity in the administration of the Act.

Key Gaps:

- The nature of allopathic drugs and Ayurvedic, Siddha and Unani drugs are distinctly different from each other; accordingly, the regulatory requirements are also different. Therefore, the two categories of drugs should ideally be regulated separately through different legislations (Expert Committee Report, 2003).

- The Act indulges in excessive delegation of legislative powers to the Government. The boundary conditions for several issues, including those relating to clinical trials have not been provided in the statutory provisions. A large scope has been left to subordinate legislation (Thakur & Reddy, 2016).

- Since the licensing of drugs and cosmetics is undertaken at the State level, there is fragmentation of the licensing regime and lack of uniformity of enforcement of the Act at the national level (Expert Committee Report, 2003).

- The Central Drugs Standard Control Organization has no control over the manufacture, import, sale, distribution, efficacy, quality standards and pricing of food supplements claiming medicinal and curable properties (Expert Committee Report, 2003).

- The Act does not contain any explicit provision for regulating clinical trials. While the New Drugs and Clinical Trial Rules were notified in 2019, which contains a provision for compensation, there is no statutory backing for the same under the Act (Sapra, Lenin & Jain, 2019).

- Despite the notification of the Medical Devices Rules, 2017, medical devices will continue to be deemed to be drugs, since the definition of medical devices is tied to the definition of drugs under the Act. As a result, some products which are specifically included in the definition of medical devices under the rules would be governed by the rules, while all other medical devices would be governed by the Drugs and Cosmetics Rules, 1945 (Nishith Desai, 2017).

- Despite the formulation of the Medical Devices Rules, 2017, due to the unamended definition of 'drug' in the Act, which also included medical devices, the Drugs (Price Control) Orders issued under the Essential Commodities Act, 1955, would extend to and limit the prices of medical devices as well (Nishith Desai, 2017).

XX. Cigarettes and Other Tobacco Products Act, 2003

- The Act aims to prohibit advertisement and regulates trade and commerce of production, supply and distribution of cigarettes and other tobacco products in India.

XXI. The Registration of Births and Deaths Act, 1969

- The Act aims to provide for the regulation of registration of births and deaths.

Appendices

Funds released under the Scheme for Upgradation of existing State Government/Central Government medical colleges to increase MBBS seats in the country (INR Crore)

S.No	State		Name of Medical College	Seats increased	No. of seats	Approved cost	Central Share (60%)	Released in 2015-16	Released in 2016-17	Released in 2017-18	Released in 2018-19	Released in 2019-20 (till date)	Total Released
1	Andhra Pradesh	1	Government Medical College, Ananthapur	100 to 150	50	60	36	2	5.17	4.83	15	9	36
		2	RIMS, Srikakulam	100 to 150	50	60	36	2	5.17	4.83	15	9	36
		3	RIMS, Kadapa	100 to 150	50	60	36	2	5.17	18.3	10.53	0	36
2	Gujarat	4	Government Medical College, Surat	150 to 250	100	120	72	2.5	8.27	13.23	32	16	72
		5	Government Medical College, Vadodara	180 to 250	70	84	50.4	2	7.33	7.47	21.6	12	50.4
3	Madhya Pradesh	6	Gandhi Medical College, Bhopal	150 to 250	100	120	72	2.5	8.35	13.15	30	18	72
		7	G R Medical College , Gwalior	150 to 250	100	120	72	2.5	8.27	13.23	30	18	72
		8	S. S. Medical College, Rewa	100 to 150	50	60	36	2	5.17	4.83	15	9	36
		9	MGM Medical College, Indore	150 to 250	100	120	72	2.5	8.27	13.23	30	18	72
		10	NSCB Medical College, Jabalpur	150 to 250	100	120	72	2.5	8.27	13.23	30	18	72
		11	Bundelkhand Medical College, Sagar, Madhya Pradesh	100 to 150	150	180	108	0	0	0	0	50	50
4	Orissa	12	VSS Medical College, Burla	150 to 250	100	120	72	2.5	8.28	13.22	32	16	72

		13	MKCG Medical College, Behrampur	150 to 250	100	120	72	2.5	8.28	40.16	16.17	4.89	72
5	Punjab	14	Govt. Medical College, Patiala	150 to 200	50	60	36	2	5.17	18.3	10.53	0	36
		15	Govt. Medical College, Amritsar	150 to 200	50	60	36	2	5.17	18.3	10.53	0	36
6	Rajasthan	16	RNT Medical College, Udaipur	150 to 250	100	120	72	2.5	8.28	13.22	30	18	72
		17	Govt. Medical College, Jhalawar	100 to 150	50	60	36	2	5.17	18.3	10.53	0	36
		18	JLN Hospital & Medical College, Ajmer	150 to 250	100	120	72	2.5	8.28	13.22	30	18	72
		19	Kota Medical College	150 to 250	100	120	72	0	0	0	39	33	72
7	Tamil Nadu	20	Govt. Medical College, Coimbatore	150 to 250	100	120	72	2.5	8.28	13.22	30	18	72
		21	Govt. Medical College, Kanyakumari	100 to 150	50	60	36	2	5.17	4.83	15	9	36
		22	Govt. Medical College, Tirunelveli	150 to 250	100	120	72	2.5	8.28	13.22	30	18	72
		23	Govt. Medical College, Madurai	155 to 250	95	114	68.4	2.5	10.03	10.03	30	15.84	68.4
8	Uttarakhand	24	Govt. Medical College, Haldwani	100 to 150	50	60	54	2	5.17	8.83	20	18	54
9	West Bengal	25	Calcutta Medical College	150 to 200	50	60	36	0	0	12	15	9	36
		26	Midnapore Medical College	100 to 150	50	60	36	0	0	12	15	9	36
10	Manipur	27	Jawaharlal Nehru Institute Of Medical Sciences, Imphal	100 to 150	50	60	54	0	0	12	28	14	54
11	Karnataka	28	Belgaum Institute of Medical Sciences	100 to 150	50	60	36	0	0	25.47	10.53	0	36
		29	Bidar Institute Of Medical Sciences	100 to 150	50	60	36	0	0	25.47	10.53	0	36
		30	Hassan Institute Of Medical Sciences	100 to 150	50	60	36	0	0	25.47	10.53	0	36

Appendices

		31	Mandya Institute. Of Medical Sciences	100 to 150	50	60	36	0	0	25.47	10.53	0	36
		32	Raichur Institute Of Medical Sciences	100 to 150	50	60	36	0	0	25.47	10.53	0	36
		33	Shimoga Institute Of Medical Sciences	100 to 150	50	60	36	0	0	25.47	10.53	0	36
		34	Karnataka Institute of Medical Sciences (KIMS), Hubli*	150 to 200	50	60	36	0	0	0	23	13	36
		35	Mysuru Medical College and Research institute, Mysuru*	150 to 250	100	120	72	0	0	0	39	33	72
		36	Vijayanagar Institute of Medical Sciences, Ballari*	150 to 250	100	120	72	0	0	0	39	33	72
12	Jharkhand	37	Rajendra Institute. Of Medical Sciences*	150 to 250	100	120	72	0	0	0	39	33	72

Funds released under the Centrally Sponsored Scheme for Establishment of new medical colleges attached with existing district/referral hospitals

S.N.	State/UT		Districts	Functional	Total amount	Central Share 60% (90% for NE)	Amount released in 2014-15	Amount released in 2015-16	Amount released in 2016-17	Amount released in 2017-18	Amount released in 2018-19	Amount released in 2019-20	Total amount Released
1	A & N Islands	1	Port Blair	Yes	189.00	113.40	0.00	28.00	40.00	45.00	0.40	0.00	113.40
2	Arunachal Pradesh	2	Naharlagun	Yes	189.00	170.10	0.00	42.50	10.00	50.00	67.60	0.00	170.10
3	Assam	3	Dhubri		189.00	170.10	0.00	10.00	20.00	41.00	99.10	0.00	170.10
		4	Nagaon		189.00	170.10	0.00	10.00	20.00	41.00	99.10	0.00	170.10
		5	North Lakhimpur		189.00	170.10	0.00	10.00	20.00	41.00	99.10	0.00	170.10
		6	Diphu		189.00	170.10	0.00	0.00	83.97	38.00	48.13	0.00	170.10
4	Bihar	7	Purnia		189.00	113.40	0.00	4.00	22.00	28.00	59.40	0.00	113.40
		8	Saran (Chhapara)		189.00	113.40	0.00	4.00	22.00	28.00	59.40	0.00	113.40
		9	Samastipur		189.00	113.40	0.00	0.00	0.00	0.00	30.00	50.00	80.00
5	Chhattisgarh	10	Rajnandgaon	Yes	189.00	113.40	7.00	27.02	34.00	30.38	15.00	0.00	113.40
		11	Sarguja	Yes	189.00	113.40	7.00	12.00	49.00	30.40	15.00	0.00	113.40

