सत्यमेव जयते

GOVERNMENT OF INDIA
MINISTRY OF HEALTH & FAMILY WELFARE
STATISTICS DIVISION

NATIONAL HEALTH MISSION
राष्ट्रीय स्वास्थ्य मिशन

HMIS
HEALTH MANAGEMENT INFORMATION SYSTEM

HMIS 2020-21 & 2021-22

(An Analytical Report)

राजेश भूषण, आईएएस
सचिव
RAJESH BHUSHAN, IAS
SECRETARY

भारत सरकार
स्वास्थ्य एवं परिवार कल्याण विभाग
स्वास्थ्य एवं परिवार कल्याण मंत्रालय
Government of India
Department of Health and Family Welfare
Ministry of Health and Family Welfare

FOREWORD

The rapid progress in Public Health over the years and especially during the pandemic and post pandemic period under National Health Mission, MoHFW has proven that our country's healthcare infrastructure can withstand such adverse conditions.

Health Management Information System (hmis.nhp.gov.in) of Ministry of Health & Family Welfare is operational since 2008 and is an exclusive source of regular information for facility level health data nationwide. The huge amount of data that is available through HMIS of our country is a great support for Policy formulation and Planning in Health. HMIS data is exclusively used for Monitoring of various health programmes/ schemes under NHM.

"HMIS 2020-21 & 2021-22 An Analytical Report" is based on analysis of data uploaded by States/ UTs on the HMIS portal. Analysis of the collected dataenables us to assess whether and how our program has achieved its objectives. HMIS data informs government about health status of country and eventually helps in evidence based decisions making and is a source for mid-term course corrections too. This publication provides an insight into various major programmes of NHM being implemented and run in the country currently by MoHFW.

I am sure that this publication would provide valuable support to the users and will serve as a tracker to the growth of the various programmes and schemes of NHM. Any suggestions/comments for improving the contents and layout of the publication will be highly appreciated.

Date : 30 December, 2022

(**RAJESH BHUSHAN**)

Room No. 156, A-Wing, Nirman Bhawan, New Delhi-110 011
Tele : (O) 011-23061863, 23063221, Fax : 011-23061252, E-mail : secyhfw@nic.in

भारत सरकार
स्वास्थ्य एवं परिवार कल्याण मंत्रालय
निर्माण भवन, नई दिल्ली - 110011
Government of India
Ministry of Health & Family Welfare
Nirman Bhavan, New Delhi - 110011

रोली सिंह, भा.प्र.से.
Roli Singh, I.A.S.
अपर सचिव एवं मिशन निदेशक (रा.स्वा.मि.)
Additional Secretary & Mission Director (NHM)

Acknowledgement

The Health Management Information System (HMIS) is a web based portal for Monitoring of various programmes under National Health Mission (NHM) and other national health programmes. **"HMIS 2020-21 & 2021-22 An Analytical Report"** has been prepared on the basis of the National Health Mission data reported through HMIS by around 2.25 lakh health facilities from all States/UTs during the financial year 2020-21 and 2021-22

The report covers the introduction of HMIS 2.0, its genesis and new features. Analysis of data related to various programmes under RCH viz. Maternal Health, Child Health, Family Planning, Immunization, Adolescent Health, Patient Services, Diagnostic Service – Lab & Radiology has been done in detail. This time the publication is also providing a comparative analysis of various parameters for two financial years. The publication is bought out for the second time now.

This would be the right place to mention that the HMIS data is being actively utilised to monitor the implementation of Programme Implementation Plan (PIPs) of States/ UTs, monitoring the delivery of services to beneficiaries under various health schemes funded by GoI, Grading/ Ranking of health facilities, as a conditionality framework for incentive or dis-incentive under NHM, monitoring of aspirational districts, State health index, DH ranking, PM Dashboard (Prayas), Data.Gov.in, Rural Health Statistics, Monitoring of Aspirational Districts and Low performing districts (Mission UTKARSH) etc.. The Monitoring visits such as CRM, supportive supervision visits also uses HMIS data. The analytical reports generated through HMIS also provides gap analysis and evidence based course correction.

I duly acknowledge the valuable contribution of the National HMIS team under overall guidance of Ms. Anjali Rawat, DDG (Stats), Shri Anindya Saha, DD (Stats) and all HMIS Consultants in bringing out of this publication.

Roli Singh
(AS&MD)

Tele : 011-2306 3693, Telefax : 011-2306 3687, E-mail : asmd-mohfw@nic.in

ANJALI RAWAT
Deputy Director General
Tele. : 011-23736982
E-mail : anjali.rawat79@nic.in

भारत सरकार
स्वास्थ्य एवं परिवार कल्याण मंत्रालय
इण्डियन रेड क्रॉस सोसाइटी बिल्डिंग
रेड क्रॉस रोड़, नई दिल्ली–110001
GOVERNMENT OF INDIA
MINISTRY OF HEALTH & FAMILY WELFARE
INDIAN RED CROSS SOCIETY BUILDING
RED CROSS ROAD, NEW DELHI - 110001

PROLOGUE

Health Management Information System (HMIS) is the central MIS system of Ministry of Health and Family Welfare. HMIS data serves as important data repository to MoHFW as well as all the stakeholders working in the field of Health.

The HMIS annual report is based on the analysis of HMIS data for 2020-21 and 2021-22. This is an attempt to provide the comprehensive data on various Health indicators in one report.

The current publication consists of 10 chapters based on the thematic areas related to health. Chapter 1 introduces HMIS, its journey, magnitude of data collection, Key features of HMIS 2.0, data captured in HMIS, Categorization of facilities, available in HMIS, details about the data quality measures adopted in HMIS. Chapter 2 provides details about Reproductive, Maternal, Newborn, Child and Adolescent Health (RMNCH+A) with details on Maternal Health related indicators performance. Chapter 3 details about the indicators of Child Health like HBNC, NRC, Early Initiation of Breast feeding, Low Birth Weight Infant (<2.5 Kg), Pre-term (High Risk) babies, SNCU, RBSK along with the Still Birth Rate, Sex Ratio, Infant and Child Mortality. Chapter 4 provides information about indicators related to immunization programme with respect to full immunization of Pregnant Women and Children, coverage Measles, Rubella, OPV-0, Hept-B, Pentavalent, Rotavirus vaccine and AEFI. Chapter 5 provides information about unmet need, Key Data Elements for Family Planning under HMIS, Antara Programme, IUCD, PPIUCD, male and female sterilizations and coverage of other spacing methods like OCPs, and Condoms.

Chapter 6 provides indicators performances related to Adolescent Health programme, Number of boys and girls registered in AFHC, Adolescents receiving Clinical and Counselling services at AFHC, WIFS, School Health and Wellness Programme, Menstrual Hygiene Programme. Chapter 7 provides information about various Diagnostics services under Lab and Radiology like Lab Test and OPDs/IPD, Ultrasound, X-Ray, HV Test, ICTC, malaria test, Widal test and Syphilis Tests. Chapter 8 provides information about FRUs, essential criteria for FRUs, Current Status of FRUs along with its coverage as per the facilities. Chapter 9 provides information about Patient Services Utilization, OPD, IPD, OPD per facility type, OPD Services per Doctor per year at Public Health Facilities, Lab Tests per and Lab Technician at Public Health Facilities. Chapter 10 provides information about An Analysis of HMIS Data on District Hospitals

I am greatly indebted to my colleagues from different State/UTs who have uploaded the information on HMIS web portal in time. I wish to thank all the Officers of Statistics Division of MoFHW, including Mr. Anindya Saha, Deputy Director (Statistics) and all HMIS Consultants in analysing HMIS data and preparing this analytical report and making possible to publish this report.

(Anjali Rawat)

CONTENTS

ABBREVIATIONS

AEFI:	Adverse Events Following Immunization
AFHC:	Adolescent Friendly Health Clinics
ANC:	Ante Natal Care
ANM:	Auxiliary Nurse Midwife
ARSH:	Adolescent Reproductive Sexual Health
ASHA:	Accredited Social Health Activist
AYUSH:	Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homoeopathy
CBR:	Crude Birth Rate
CHC:	Community Health Centre
CSSM:	Child Survival and Safe Motherhood
DEIC:	District Early Intervention Centre
DH:	District Hospital
DHQ:	District Headquarters
ECP:	Emergency Contraceptive Pills
EDD:	Expected Date of Delivery
FBNC:	Facility Based Newborn Care
FHS:	Foetal Heart Sound
FRU:	First Referral Unit
G2G:	Government-to-Government
GDM:	Gestational Diabetes Mellitus
GIS:	Geographic Information System
HBNC:	Home Based Newborn Care
HBsAg:	Hepatitis B Surface Antigen
HMIS:	Health Management Information System
HR:	Human Resources
IGT:	Impaired Glucose Tolerance
IMI:	Intensified Mission Indradhanush
IMR:	Infant Mortality Rate
IPHS:	Indian Public Health Standards
IPV:	Inactivated Poliovirus Vaccine
IUCD:	Intrauterine Contraceptive Device
JE:	Japanese Encephalitis
JSSK:	Janani Shishu Suraksha Karyakram
JSY:	Janani Suraksha Yojana
LHV:	Lady Health Visitors
LMP:	Last Menstrual Period
MCH:	Maternal and Child Health
MDG:	Millennium Development Goals
MI:	Mission Indradhanush
MIS:	Management Information System
MMU:	Mobile Medical Unit
MNT:	Medical Nutrition Therapy