6	Himachal Pradesh	12	Chamba	Yes	189.00	170.10	0.00	20.00	31.00	49.00	70.10	0.00	170.10
		13	Hamirpur	Yes	189.00	170.10	6.53	22.98	21.00	50.00	69.59	0.00	170.10
		14	Nahan (Sirmour)	Yes	189.00	170.10	6.00	25.00	71.00	20.00	48.10	0.00	170.10
7	Haryana	15	Bhiwani		189.00	113.4	0.00	0.00	14.05	54.00	45.35	0.00	113.40
8	Jharkhand	16	Dumka	Yes	189.00	113.40	0.00	0.00	26.00	62.00	25.40	0.00	113.40
		17	Hazaribagh	Yes	189.00	113.40	0.00	0.00	26.00	62.00	25.40	0.00	113.40
		18	Palamu (Daltonganj)	Yes	189.00	113.40	0.00	0.00	26.00	62.00	25.40	0.00	113.40
9	Jammu & Kashmir	19	Anantnag	Yes	189.00	170.10	0.00	0.00	36.00	35.00	99.10	0.00	170.10
		20	Baramulla	Yes	189.00	170.10	0.00	0.00	36.00	35.00	99.10	0.00	170.10
		21	Rajouri	Yes	189.00	170.10	0.00	0.00	36.00	35.00	99.10	0.00	170.10
		22	Doda		189.00	170.10	0.00	0.00	0	71.00	99.10	0.00	170.10
		23	Kathua	Yes	189.00	170.10	0.00	0.00	0	71.00	99.10	0.00	170.10
10	Madhya Pradesh	24	Datia	Yes	189.00	113.40	7.00	12.00	15.00	54.00	25.40	0.00	113.40
		25	Khandwa	Yes	189.00	113.40	7.00	12.00	15.00	54.00	25.40	0.00	113.40
		26	Ratlam	Yes	189.00	113.40	0.00	0.00	27.00	61.00	25.40	0.00	113.40
		27	Shahdol	Yes	189.00	113.40	0.00	0.00	27.00	61.00	25.40	0.00	113.40
		28	Vidisha	Yes	189.00	113.40	0.00	0.00	27.00	61.00	25.40	0.00	113.40
		29	Chindwara	Yes	189.00	113.40	0.00	0.00	0	69.00	44.40	0.00	113.40
		30	Shivpuri	Yes	189.00	113.40	0.00	0.00	0	69.50	43.90	0.00	113.40
11	Maharashtra	31	Gondia	Yes	189.00	113.40	6.00	7.00	55.00	20.00	25.40	0.00	113.40
12	Meghalaya	32	West Garo Hills (Tura)		189.00	170.10	0.00	0.00	0.00	76.00	94.10	0.00	170.10
13	Mizoram	33	Falkawn	Yes	189.00	170.10	0.00	30.00	21.02	90.50	28.58	0.00	170.10
14	Nagaland	34	Naga Hospital		189.00	170.10	0.00	36.50	14.53	25.00	94.07	0.00	170.10
15	Odisha	35	Balasore	Yes	189.00	113.40	7.00	17.00	10.00	71.00	8.40	0.00	113.40
		36	Baripada (Mayurbhanj)	Yes	189.00	113.40	7.00	17.00	10.00	79.00	0.40	0.00	113.40
		37	Bolangir	Yes	189.00	113.40	7.00	17.00	10.00	71.00	8.40	0.00	113.40
		38	Koraput	Yes	189.00	113.40	7.00	17.00	10.00	79.00	0.40	0.00	113.40
		39	Puri		189.00	113.40	7.00	17.00	10.00	71.00	8.40	0.00	113.40
16	Punjab	40	SAS Nagar		189.00	113.40	0.00	0.00	0.00	0.00	113.40	0.00	113.40
17	Rajasthan	41	Barmer	Yes	189.00	113.40	7.00	15.00	12.00	71.00	8.40	0.00	113.40
		42	Bharatpur	Yes	189.00	113.40	7.00	15.00	12.00	71.00	8.40	0.00	113.40
		43	Bhilwara	Yes	189.00	113.40	7.00	15.00	12.00	71.00	8.40	0.00	113.40
		44	Churu	Yes	189.00	113.40	7.00	15.00	12.00	71.00	8.40	0.00	113.40

Appendices

		45	Dungarpur	Yes	189.00	113.40	7.00	14.20	12.00	72.20	8.00	0.00	113.40
		46	Pali	Yes	189.00	113.40	6.00	15.00	13.00	71.00	8.40	0.00	113.40
		47	Sikar		189.00	113.40	0.00	0.00	30.00	75.00	8.40	0.00	113.40
18	Uttar Pradesh	48	Basti	Yes	189.00	113.40	0.00	4.00	30.02	66.00	13.38	0.00	113.40
		49	Faizabad	Yes	189.00	113.40	0.00	4.00	30.02	66.00	13.38	0.00	113.40
		50	Firozabad	Yes	189.00	113.40	0.00	4.00	30.02	66.00	13.38	0.00	113.40
		51	Shahjahanpur	Yes	189.00	113.40	0.00	4.00	30.02	66.00	13.38	0.00	113.40
		52	Bahraich	Yes	189.00	113.40	0.00	0.00	34.02	66.00	13.38	0.00	113.40
19	Uttarakhand	53	Almora		189.00	170.10	6.00	8.00	37.02	102.02	17.06	0.00	170.10
20	West Bengal	54	Birbhum (Rampur Hat)	Yes	189.00	113.40	0.00	4.00	21.00	75.00	13.40	0.00	113.40
		55	Cooch behar	Yes	189.00	113.40	0.00	4.00	21.00	75.00	13.40	0.00	113.40
		56	Diamond harbour	Yes	189.00	113.40	0.00	4.00	21.00	75.00	13.40	0.00	113.40
		57	Purulia		189.00	113.40	0.00	4.00	21.00	75.00	13.40	0.00	113.40
		58	Raiganj, North Dinajpur	Yes	189.00	113.40	0.00	4.00	20.00	75.00	14.40	0.00	113.40
	Total				42	10962.00	7541.10	128.53	531.20	1293.69	3300.00	2204.28	50.00	7507.70

Note: Time frame for completion of Phase-I is 2019-20.

Status of 24 medical colleges identified under Phase-II of CSS for Establishment of new medical colleges attached with existing district/referral hospitals

SN	State		Location Selected by State Government	Functional	Current Status/ Remarks	Approved Cost (INR Crore)	Central Share (INR Crore)	Amount released in 2018-19 (INR Crore)	Amount released in 2019-20 (INR Crore)	Total released
1	Bihar	1	Sitamarhi	Not yet	Approved	250.00	150.00	-	50	50
		2	Jhanjharpur	Not yet	Approved	250.00	150.00	-	50	50
		3	Siwan	Not yet	Not approved (land not available)	250.00	150.00	-	-	-
		4	Buxar	Not yet	Approved	250.00	150.00	-	50	50
		5	Jamui	Not yet	Approved	250.00	150.00	-	50	50
2	Jharkhand	6	Koderma	Not yet	Approved	250.00	150.00	56.00	71.59	127.59
		7	Chaibasa (Singhbhum)	Not yet	Approved	250.00	150.00	56.00	71.59	127.59
3	Madhya Pradesh	8	Satna	Not yet	Approved	250.00	150.00	56.00	71.59	127.59
4	Odisha	9	Jajpur	Not yet	Approved	250.00	150.00	-	50	50

5	Rajasthan	10	Dholpur	Not yet	Approved	250.00	150.00	56.00	71.59	127.59
6	Uttar Pradesh	11	Etah	Not yet	Approved	250.00	150.00	56.00	39.14	95.14
		12	Hardoi	Not yet	Approved	250.00	150.00	56.00	39.14	95.14
		13	Pratapgarh	Not yet	Approved	250.00	150.00	56.00	39.14	95.14
		14	Fatehpur	Not yet	Approved	250.00	150.00	56.00	39.14	95.14
		15	Siddharthnagar (Domariyaganj)	Not yet	Approved	250.00	150.00	56.00	39.14	95.14
		16	Deoria	Not yet	Approved	250.00	150.00	56.00	71.59	127.59
		17	Ghazipur	Not yet	Approved	250.00	150.00	56.00	71.59	127.59
		18	Mirzapur	Not yet	Approved	250.00	150.00	56.00	71.59	127.59
7	West Bengal	19	Barasat	Not yet	Approved	250.00	150.00	56.00	71.59	127.59
		20	Uluberia	Not yet	Conditionally approved by EC	250.00	150.00	-	-	-
		21	Arambagh	Not yet	Approved	250.00	150.00	56.00	71.59	127.59
		22	Jhargram	Not yet	Approved	250.00	150.00	56.00	71.59	127.59
		23	Tamluk	Not yet	Approved	250.00	150.00	56.00	71.59	127.59
8	Sikkim	24	Gangtok	Not yet	Approved	250.00	225.00	67.40	58	125.4
						6000.00	3675.00	963.40	1291.19	2254.59

Note: Time frame for completion of Phase-II is 2021-22.