MO: Medical Officer
MOHFW: Ministry of Health & Family Welfare
MR: Measles Rubella
MTP: Medical Termination of Pregnancy
NBCCs Newborn Care Corners
NDQF: National Data Quality Forum
NFHS: National Family Health Survey
NHM: National Health Mission
NNMB: National Nutrition Monitoring Bureau
NPP: National Population Policy
NRC: Nutritional Rehabilitation Centre
NRHM: National Rural Health Mission
NSV: Non Scalpel Vasectomy
NTAGI: National Technical Advisory Group on Immunization
NVBDCP: National Vector Borne Disease Control Programme
OCPs: Oral Contraceptive Pills
OGTT: Oral Glucose Tolerance Test
OPV Oral Polio Vaccine
PCPNDT: Pre-Conception and Pre-Natal Diagnostic Techniques
PCV: Pneumococcal Conjugate Vaccine
PHC: Primary Health Centre
PIP: Programme Implementation Plan
PNC: Post Natal Care
PPIUCD: Postpartum Intrauterine Contraceptive Device
PPS: Post-Partum Sterilization
PRCs: Population Research Centre
PTK: Pregnancy Test Kits
PVV: Rotavirus vaccine
QOC: Quality Of Care
RBSK: Rashtriya Bal Swasthaya Karyakram
RCH: Reproductive and Child Health
RDA: Recommended Dietary Allowances
RKS: Rogi Kalyan Samiti
RKSK: Rashtriya Kishor Swasthya Karyakram
RPR: Rapid Plasma Reagin
SAM: Severe Acute Malnutrition
SAS: Statistical Analysis System
SBA: Skilled birth attendant
SBR: Still Birth Rate
SC: Sub Centre
SDG: Sustainable Development Goals
SDH: Sub District/ Divisional Hospital
SNCUs: Sick Newborn Care Units
SRS: Sample Registration System

STD:	Sexually Transmitted Disease
TFR:	Total Fertility Rate
UIP:	Universal Immunization Programme
ULB:	Urban Local Body
UTs:	Union Territories
VDRL:	Venereal Disease Research Laboratory
VLBW:	Very Low Birth Weight
WIFS:	Weekly Iron folic acid

CHAPTER 1

INTRODUCTION

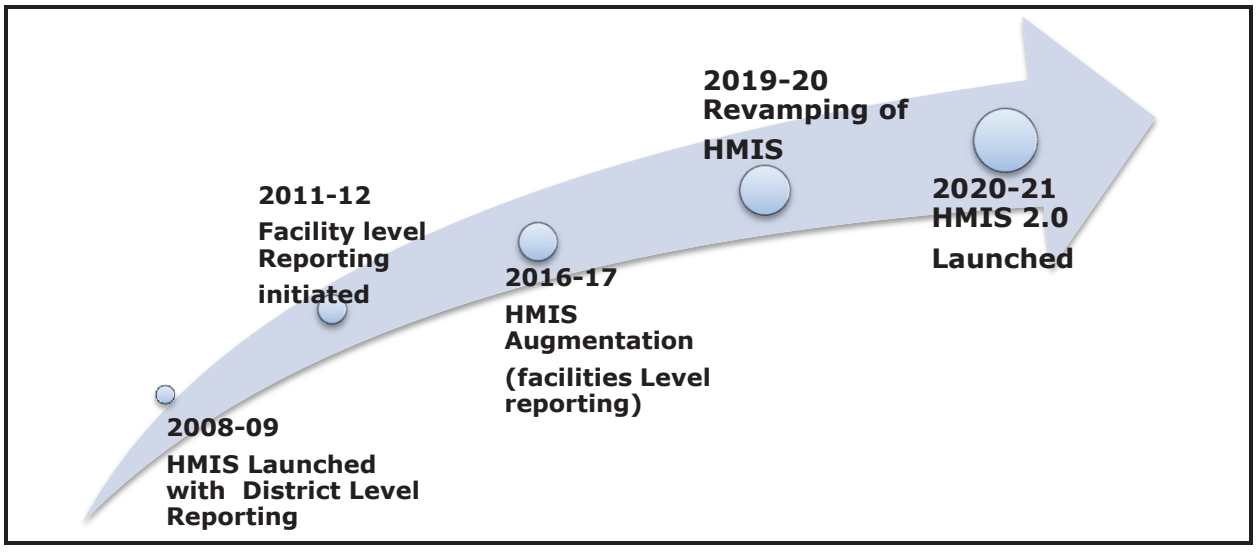
Health Management Information System (HMIS) is a web-based Monitoring Information System of Ministry of Health & Family Welfare to monitor the National Health Mission, and other various other National Health Programmes of the Ministry. It provides key inputs for policy formulation and appropriate programme interventions. HMIS is designed specifically to assist health departments, at all levels, in managing, planning, and monitoring and evaluation of the health programmes currently running in the country.