Appendices

Components of National AYUSH Mission

The four mandatory components under the National AYUSH Mission are:

1. AYUSH services

   A crucial component of NAM is to strengthen institutional capacity at the state level through various services such as co-location of AYUSH with PHCs, CHCs and DH, supply of essential drugs to AYUSH hospitals and dispensaries, upgradation of AYUSH hospitals and dispensaries, setting up of 50 bedded integrated AYUSH hospitals, development of AYUSH grams, public health outreach activities, BCC/IEC and School Health Program.

2. AYUSH educational institutions

   While infrastructure creation is one of the key focus areas of NAM, creation of a strong AYUSH workforce is imperative for the promotion of AYUSH as a system of medicine. Upgradation, strengthening and standardization of AYUSH educational institutions is the focus under this component and is aimed at increasing the number of AYUSH doctors and other professionals who can be employed while extending healthcare services through AYUSH in the country. The expected outcome is the improvement in AYUSH education by increasing the number of upgraded AYUSH educational institutions.

3. Quality Control of ASU&H Drugs

   Promotion and adoption of quality standards of AYUSH drugs and ensuring the supply of AYUSH raw materials in a sustained manner is one of the important objectives of NAM. The implementation of this component is expected to increase the availability of quality ASU&H drugs by increasing the number of drug laboratories and enforcement mechanism of ASU&H drugs. Quality improvement under NAM is targeted at improved availability of quality ASU&H drugs through increase in the number of quality Pharmacies and Drug Laboratories and enforcement mechanisms of ASU&H drugs by strengthening regulatory framework.

4. Medicinal Plants

   The medicinal plant component includes activities like cultivation of medicinal plants and establishment of nursery, post-harvest management units, marketing yards for such crops etc. This component is implemented through Mission Directors/CEOs identified in States/UTs located in State Horticulture/ Agriculture departments and State Medicinal Plants Boards. For implementation of medicinal plants component, the departments that are mostly concerned are forest departments, AYUSH department and Agriculture / Horticulture departments in the states.

   1. **AYUSH Services**

   Core/Essential Activities include:
   - Co-location of AYUSH facilities at PHCs, CHCs and District Hospitals
   - Upgradation of existing Government AYUSH Hospitals
   - Upgradation of existing Government/Panchayat/Govt aided AYUSH Dispensaries
   - Setting up of up to 50 bedded integrated AYUSH Hospitals
   - Supporting facilities such as Program Management Units at Central and State level
   - Supply of essential drugs to AYUSH Hospitals and Dispensaries
   - Public Health Outreach activity
   - Mobility support at State and District level

- Behaviour Change Communication (BCC)/Information Education and Communication (IEC)
- School Health Program

Activities under Flexible Pool include:

- AYUSH Wellness Centres including Yoga & Naturopathy
- Tele-medicine
- Sports Medicine through AYUSH
- Innovations on Mainstreaming of AYUSH including PPP

Below is the summary of grant-in-aid provided for the core activities:

	Core Activity	One-time grant	Recurring grant
1.	Co-location of AYUSH facilities at PHCs, CHCs and District Hospitals a. Establishment of AYUSH OPD Clinics in the Primary Health Centres (PHCs) b. Establishment of AYUSH IPDs in Community Health Centres (CHCs) c. Setting up of AYUSH Wings in District Hospitals	a. Up to INR 20.00 lakh b. Up to INR 30.00 lakh c. Up to INR 40.00 lakh	a. INR 3.3 lakh per annum b. INR 5.50 lakh per annum c. INR 5.70 lakh per annum
2.	Supply of Essential Drugs to AYUSH Hospitals and Dispensaries	\<Exact amount not mentioned>	INR 3.00 lakh per annum
3.	Upgradation of exclusive/standalone Government AYUSH hospitals (other than PHCs/ CHCs/ DHs)	Up to INR 75.00 lakh	INR 5.20 lakh per annum
4.	Upgradation of Government/Panchayat /Government aided AYUSH Dispensaries	Up to INR 20.00 lakh	INR 0.10 lakh per annum
5.	Setting up of upto 50 Bedded Integrated AYUSH Hospitals	Up to INR 900.00 lakh	INR 150.00 lakh per annum
6.	Public Health Outreach activity	\<Exact amount not mentioned>	\<Exact amount not mentioned>
7.	Behaviour Change Communication (BCC)/Information Education and Communication (IEC)	\<Exact amount not mentioned>	INR 200.00 lakh per annum for each state
8.	Mobility support at State and District level	\<Exact amount not mentioned>	INR 5.00 lakh per annum at state level INR 1.20 lakh per annum at district level
9.	AYUSH Gram	INR 10.00 Lakh per unit covering 10, 000 in population in 5 to 15 villages in a State	\<Exact amount not mentioned>
10.	School Health Program through AYUSH	INR 1 Lakh per unit of 2 blocks covering for the State	\<Exact amount not mentioned>

Below is the summary of grant-in-aid provided for the flexible activities:

	Flexible Activity	One-time grant	Recurring grant
1.	AYUSH Wellness Centres including Yoga & Naturopathy	INR 3.6 Lakh	INR 17.4 Lakh per annum
2.	Tele-medicine	\<Exact amount not mentioned>	\<Exact amount not mentioned>
3.	Sports Medicine through AYUSH	\<Exact amount not mentioned>	\<Exact amount not mentioned>
4.	Innovations on Mainstreaming of AYUSH including PPP	\<Exact amount not mentioned>	\<Exact amount not mentioned>

Observations from facility visits are as below:

Appendices

For the upgradation of existing Government AYUSH Hospitals component funded under NAM, some findings from the facility visits include:

A. In Rajkiye Ayurvedic Chikitsalaya, Lucknow:
- In May 2018 a total of 75 lakh rupees was approved to upgrade infrastructure of this facility from 4 to 15 bedded hospital
- 37.5 Lakh was released for the construction purpose and the same has been utilized
- An OPD inflow of 65 patients per day has been observed

B. In Government Ayurveda College Hospital for Women and Children, Kerala:
- Kerala follows a unique model where both Ayurveda and Allopathic system of medicine function in Gynaecology, Obstetrics and Paediatrics.
- The hospital which witnessed around 500 deliveries per year in 1990s reduced to 2-5 deliveries per year.
- In 2014, the state government allocated 1.13 crores to revive the infrastructural facilities.
- However, there was a severe shortage of human resources. In 2018, under NAM 25 personnel were employed for the smooth functioning of the labour room.
- Due to the funding received from NAM, there has been a dramatic rise in the cases being handled at the hospital.

C. In the Government Ayurveda Hospital in Neyyattinkara, Kerala:
- NAM funds are utilized for human resources component (10 staff have been hired for all NAM funded initiatives) and for the construction of the building for outpatients (due to be completed next month).
- Utilizing NAM funds, the hospital is also undertaking two other initiatives: Mizhi Project for refractive errors in the eyes for children and construction of the yoga hall.
- Under the Mizhi project, every month eye exercise camps, awareness classes and eye tests are conducted in 3-4 schools.
- Utilizing the funds released by NAM, the Government Homeopathy Hospital in Neyyattinkara, Kerala had renovated the premises. It currently has 25 beds in the facility and witnesses an OPD inflow of 262 patients.

2. **AYUSH Educational Institutions**

Core activities include:
- Infrastructural development of AYUSH Under-Graduate Institutions
- Infrastructural development of AYUSH Post-Graduate Institutions/add on PG Pharmacy/Para-Medical Courses
- Setting up of new AYUSH educational Institutions in the States where it is not available in Government sector

Flexible activities include:
- Interest subsidy component for Private AYUSH educational Institutions

Below is the summary of grant-in-aid provided for the core activities:

	Core Activity	One-time grant
1.	Infrastructural development of AYUSH Under-Graduate Institutions	INR 300 lakh
2.	Infrastructural development of AYUSH Post-Graduate Institutions/add on PG Pharmacy/Para-Medical Courses	INR 400 lakh
3.	Setting up of new AYUSH educational Institutions in the States where it is not available in Government sector	INR 1050 lakh

Below is the summary of grant-in-aid provided for the flexible activities:

	Flexible Activity	One-time grant	Recurring grant
1.	Interest subsidy for Development of Private AYUSH Educational Institutions	• 70% of Project cost of construction up to INR 210.00 Lakh (for UG) INR 280.00 Lakh (for PG) • 30% of Project cost of Equipment etc. up to INR 900.00 Lakh (for UG) INR 120.00 Lakh (for PG)	Up to INR 25 lakh per crore of loan up to 7 years

3. Quality Control of Ayurveda, Siddha, Unani and Homoeopathy Drugs

Core activities include:

- Grant in aid to State/Govt. ASU&H Pharmacies/ State Govt. ASU&H Cooperatives, State Govt. ASU&H PSU's
- Grant in aid to State Drug Testing Laboratories of Ayurveda, Siddha, Unani and Homoeopathy (ASU&H) Drugs
- Grant-in-aid for strengthening of ASU&H Drug Control Framework
- Grant in aid to State Licensing Authority of ASU&H Drugs for documentation publication and dissemination of quality control material for States

Flexible activities consist of IEC activities.