Considering the outdated software and hardware technologies of the existing HMIS portal and various technological requirements such as API, Real time dynamic reporting, interactive dashboard etc., revamping of the existing HMIS application was felt need. Therefore, the HMIS 2.0 was developed and launched in 2020.

1.1 Journey of HMIS

HMIS 1.0 started functioning from 2008-09 with District level reporting. Gradually, facility level data entry initiated during 2011-12 and it was completed by 2016-17. Due to technological and programme need, HMIS revamping was initiated in 2019-20 and further launched in December 2020. The details Journey of HMIS is given in Fig 1.1.

Figure 1.1: Journey of HMIS



Health Management Information System (HMIS) 2.0 is a step towards digital transformation of health services delivery in the country. During 2016-17 and 2020-21, Digital India award also received for open data domain category.

1.2 Magnitude of Data Collection

There are five types of formats available in HMIS to capture data from health facilities which include, Sub Centres (SCs), Primary Health Centres (PHCs), Community Health Centres (CHCs), Sub-District Hospitals (SDHs) and District Hospitals (DHs) across the country. As of March 2022, there were around 747 districts and around 2.17 lakh health facilities mapped and reporting through HMIS Portal.

1.3 Key features of HMIS 2.0

Data Entry:

- All types of public health facilities and private hospitals are mapped either as SC/PHC/CHC/SDH/DH and based on this mapping, set of data items for which data has to be filled are generated.
- Person Specific User Credentials (mapped to an Individual)
- Flexible: Data for multiple facilities can be entered through one credentials or one facility with one credential – as per requirement of the administrative units of States
- Compatibility with multiple devices (Mobile, Tab etc.)
- The users can enter data regarding availability of infrastructure and human resources at the facility only once in the system with an option to auto populate the same on a monthly basis. However, data can be edited as and when changes are required.
- Inbuilt Consistency check for Data Quality i.e. inter-data validation, comparison with data reported in the previous months etc.
- Offline bulk upload options for health facilities having not so good internet connectivity
- State –specific hierarchy was developed

Integration with other Systems:

- Linkage through API with other national level portal of Ministry of Health & Family Welfare, Ministry of Rural Development, Ministry of Tribal Affairs etc.

- State specific generic API for fetching data from State MIS portal (like PCTS portal of Rajasthan)

Reporting:

- Provisioning for real-time monitoring, Alerts, Analytics GIS Integration with layers up to road, village boundary etc.
- Data Visualization through GIS and Interactive Dashboard
- Standard reports in public domain and real time reports in login available. Real time reports include data reporting status, all data items report, Key HMIS report, Min-Max, Range report etc.

1.4 Data Captured in HMIS

Data related to Service Delivery and Infrastructure/ Human Resource is captured in HMIS on monthly basis. Data for Service Delivery is to be entered every month by 5th of the following month. The data for Infrastructure/ Human Resource is also entered on monthly basis. Various modules for which data is captured in HMIS are as follows:

Service Delivery:

- Maternal Health, Child-health & Immunization, Family Planning,
- Vector Borne Disease, Tuberculosis, Morbidity and Mortality,
- OPD, IPD Services, Surgeries etc.