Below is the summary of grant-in-aid provided for the core activities:

	Core Activity	One-time grant	Recurring grant
1.	Grant in Aid to New State Govt. ASU&H Pharmacies/ State Govt. ASU&H Co-operatives, State Govt. ASU&H PSUs	INR 350.00 Lakh (i.e. 70% of INR 500 Lakh)	INR 150.00 Lakh (i.e. 30% of INR 500 Lakh)
2.	Grant in Aid to Existing State Govt. ASU&H Pharmacies/ State Govt. ASU&H Co-operatives, State Govt. ASU&H PSUs	INR 150.00 Lakh (i.e. 30% of INR 500 Lakh)	INR 150.00 Lakh (i.e. 30% of INR 500 Lakh as Recurring Grant was not provided earlier)
3.	Grant in Aid to New State Drug Testing Laboratories of ASU&H Drug	INR 320.00 Lakh (i.e. 80% of INR 400 Lakh)	INR 80.00 Lakh (i.e. 20% of INR 400 Lakh)
4.	Grant in Aid to Existing State Drug Testing Laboratories of ASU&H Drugs	INR 70.00 Lakh (i.e. INR 320 Lakh less INR 250 Lakh already provided)	INR 80.00 Lakh (i.e. 20% of INR 400 Lakh as Recurring Grant was not provided earlier)
5.	Grant in Aid for Strengthening of ASU&H Drugs Control Framework - Advance	INR 20.00 Lakh per unit as Ist instalment	
6.	Grant in Aid for Strengthening of ASU&H Drugs Control Framework - Remaining	INR 30.00 Lakh Remaining as IInd instalment to be paid in next year	
7.	Grant in Aid to State Licensing Authority of ASU&H Drugs for documentation publication and dissemination of quality control material for states		INR 8.00 Lakh per annum

Appendices

8.	Technical Manpower support for State DTL		INR 25.00 Lakh per year, per Laboratory per year for 2 years
9.	Quality Testing of Drugs		INR 5.00 Lakh per year for testing of 500 survey/ statutory samples in NE
			INR 15.00 Lakh per year for testing of 1500 drug samples for other States

Observations from facility visits to DTLs are as below:

States	Standard Operating Procedures (SOP)	Notified Government Analyst	Number of sanctioned staff	Number of samples tested per month	Number of equipment available
Uttar Pradesh	No	Yes	15	45-60 samples	38
Karnataka	Yes	Yes	13	200 samples	38
Kerala	Yes	Yes	10	60 samples	23

A. In Karnataka, out of the 13 sanctioned posts, 8 are vacant. 4 drug analysts were appointed on a contractual basis with the support of NAM. The has increased the ability of the DTL to test more number of samples. Under NAM, in 2017-18, 35.42 lakh was provided for procurement of instruments and the procurement process was completed in the month of December 2019. The funds are yet to be released for the procurement to be completed. It faced a delay of 6 months due to issues in the procurement process. A proposal was also submitted for the construction of a modular micro-biology laboratory and approved. However, the cost estimation had to be increased. This will be incorporated in the proposal to NAM for the next financial year, post which the construction can be initiated.

B. In Uttar Pradesh, a proposal was submitted in 2019-20 for procuring funds under NAM; for human resources (Rs 25 lakh), procurement of chemicals (Rs 25 lakh) and civil construction work (Rs 69. 7 lakh). Funding for HR and procurement of chemicals has not been received. However, while funding for civil construction work has been received there has been a delay in initiating the construction activities by the state government. This is due to lack of standardized protocols for the construction activities.

C. In Kerala, under NAM, funding has been provided for human resources and procurement of equipment. There is a need for more analysts to be hired at the DTL. It was indicated that there is a need for reference standards for natural compounds for qualitative and quantitative determination of Ayurvedic products. In addition to this, it was indicated that a research wing in the Ayurvedic department would prove beneficial.

4. **Medicinal plants**

Below is the summary of estimated cost and admissible assistance provided to activities under the medicinal plant component:

	Programs	Estimated Cost	Admissible Assistance
1	Post-harvest management		
	i) Drying sheds	INR 10.00 lakh	100% assistance for Govt./Semi-Govt./Public Sector and 50% for SHGs / Cooperatives/Private sector
	ii)Storage godowns	INR 10.00 lakh	100% assistance for Govt./Semi-Govt./Public Sector and 50% for SHGs / Cooperatives/Private sector

2	Processing and value addition		
	i) Processing unit	INR 400 lakh	100% assistance in case of Govt / Semi-govt. / SHGs / Cooperatives / Public Sector limited to Rs. 400 lakh / unit
	ii) Marketing infrastructure	• INR 10.00 lakh for rural collection center. • INR 200 lakh for district collection center.	Project based. 100% assistance to Public Sector and 50% assistance to Private Sector /SHGs / Cooperatives
	iii) Organic/GAP certification	INR 5 lakh for 50 ha.	Assistance up to 50% of the cost limited to INR 10,000/ha for maximum area of 4 ha/ beneficiary spread over a period of three years would be provided for organic / GAP cultivation. For certification INR 5.00 lakh for 50 ha. will be provided
	iv) Demonstration plots	-	Project based depending upon species cultivated and infrastructure created limited to INR 10.00 lakh / plot of minimum 2 acres
	v) Setting up of seed/ germ plasm centres	-	INR 25 lakh/ centre
3	Medicinal plant processing clusters		Up to 60% of cost of the core interventions, 25% of the cost of add on interventions, within overall ambit of 60% of the project cost subject to maximum of INR 10.00 crore per cluster.

The flexible components under NAM include:

The flexible components under the scheme include AYUSH wellness centre including yoga and naturopathy, tele-medicine, sports medicine, innovation in AYUSH including PPP, reimbursement of testing charges, research and development in areas related to medicinal plants, voluntary certification scheme, market promotion, market intelligence and buy back interventions and crop insurance for medicinal plants (Department of AYUSH, Ministry of Health & Family).

As per the scheme guidelines, 20% of the funds allocated to the states for NAM are earmarked for flexible funds. However more than 5% of these funds cannot be spent on any one of the above-mentioned components.

Implementation status of the flexible components under NAM is being discussed with the Ministry of AYUSH and will be updated in the final report.

Diseases for which AYUSH drugs are in demand (as on March 2017)

No.	Names of diseases for which drugs are in demand	Number of States reporting this disease	Names of states
1.	Paralysis	1	Gujarat
2.	Obesity	1	Gujarat
3.	Intestinal disease	1	Uttar Pradesh
4.	Arthritis	4	Uttar Pradesh, Uttarakhand, Telangana, Gujarat
5.	Skin diseases	4	Uttar Pradesh, Uttarakhand, Madhya Pradesh, Puducherry
6.	Diabetes	4	Uttar Pradesh, J&K, Kerala, Puducherry
7.	Urinary Tract Infections	1	Uttar Pradesh

8.	Cough and cold	3	Uttar Pradesh, Punjab, Madhya Pradesh
9.	Respiratory disorders	5	Uttar Pradesh, Uttarakhand, Punjab, Haryana
10.	Neurological disorders	1	Uttar Pradesh
11.	Musculo-skeletal disorder	1	J&K
12.	Cardiovascular diseases	1	J&K
13.	Gynaecological diseases	4	J&K, Punjab, Haryana, Madhya Pradesh
14.	Gastrointestinal diseases	3	J&K, Telangana, Haryana
15.	Piles	1	Telangana
16.	Jaundice	1	Telangana
17.	Kidney Stone	1	Telangana
18.	Joint Pain	2	Rajasthan, Punjab
19.	Leucorrhoea	1	Rajasthan
20.	Diarrhoea	1	Rajasthan
21.	Hypertension	2	Rajasthan, Kerala
22.	Dyslipidaemia	1	Kerala
23.	Infertility	1	Kerala
24.	Hypothyroidism	1	Kerala
25.	Polycystic Ovary Syndrome (PCOS)	1	Kerala
26.	Fever	3	Punjab, Haryana, Madhya Pradesh
27.	ENT disease	1	Haryana
28.	Rheumatic disorders	1	Madhya Pradesh
29.	Anaemia	1	Puducherry

Source: Centre for Market Research & Social Development Pvt. Ltd

Until March 2017, of the 1193 AYUSH hospitals and 13601 AYUSH dispensaries (or intended to have) assistance under NAM for purchase of essential drugs, 42 hospitals and 312 dispensaries which are spread across 14 States/UTs were studied.