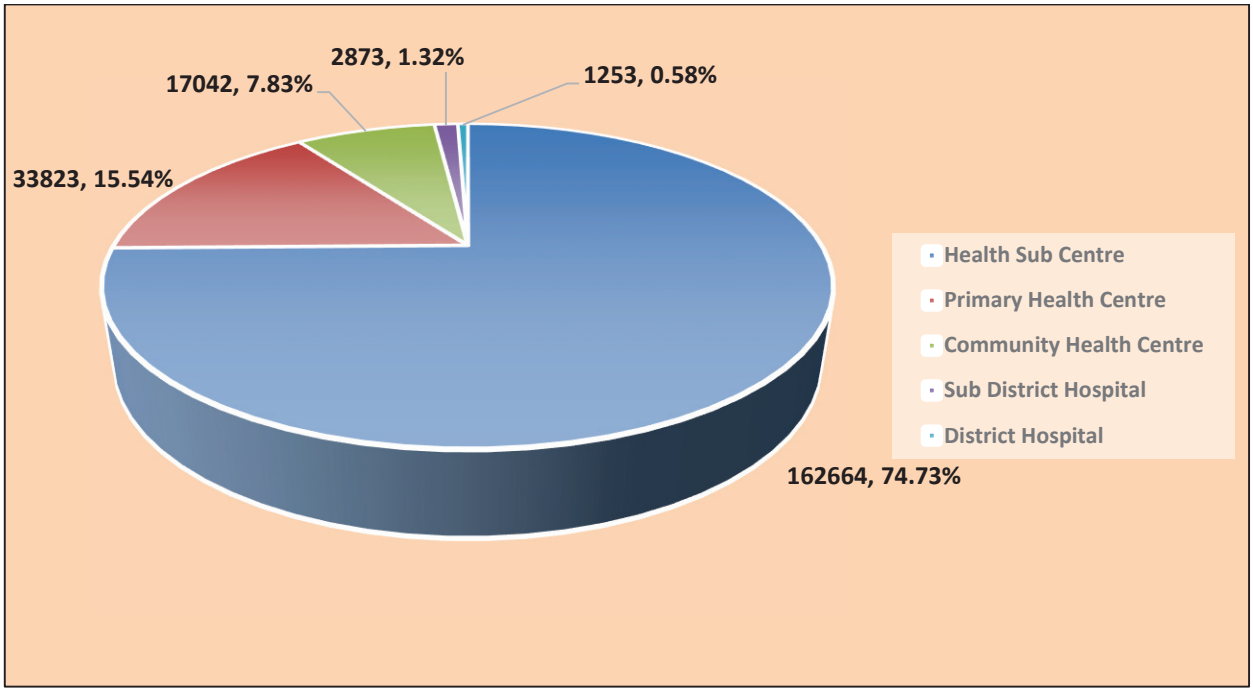
Infrastructure:

- Manpower, Equipment,
- Cleanliness, Building,
- Availability of Medical Services such as Surgery etc.,
- Super Specialties services such as Cardiology etc.,
- Diagnostics,
- Para Medical and Clinical Services etc.

1.5 Health Facilities Status

In all, there are around 2.17 lakh health facilities reported service delivery data on HMIS as on March 2022. All India distribution of health facilities by type is given in Figure 1.2.

Figure 1.2: All India Mapping Distribution of Health Facilities by type of Formats



The State/UT-wise breakup of Public Health Facilities by facility type as mapped in HMIS and Private Health Facilities by facility type as mapped in HMIS distribution as on 31st March 2022 are provided at **Annexure-1.1 and Annexure-1.2**

1.6 Categorization available in HMIS

Facility Categories:

As mentioned earlier in HMIS, the data is captured broadly on 5 types of formats i.e. SC, PHC, CHC, SDH and DH. However, on ground there are many varied facility sub types or attributes to a facility for which demarcation is required. Accordingly, the following categorization is available on HMIS:

1. Services Category: 24X7, FRU, PPP, fully IPHS compliance, Other equivalent
2. Sub Facility Type: Medical College (For DH &SDH), & Health & Wellness Centre (For PHC & SC)
3. Certifications obtained - NQAS, Kayakalp, & LaQshya
4. Funding Pattern: Funded by NUHM
5. Ranking / Grading exercises: To be Graded/Ranked
6. Administrative control: Under Civil Surgeon Admin, Under District Health Officer (DHO) Admin), State PHD administered Facilities, ULB Administered Facilities.
7. Medical Specialty - Single specialty, Multi-specialty, AYUSH, MMU, Delivery Point

8. State specific health facility/nomenclature- Boat Clinic, Dispensary, Health Unit, Standalone DH/SDH, Teaching Hospitals, Mohalla Clinic.
9. Governing Agency - Central Govt., Railways, Defense, ESI, 15th Finance Commission (FC-XV).
10. Report: Under Health Statistics for RHS Report.