List of 19 AYUSH treatments proposed to be under PMJAY

No.	Package name
1.	Ayurveda/Siddha/Unani - Respiratory Disorders
2.	Ayurveda/Siddha/Unani – Gastrointestinal Disorders
3.	Ayurveda/Siddha/Unani – Cardiovascular Disorders
4.	Ayurveda/Siddha/Unani – Genitourinary Disorders
5.	Ayurveda/Siddha/Unani – Metabolic Disorders
6.	Ayurveda/Siddha/Unani – Gynaecological Disorders
7.	Ayurveda/Siddha/Unani – Dermatological Disorders
8.	Ayurveda/Siddha/Unani – Muscle – Bone – Joint – Neurological Disorders
9.	Ayurveda/Siddha/Unani – Neuro – Degenerative Disorders
10.	Ayurveda/Siddha/Unani – Ophthalmological Disorders
11.	Ayurveda/Siddha/Unani – ENT Disorders
12.	Ayurveda/Siddha/Unani – Disorders of Oral Cavity
13.	Ayurveda/Siddha/Unani – Autoimmune Disorders
14.	Ayurveda/Siddha/Unani – Cancer care
15.	Ayurveda/Siddha/Unani – Mental Health
16.	Ayurveda/Siddha/Unani – Ano Rectal Conditions
17.	Ayurveda/Siddha/Unani – Communicable Disorders
18.	Ayurveda/Siddha/Unani – Miscellaneous disorders
19.	Ayurveda/Siddha/Unani – Anorectal Disorders

Source: Ministry of AYUSH

Fund Released for Regional Geriatric Centres under NPHCE

S.No.	Name of the RGCs/NCAs	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	Total
National Programme for Health Care of Elderly								
Funds released to Regional Geriatric Centres (RGCs) under Tertiary Care Component (Rs. in Lakhs)								
RGCs identified during 11th Five Year Plan								
1	Govt. Medical College, Tiruvananthapuram, Kerala	0.00	0.00	0.00	25.00	0.00	0.00	25.00
2	Institute Of Medical Sciences, BHU, UP	0.00	0.00	224.98	0.00	0.00	11.73	236.71
3	Guwahati Medical College, Guwahati, Assam	0.00	0.00	88.44	238.44	0.00	0.00	326.88
4	S.N Medical College Jodhpur, Rajasthan (Insttitute)	0.00	50.00	0.00	0.00	0.00	0.00	50.00
5	Madras Medical College , Chennai,Tamil Nadu	0.00	50.00	50.00	0.00	0.00	0.00	100.00
6	Grants Medical College & JJ Hospital, Mumbai, Maharashtra	0.00	50.00	0.00	238.44	0.00	0.00	288.44
7	Sher-e-Kashmir Institute of Medical Science, Srinagar, J &K	0.00	50.00	0.00	0.00	0.00	0.00	50.00
8	All India Institute of Medical Science, New Delhi	0.00	0.00	163.00	0.00	0.00	0.00	163.00
	Sub Total	0.00	200.00	526.42	501.88	0.00	11.73	1240.03
RGCs identified during 12th Five Year Plan								
1	Gandhi Medical College, Bhopal	0.00	100.00	247.11	0.00	0.00	0.00	347.11
2	Kolkata Medical College, Kolkata	0.00	100.00	247.11	0.00	0.00	0.00	347.11
3	Nizam's Institute of Medical Sciences, Hyderabad	0.00	100.00	247.11	0.00	0.00	0.00	347.11
4	S.C.B. Medical College, Cuttack	0.00	100.00	247.11	0.00	0.00	0.00	347.11
5	King George's Medical University, Lucknow	0.00	100.00	247.11	0.00	0.00	0.00	347.11
6	Rajendra Institute of Medical Sciences, Ranchi			347.11	238.44	0.00	0.00	585.55
7	Bangalore Medical College & Research Institute, Bengaluru			347.11	238.44	0.00	0.00	585.55
8	B.J. Medical College, Ahmadabad			347.11	238.44	0.00	0.00	585.55
9	Agartala Medical College, Agartala			347.11	238.44	0.00	0.00	585.55
10	Patna Medical College, Patna			0.00	413.44	0.00	0.00	413.44
11	Rajendra Prasad Government Medical College, Himachal Pradesh			347.11	238.44	0.00	0.00	585.55
	Sub Total	0.00	500.00	2971.10	1605.64	0.00	0.00	5076.74
Fund released to National Centres for Ageing (NCAs								
1	Madras Medical College, Chennai		1000.00	2400.00	4769	1975	0.00	10144.00
2	All India Istitute of Medical Science, New Delhi		900.00	2490.00	0.00	5475	910	9775.00
	Sub Total NCAs	0.00	1900.00	4890.00	4769.00	7450.00	910.00	19919.00
	Grand Total	0.00	2600.00	8387.52	6876.52	7450.00	921.73	26235.77

Source:MoHFW

Appendices

Status of projects for setting up SCI/TCCCs (as on September 2019).

S.N	State	Name of Institute (SCI/TCCC)	Total Amount Recommended (Equip.+ Cons)	Central share released	State share released	Status of Construction/Civil Work	Functional/ Completion of project (%age)
1	Assam	Gauhati Medical College & Hospital, Guwahati, SCI	Rs.119.90 cr. (Equip: Rs. 88.20 cr. Cons: Rs. 31.70 cr.)	Rs. 80.932 cr. (Rs. 8.43 cr. during 2016-17, Rs. 30.00 cr. during 2017-18 and Rs. 42.5025 during 2018-19)	Rs. 3.85 cr.	Tender process completed for civil work	100 % functional in existing building.
2	Gujarat	Gujarat Cancer Research Institute, Ahmedabad, SCI	Rs. 120.00 cr. (Equip: Rs. 105.84 cr. Cons: Rs. 14.16 cr.)	Rs. 67.50 cr. (2014-15)	Rs. 22.51 cr.	1A +1B building complete. 1C building to be completed by December 2019.	80 %
3	Haryana	Civil Hospital, Ambala Cantt, TCCC	Rs. 45 cr. (Equip: Rs. 33.40 cr. Cons: Rs. 11.6 cr.)	Rs. 20.25 cr. [Rs. 9.2253 cr. during 2016-17, Rs. 2.925 cr. during 2017-18 and Rs. 8.0997 cr. during 2018-19]	Rs. 8.1 cr.	Structural work complete. 1st & 2nd Floor flooring completed. Electrical panel installation, HVAC work under progress.	-
4	Karnataka	Kidwai Memorial Institute of Oncology (RCC), Bangaluru, SCI	Rs. 120.00 cr. (Equip: Rs. 115 cr. Cons: Rs. 5.0 cr.)	Rs. 67.50 cr.	Rs. 48.00 cr.	Work related to Construction of Radiotherapy wing with LINAC Bunkers, Electrical power supply etc. completed.	96 %
5	Karnataka	Mandya Institute of Medical Sciences, Mandya, TCCC	Rs. 45.00 cr. (Equip: Rs. 33 cr. Cons: Rs. 12 cr.)	Rs. 17.257 cr. (2015-16)	Rs. 12.75 cr.	80% of main block civil construction is over, Electrical work yet to start.	50%
6	Madhya Pradesh	G.R. Medical College, Gwalior, TCCC	Rs. 42.00 cr. (Equip: Rs. 35 cr. Cons: Rs. 7 cr.)	Rs. 18.90 cr. (2017-18)	-	Under progress	-