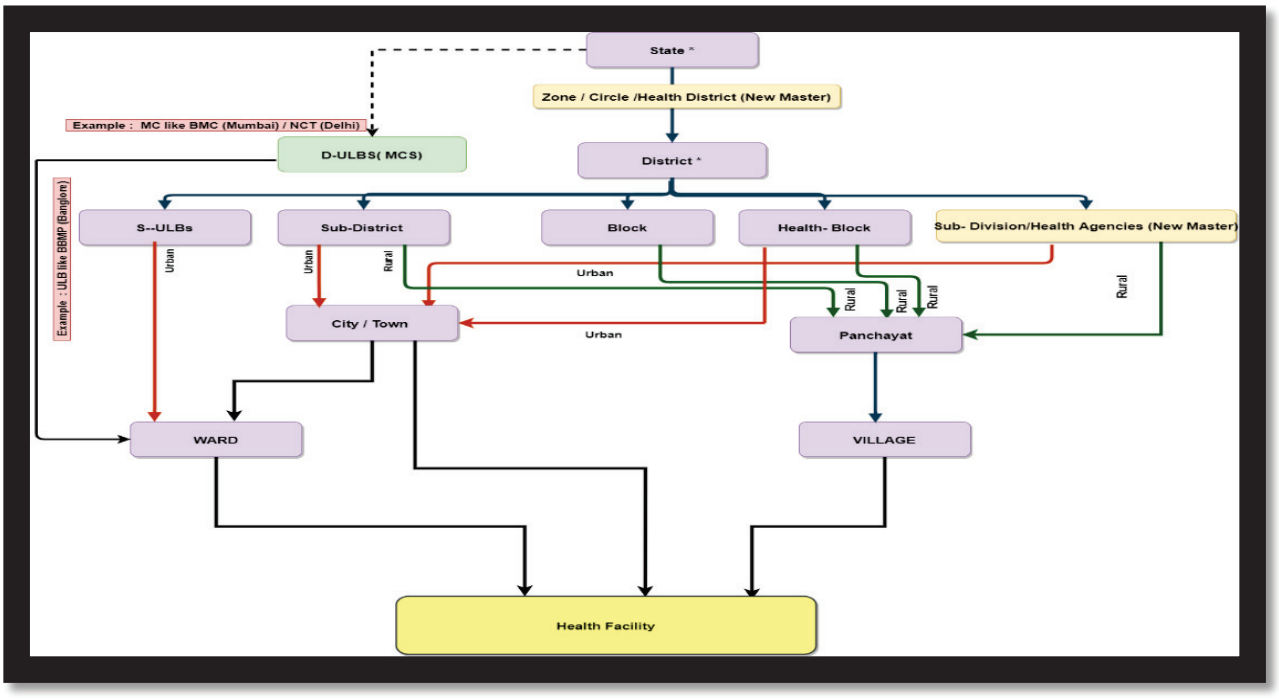
1.7 State Specific Hierarchies (Geographical)

Although the HMIS system is LGD Compliant, i.e. it follows a standard hierarchy as listed in LGD for State, District and Sub District, but as per the state's requirement, a provision has been created for incorporating state specific hierarchies below the level of sub district. The additional levels provided in HMIS are:

1. Urban Local Body (ULB) at State as well as District Level
2. Health Block
3. Sub Division / Health Agency
4. City Town

The details the generic structure of the State specific Hierarchies is given below in Fig 1.3.