7	Madhya Pradesh	Netaji Subhas Chandra Bose Medical College, Jabalpur, SCI	Rs. 120.00 cr. (Equip: Rs. 84 cr. Cons: Rs. 36 cr.)	Rs. 17.299 cr. (2019-20)	Not yet reported by the Institute (SCI has been approved and funds released during August 2019)		
8	Maharashtra	Rashtrasant Tukdoji Regional Cancer Hospital & Research Centre, Nagpur, TCCC	Rs. 44.991 cr. (Equip: Rs. 31.339 cr. Cons: Rs. 13.66 cr.)	Rs. 20.176 cr. [Rs. 15.32 cr. during 2016-17 and Rs. 4.8564 during 2017-18]	Rs. 9.258 cr.	Infrastructure work for CT Scan room, chemo day care ward, Modular OT completed.	100% compliance in Equipment purchase. 80% compliance in Construction.
9	Maharashtra	Government Medical College, Aurangabad, SCI	Rs. 96.70 cr. (Equip: Rs. 69.78 cr. Cons: Rs. 26.92 cr.)	Rs. 43.515 cr. (2017-18)	Rs. 27.49 cr.	Administrative approval obtained. Final DPR prepared by HSCC India Ltd. work will start soon.	-
10	Maharashtra	Vivekanand Foundation & Research Centre, Latur, TCCC	Rs. 45.00 cr. (Equip: Rs. 43.50 cr. Cons: Rs. 1.5 cr.)	Rs. 20.25 cr. (2017-18)	Rs. 8.205 cr.	No New construction at present.	60%
11	Mizoram	Mizoram State Cancer Institute, Aizawl TCCC	Rs. 44.27 cr. (Equip: Rs. 29.08 cr. Cons: Rs. 15.19 cr.)	Rs. 14.64 cr. (2015-16)	Rs. 1.623 cr.	100% of civil works (Bunker for LINAC). 40% of electrification & other works.	-
12	Punjab	Government Medical College, Amritsar SCI	Rs. 114.61 cr. (Equip: Rs. 74.51 cr. Cons: Rs. 40.10 cr.)	Rs. 51.58 cr. (2016-17)	Rs. 3.122 cr.	Construction of main SCI block started and 25% of foundation work completed.	-
13	Punjab	Civil Hospital, Fazilka TCCC	Rs. 44.71 cr. (Equip: Rs. 33.30 cr. Cons: Rs. 11.41 cr.)	Rs. 20.119 cr. 2016-17)	Rs. 1.28 cr.	-	Would be functional by March 2020
14	Rajasthan	S P Medical College, Bikaner TCCC	Rs. 38.05 cr. (Equip: Rs. 29.15 cr. Cons: Rs. 8.9 cr.)	Rs. 17.123 cr (2015-16)	Not reported by the Institute	Bunker for High Energy LINAC, Room for CT Simulator, Brachytherapy completed. Bunker for Low Energy LINAC under construction.	60%

15	Rajasthan	SMS Medical College, Jaipur SCI	Rs. 119.25 cr. (Equip: Rs. 83.25 cr. Cons: Rs. 36 cr.)	Rs. 44.8077 cr. [Rs. 40.6683 cr during 2016-17 and Rs. 4.1394 cr. during 2017-18]	Rs. 5.00 cr.	Basement and Ground floor finishing in progress. Outer development and ramp work in progress.	Almost 96% of construction has been completed & equipment are being procured.
16	Rajasthan	Jhalawar Medical College & Hospital, Jhalawar TCCC	Rs. 43.90 cr. (Equip: Rs. 38.90 cr. Cons: Rs. 5.00 cr.)	Rs. 19.755 cr. (2017-18)	Rs. 25 lakhs	Tender has been decided by Implementation Agency- RSRDC. At proposed site for construction, old T.B. Hospital building has been dismantled. Civil work to start soon.	Tender has been decided by Implementation Agency- RSRDC. At proposed site for construction, old T.B. Hospital building has been dismantled. Civil work to start soon.
17	Uttar Pradesh	Sanjay Gandhi Postgraduate Institute of Medical Sciences, Lucknow TCCC	Rs. 45.00 cr. (Equip: Rs. 45.00 cr. Cons: Nil)	Rs. 11.43 cr. (2015-16)	Rs. 7.62 cr.	No major construction. Minor renovations and modifications completed.	No major construction. Minor renovations and modifications completed.

Source: (Ministry of Health and Family Welfare, 2019)

Other sanctioned SCIs/TCCCs

S.N.	States/UTs	SCIs / TCCCs	Total Funds Released till 2017-18 (INR Crore)
1	Kerala	Government Medical College, Kozhikode (TCCC)	25.03
2	Kerala	Regional Cancer Centre, Thiruvananthapuram (SCI)	46.957
3	Tripura	Cancer Hospital (RCC), Agartala (SCI)	55
4	West Bengal	Government Medical College, Burdwan (TCCC)	22.24
5	West Bengal	Murshidabad Medical College & Hospital, Berhampore, Murshidabad (TCCC)	10.9843
6	West Bengal	Sagore Dutta Memorial Medical College and Hospital, Kolkata (TCCC)	20.25
7	Jammu & Kashmir	Sheri Kashmir Institute of Medical Sciences, Srinagar (SCI)	47.25
8	Jammu & Kashmir	Government Medical College, Jammu (SCI)	Data not available
9	Tamil Nadu	Cancer Institute (RCC), Adyar, Chennai (SCI)	67.38
10	Himachal Pradesh	Indira Gandhi Medical College, Shimla (TCCC)	14.87
11	Himachal Pradesh	Shri Lal Bahadur Shastri Medical College, Mandi (TCCC)	12.1932
12	Bihar	Indira Gandhi Institute of Medical Sciences, Patna (SCI)	33.06
13	Telangana	MNJ Institute of Oncology & RCC, Hyderabad (SCI)	18.12
14	Delhi	Lok Nayak Hospital (TCCC)	29.87
15	Odisha	Acharya Harihar Regional Cancer Centre, Cuttack (SCI)	35.829
16	Nagaland	District Hospital, Kohima (TCCC)	13.23

17	Jharkhand	Rajendra Institute of Medical Sciences, Ranchi (SCI)	22.95
18	Andhra Pradesh	Kurnool Medical College, Kurnool (SCI)	54
19	Goa	Goa Medical College, Panaji (TCCC)	8.3519
20	Sikkim	Multispecialty Hospital at Sochygang (Sichey), Sikkim (TCCC)	23.01
	Total	20	1045.7082

Source: (Funds Released for SCI & TCCCs under NPCDCS from 2014-15 to 2017-18 , 2018)

Funds released to Regional Institutes of Ophthalmology (RIOs)

Sl. No.	Name of the RIOs through respective State Health Society	2013-14	2014-15	2016-17	2017-18	Grand Total (2013-14 to 2017-18)
1	RIO, Patna, Bihar		100			100
2	RIO, Ahmedabad, Gujarat		100		200	300
3	RIO, Guwahati, Assam		100			100
4	RIO, Amritsar, Punjab		100			100
5	RIO, Thiruvananthapuram, Kerala		300			300
6	RIO, Kolkata, West Bengal	100	200		300	600
7	RIO, Minto RIO Bangalore, Karnataka		100		200	300
8	RIO, Srinagar, J& K		100			100
9	RIO, Cuttack, Odisha		100			100
10	RIO, Dr. R.P. Centre, Delhi					0
11	RIO, Chennai			100		100
12	RIO, Allahabad			100	200	300
13	RIO, Bhopal M.P.					0
14	RIO, Raipur, Chhattisgarh			100	200	300
15	RIO, Jaipur, Rajasthan				200	200
16	RIO, Ranchi, Jharkhand				200	200
17	RIO Rohtak, Haryana			100		100
18	R.IO Mumbai, Maharashtra				200	200
19	RIO, Hyderabad Telangana		300		200	500
	Total	100	1500	400	1900	3900
*	During FY: 2015-16 and 2018-19 no funds were released.					

Source: (Quarterly Review: National Programme for Control of Blindness & Visual Impairment, 2019)

Status of Trauma Care Facilities identified during 11th Five-Year Plan
A. Functional Trauma Care Facilities (105)

S. No	Name of the Hospital	Level
Andhra Pradesh		
1	Community Hospital, Penukonda	III
2	Taluk Hospital, Tekkali	III
3	King George Hospital/Andhra Medical College, Visakhapatnam	II
4	Area/ Tuni taluk Hospital, east Godavari District	III
5	District Hospital, Rajahmundry, East Godavari	II
6	District Hospital, Eluru, West Godavari	III
7	District Hospital, Ongole	III
8	District Hospital, Nellore	II
9	Taluk Hos. Nayadupet	III
10	Govt. General Hospital & Medical College, Kurnool	II
11	District Hospital, Srikakulam	II
12	Medical College, Guntur	II
13	Dist. Hospital Anantpur	II
Assam		
14	Medical College & Hospital, Silchar	II

Appendices

15	Civil Hospital, Haflong	III
16	Civil Hospital, Diphu	III
17	District Hospital, Nagaon	II
18	Medical College & Hospital, Guwahati.	II
19	District hospital, Nalbari	III
20	Civil Hospital, Bogaigaon	III
Gujarat		
21	Civil Hospital, Palanpur.	II
22	Civil Hospital, Radhanpur	III
23	General Hospital, Morbi	II
24	Pt. Deen dayal Upadhayaya Hospital, Rajkot	II
25	CHC, Jetpur	III
26	General Hospital, Porbandar	III
27	General Hospital, Valsad	II
28	Govt. Medical College, Surat	II
29	District Hospital, Bharuch	III
30	SSG Hospital & Medical College, Vadodara	II
31	District Hospital, Himmat Nagar	III
32	SA Hospital, Bachau, Kutch	III
Haryana		
33	Dist. Hospital, Ambala	II
34	District Hospital, Rewari	III
35	B.S.S. General Hospital, Panipat	III
Jammu & Kashmir		
36	MMAM District Hospital, Anantnag	III
37	Trauma Hospital, Ramban, Doda	III
38	Govt. District Hospital, Udhampur	II
Karnataka		
39	Tumkur District Hospital	III
40	Taluq Hospital, Sira	III
41	Civil Hospital, Chitradurga	II
42	Civil Hospital, Devangiri	III
43	Karnataka Institute of Medical Science, Hubli, Dharward	II
44	District Hospital, Haveri	III
45	District Hospital, Belgaum	III
46	District Hospital, Chickbalapur	III
Madhya Pradesh		
47	Civil Hospital, Shivpuri	II
48	G R Medical College Hospital, Gwalior	II
49	District Hospital Narsimhapur	III
50	District Hospital, Seoni	III
51	District Hospital, Sagar	II
Maharashtra		
52	GMCH, Kolhapur	II
53	District Hospital, Satara	III
54	BJ Medical College, Pune	II
55	Municipal Hospital, Vashi	III
56	Sub District Hospital, Hinganghat, Wardha	III
Odisha		
57	District Hospital, Balasore	II
58	District Hospital, Bhadrak	III
59	SCB Medical College, Cuttack	I
60	District Hospital, Khurda	III
61	MKCG Medical College, Behrampur	II
Punjab		
62	Sub-District Hospital, Pathankot	III
63	District Hospital, Jalandhar	II

64	District Hospital, Khanna	III
Rajasthan		
65	Government Hospital, Baran	III
66	New Medical College Hospital, Kota	II
67	SS Hospital, Chittorgarh	III
68	RNT Medical College, Udaipur	II
69	District Hospital, Bhilwara	III
70	JLN Medical College, Ajmer	II
71	SMS Medical College, Jaipur	II
72	Taluk Hospital, Kotputli, Alwar	III
73	Govt. Hospital, Sirohi	III
74	Civil Hospital Dungarpur. Sabarkantha	III
Telangana		
75	District Hospital, Mehboobnagar	III
76	Rajiv Gandhi Inst. Of Medical sciences, Adilabad	II
77	Area Hospital, Kamareddy	III
78	Distt. Hqr Hospital, Nizamabad	
Tamil Nadu		
79	Kilpauk Medical College, Chennai	II
80	GMC, Vellore	II
81	Taluk Hospital, Krishnagiri	III
82	Govt. District Hqr. Hospital, Karur	III
83	District Hospital, Dindigul	II
84	Govt. Rajaji Hospital Medical college,Madurai	II
85	District Hqr. Hospital, Kovilpatti	III
86	GMCH, Tirunelveli	II
87	GMCH, Kanyakumari	II
Uttar Pradesh		
88	BRD Medical College, Gorakhpur	II
89	District Hospital, Faizabad	III
90	KGM College, Lucknow	II
91	LLR Hospital & GSVM College, Kanpur	II
92	District Hospital, Jaluan, Orai	III
93	MLB Medical College, Jhnasi	II
94	District Hospital, Basti	III
95	SN Medical College, Agra	II
96	Shri BA District Hospital, Etawah	III
97	District Hospital, Fatehpur	III
98	MLN Medical College, Allahabad	II
99	LLRM Medical College, Meerut	II
100	District Hospital, Lalitpur	II
West Bengal		
101	North Bengal Medical College & hospital, Siliguri	II
102	Islampur SD Hospital, Uttar Dinajpur	III
103	Sub Divisional, Asansol	II
104	Burdwan Medical College & Hospital, Burdwan	II
105	Sub-District Hospital, Kharagpur	III

B. Trauma Care Facilities under Construction (7)

S. No	Name of the Hospital	Level
Maharashtra		
1	Sub District Hospital Danau, Thane	III
Bihar		
2	District Hospital, Purnia.	III
3	S.K. Medical College Hospital, Muzaffarpur.	II

4	Sadar Hospital, Sasaram, Rohtas	III
5	AN Magadh Medical College Hospital, Gaya	II
6	Civil Hospital, Madhepura	III
7	Darbhanga Medical College Hospital, Darbhanga.	II

C. Trauma Care Facilities in which construction not started

S. No	Name of the Hospital	Level
Bihar		
1	Civil Hospital, Kishanganj.	III
2	Civil Hospital, Jhanjarpur.	III
3	Civil Hospital, Gopalgunj.	III
Jharkhand		
4	Patliputra Medical college, Dhanbad	II

Source: (National Programme for Prevention and Management of Trauma and Burn Injuries, 2019)

List of Trauma Care Facilities supported during 12th Five-Year Plan

S. No.	State	Name of Hospital	Level
1	**Andhra Pradesh**	General Hospital Kakinada	L-II
2	**A & N**	Dr. R P Hospital, Mayabunder	L-III
3		General Hospital, Bomdila	L-III
4	**Arunachal Pradesh**	District Hospital, Roing	L-III
5		District Hospital, Tezu	L-III
6		District Hospital, Khonsa	L-III
7		BR Ambedkar Memorial Hospital, Raipur	L-II
8		Chhattisgarh Institute of Medical Sciences, Bilaspur	L-II
9	**Chhattisgarh**	Govt. Komaldeo District Hospital, Kanker	L-III
10		District Hospital, Raigarh	L-III
11		Baliram Kashyap Memorial Medical College, Jagdalpur	L-II
12		District Hospital, Ambikapur	L-III
13	**D & N Haveli**	CHC Khanvel	L-III
14		District Hospital Koderma	L-III
15	**Jharkhand**	Sadar Hospital Daltanganj	L-III
16		District Hospital, Gumla	L-III
17	**Jammu & Kashmir**	S.N.M. Hospital, Leh	L-III
18		District Hospital,Kupwara	L-III
19		Guru Govind Singh Hospital Jamnagar	L-II
20	**Gujarat**	Sir Takhtsinh General Hospital & Govt. Medical College, Bhavnagar	L-II
21		District Hospital, Veraval	L-III
22	**Goa**	Govt. Medical College, Goa	L-I
23		District Hospital, Chamba	L-III
24		Regional Hospital Hamirpur	L-III
25	**Himachal Pradesh**	RP Medical College, Tanda,	L-II
26		Zonal Hospital Mandi	L-III
27		Regional Hospital Rampur, Shimla	L-III
28		IGMC Govt. Hospital, Shimla, Himachal Pradesh	L-I
29		Govt. Medical College, Alappuzha	L-II
30		General Hospital, Ernakulam	L-III
31	**Kerala**	District Hospital, Kannur	L-III
32		District Hospital Palakkad	L-II
33		Govt. Medical College Hospital, Kozhikode	L-I
34		Government Medical College & Hospital, Thiruvananthapuram	L-II
35		Regional Institute of Medical Sciences, Imphal	L-I
36	**Manipur**	District Hospital, Churachandpur	L-III
37		District Hospital Senapati	L-III
38		District Hospital Bishunpur	L-III

39		Thoubal District Hospital	L-III
40		Chandel District Hospital	L-III
41	**Meghalaya**	Civil Hospital, Tura	L-III
42		Civil Hospital Nongpoh	L-III
43		Civil Hospital Shillong	L-II
44	**Mizoram**	Civil Hospital, Aizawl	L-II
45		District Hospital, Lawngtlai	L-III
46		District Hospital, Saiha	L-III
47		District Hospital, Lunglei	L-III
48		District Hospital Kolasib	L-III
49		District Hospital Champhai	L-III
50		District Hospital Serchhip	L-III
51	**Nagaland**	District Hospital, Tuensang	L-III
52		District Hospital, Kiphiri	L-III
53		District Hospital, Mon	L-III
54		Naga Hospital Kohima	L-II
55		District Hospital, Dimapur	L-III
56	**Odisha**	District Hospital, Puri	L-III
57	**Punjab**	District Hospital Fazailka	L-III
58		District Hospital Ferozpur	L-III
59	**Uttarakhand**	District Hospital, Baurari, New Tehri	L-III
60		Government Medical College, Haldwani	L-II
61		Combined Hospital Roorkee	L-III
62		Doon Medical College & Hospital	L-II
63	**Tripura**	Dharma Nagar, Sub-Divisional Hospital	L-III
64		Santirbazar PHC, Divisional Hospital	L-III
65		District Hospital, Gomati	L-III
66		Agartala Govt. Medical College	L-II
67		District Hospital, Dhalai	L-III
68	**Tamil Nadu**	Govt. District Head Quarters Hospital, Kallakurichi	L- III
69		Govt. District Head Quarters Hospital, Kumbakonam	L-III.
70		Chengalpattu Govt. Medical College & Hospital	L-I.
71		Coimbatore Medical College	L-II.
72	**Sikkim**	District Hospital Namachi	L-III
73		District Hospital, Singtam	L-III
74		District Hospital, Mangan	L-III
75		STNM Hospital Gangtok	L-II
76	**West Bengal**	District Hospital, Alipurduar	L-III
77		Murshidabad Medical College	L-II
78		Ranaghat Sub Divisional Hospital, Nadia	L-III
79		Diamod Harbour District Hospital	L-III
80		Raiganj District Hospital, Uttar Dinajpur	L-III