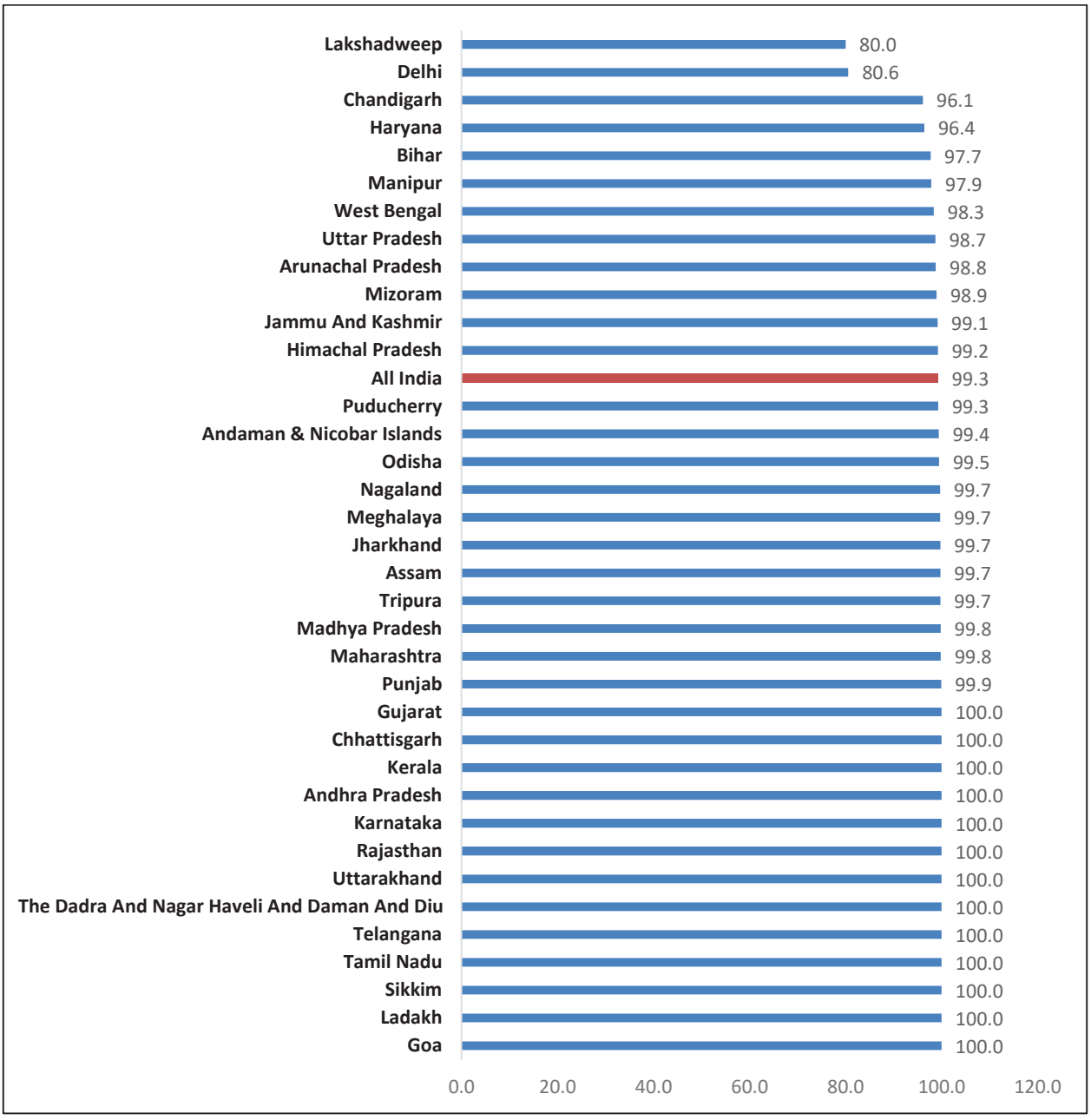
Figue 1.3: Generic Structure of the State Specific Hierarchies



1.8 Reporting in Service Delivery format by Public Health Facilities

Of 2.17 lakh health facilities, there were around 99.8% reporting at all India level by all the health facilities for service delivery format. Only Delhi and Lakshadweep has a reporting below 90 percent in March 20222. The details of all States reporting of Service delivery is given at Fig 1.4.

Figure 1.4: State/UT wise percentage distribution of reporting of monthly Service Delivery data as on 31st March 2022



1.9 Data Quality Assurance in HMIS

Data quality is defined as the degree to which the data fulfills its intended purpose. The volume of data, which HMIS generates, requires good Data quality assurance mechanism. Accordingly, a comprehensive Data Quality Assurance mechanism is in place in HMIS. Ministry give top priority to quality of data coming into HMIS.

Data reported in HMIS is expected to fulfill the various dimension of data quality. These dimensions include timeliness, completeness, consistent and correctness. To ensure timeliness, each facility is expected to enter the data by fifth day of the following month.

HMIS has placed validation rules in data entry formats to ensure data quality. There are some inbuilt data quality mechanism and some external data quality mechanism in place.