Source: (National Programme for Prevention and Management of Trauma and Burn Injuries, 2019)

Medical Colleges supported for development of Burn units -47 (12th Five-Year Plan

S. No	State	District	Name of the Medical College
1	**Assam**	Dibrugarh	Assam Medical College & Hospital
2		Silchar	Silchar Medical College & Hospital
3	**Andhra Pradesh**	Kurnool	Kurnool Medical College
4		Guntur	Guntur Medical College
5		Tirupati	Shri Venkatshwara Medical College, Tirupati
6		Anantpur	Govt. Medical College Anantpur
7		Nellore	ACSR Govt. Medical College, Nellore
8		Vishakhapatnam	King George Hospital & Andhra Medical College, Vishakhapatnam

Appendices

9	**Bihar**	Patna	Patna Medical College
10		Bhagalpur	J.L.N. Medical College & Hospital
11	**Chhattisgarh**	Bilaspur	Chhattisgarh Institute of Medical Sciences
12	**Gujarat**	Rajkot	PDU Medical College
13	**Jammu & Kashmir**	Srinagar	SMHS Hospital & Medical College
14	**Madhya Pradesh**	Indore	MGM Medical College
15		Bhopal	Gandhi Medical College
16		Gwalior	G.R. Medical College, Gwalior
17		Jabalpur	Netaji Subash Chandra Bose Medical College, Jabalpur
18		Rewa	Shyam Shah Medical College, Rewa
19	**Manipur**	Imphal	Regional Institute of Medical Sciences (RIMS)
20	**Orissa**	Cuttack	S.C.B. Medical College & Hospital
21	**Punjab**	Patiala	Medical College and Hospial, Patiala
22		Faridkot	GGS Medical College Hospital Faridkot
23		Thanjavur	Thanjavur Medical College Hospital
24	**Tamil Nadu**	Trichirappallli	KAVP Govt. Medical College & Mahatma Gandhi Memorial Govt. Hospital
25		Vellore	Govt. Vellore Medical College Hospital Vellore
26		Salem	Govt. Mohan Kumarmangalam Medical College Hospital Salem
27		Coimbatore	Coimbatore Medical College Hospital, Coimbatore
28		Madurai	Madurai Medical College
29	**Uttar Pradesh**	Kanpur	GSVM Medical College
30		Lucknow	K.G. Medical University
31		Gorakhpur	B.R.D. Gorakhpur
32		Agra	S.N. Medical College, Agra
33		Allahabad	MLN Medical College Allahabd
34	**Uttarakhand**	Haldwani	Govt. Medical College, Haldwani
35		Dehradun	Medical College Doon Hospital Dehradun
36	**West Bengal**	Burdwan	Burdwan Medical College & Hospital
37		Kolkata	IPGMER, SSKM Medical College & Hospital
38		Darjeeling	North Bengal Medical College & Hospital, Darjeelin
39		Malda	Malda Medical College & Hospital, West Bengal
40		Bankura	Bankura Sammelani Medical College & Hospital
41		Murshidabad	Murshidabad Medical College & Hospital
42	**Kerala**	Kozikode	Govt. Medical College, Kozikode
43		Kottayam	Govt. Medical College Kottayam
44		Thrissur	Government Medical College, Thrissur
45		Thiruvananthapuram	Government Medical College & Hospital, Thiruvananthapuram
46	**Goa**	Goa	Govt. Medical College Goa
47	**Karnataka**	Mysore	Mysore Medical College and Research Institute, Mysore

Source: (MoHFW Burn Injury Programme, 2019)

List of Drug Treatment Clinics (DTCs) under NDDTC, AIIMS, New Delhi under the "DTC Scheme –DDAP, MOH&FW

S No.	Name of Health Facility	District	State
1	Civil Hospital	Bhatinda	Punjab
2	Civil Hospital	Kapurthala	Punjab
3	Community Clinic DTC Kotla Mubarakpur, NDDTC	New Delhi	New Delhi
4	Government Medical College	Kota	Rajasthan
5	Post-Graduate Institute of Medical Sciences	Rohtak	Haryana
6	King George Medical College	Lucknow	Utter Pradesh
7	Regional Institute of Medical Sciences	Imphal	Manipur

8	District Hospital	Thoubal	Manipur
9	District Hospital	Bishnupur	Manipur
10	District Hospital	Churachandpur	Manipur
11	King Edward Memorial Hospital	Mumbai	Maharashtra
12	Civil Hospital	Osmanabad	Maharashtra
13	Peripheral Hosptal	Mumbai	Maharashtra
14	Municipal De-Addiction Centre	Mumbai	Maharashtra
15	New Civil Hospital	Surat	Gujarat
16	North District Hospital	Mapusa	Goa
17	Naga Hospital	Kohima	Nagaland
18	Institute of Mental Health	Chennai	Tamil Nadu
19	Medical College	Dibrugarh	Assam
20	Medical College	Dhule	Maharashtra
21	Community Health Centre Soibugh	Srinagar	J&K
22	GT Hospital	Mumbai	Maharashtra
23	District Hospital	Singtam	Sikkim
24	Medical College	Agartala	Tripura
25	Medical College	Nagpur	Maharashtra
26	Mental Hospital	Indore	Madhya Pradesh
27	Institute of Mental Health	Hyderabad	Telangana

Source: (MoHFW Drug De-Addiction Programme (DDAP), 2019)

Appendices

States/Districts under National Programme for Prevention and Control of Fluorosis

Sl. No.	State	Total districts in the State	No. of districts under NPPCF	Districts under NPPCF
1.	Andhra Pradesh	13	9	Nellore, Guntur, Prakasam, Ananthapur, Kurnool, Krishna, Chittoor, Visakhapatnam Srikakulam
2.	Assam	27	7	Nagaon, Kamrup, Karbi-Anglong, Dhubri, Nalbari, Karimganj, Udalguri
3.	Bihar	38	11	Nawada, Banka, Aurangabad, Bhagalpur, Gaya, Jammui, Nalanda, Shekhpura, Kaimur, Munger, Rohtas
4.	Chattisgarh	27	5	Durg (now shifted to Balod),Kanker, Kondagaon, Korba, Mahasamund
5.	Gujarat	33	4	Jamnagar, Sabarkantha, Vadodara, Banaskantha,
6.	Haryana	21	2	Mehendragarh, Mewat
7.	J & K.	22	1	Doda
8.	Jharkhand	24	13	Palamu, Garhwa, Chatra, Hazaribagh, Ranchi, Pakur, Sahebgann, Ramgarh, Jamtara, Simdega, Dhanbad, Giriih, Godda
9.	Karnataka	30	19	Ballary, Mysore, Chikballalpur, Koppal, Davangere, Tumkur, Bagalkote, Bangaluru (Urban), Bangaluru (Rural), Bijapur, Raichur, Chitradurga,Gadag,Gulbarga, Hassan, Kolar, Mandya, Ramanagara, Shimoga
10.	Kerala	14	2	Palakkad, Alapuzha
11	Madhya Pd.	51	15	Ujjain,Chindwada, Mandla, Dhar, Seoni, Betul, Jhabua, Raigarh, Sehore, Alirajpur,Dindori, Khargoan, Raisen, Shajapur, Ratlam
12	Maharashtra	34	7	Nanded, Chandrapur, Latur, Washim, Yavatmal. Beed, Nagpur
13.	Odisha	30	3	Nayagarh, Angul, Nuapada
14	Punjab	22	3	Sangrur, Firozepur, Patiala
15.	Rajasthan	33	30	Nagaur, Ajmer, Bhilwara,Churu (Ratangarh) Dausa, Dungarpur, Rajsamand, Tonk, Bikaner, Jalore, Jaisalmer, Jodhpur, Jaipur, Pali, Sikar Udaipur, Swaimadhopur, Banswara, Karauli, Chittaurgarh, Ganganagar, Jhalawar, Jhunjhunu, Barmer, Alwar, Bharatpur, Kota, Sirohi, Bundi, Pratapgarh
16.	Tamil Nadu	31	1	Dharmapuri
17	Telangana	30	9	Mehboobnagar, Nalgonda, Karimnagar, Jagityal, Sircilla,Suryapet, Yadagiri, Wernaparthy, Nagarkurnool
18.	Uttar Pradesh	75	10	Unnao, Rae Bareli, Pratapgarh, Firozabad, Mathura, Sonbhadhra, Ghazipur, Jhansi, Varanasi, Agra
19.	West Bengal	19	6	Bankura, Purulia, Birbhum, Dakshin Dinajpur, Malda, Uttar Dinajpur.
	TOTAL		**157**	

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Development Monitoring and Evaluation Office

NITI Bhawan, Sansad Marg, New Delhi-110001

contact-dmeo@gov.In I https://dmeo.gov.In/