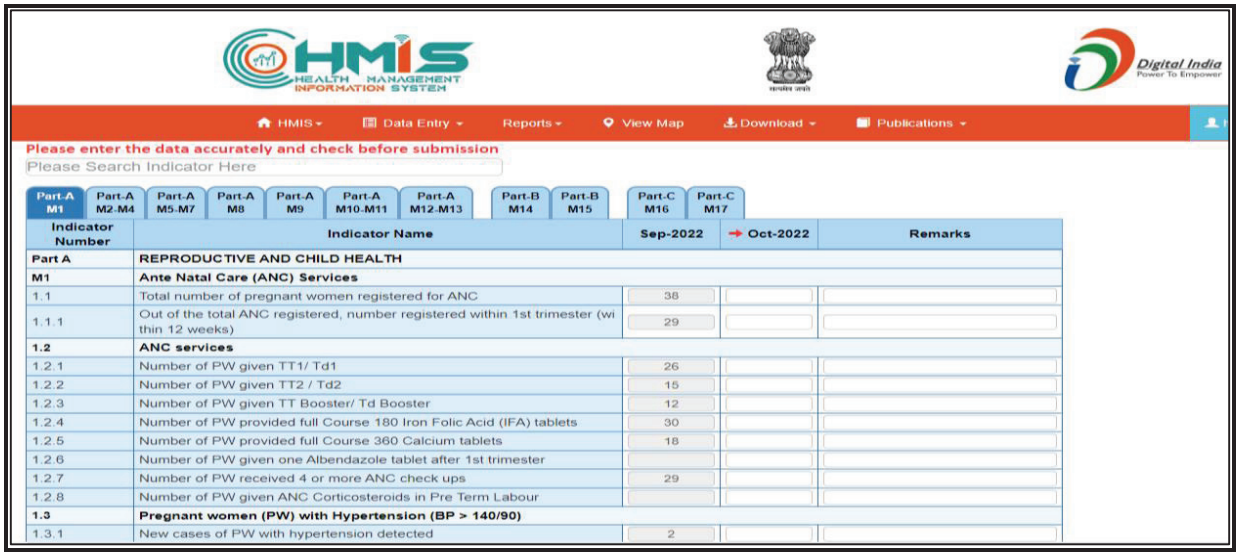
i. Inbuilt Data Quality Assurance Mechanism

The inbuilt data quality assurance mechanism in place includes following:

a. Compare Option (available in data entry screen)
b. Inter-Data Validation Checks (available in data entry screen)

a. Compare Option: HMIS has inbuilt features under which during the time of data entry, data entry user can compare the entry of present month with that of previous month. That way they can observed any adverted mistake or outlier data entry in the system. Screenshot of same is given below at Fig 1.5.

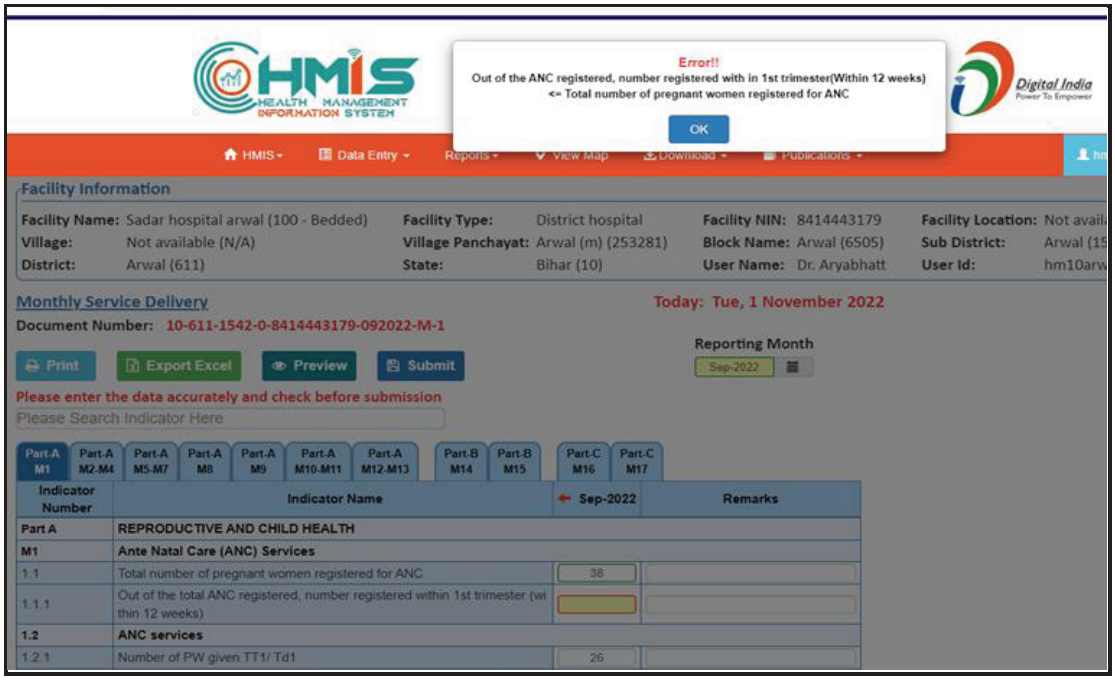
Figure 1.5: Compare option in HMIS



b. Inter-Data Validation Checks:

HMIS has inbuilt data validation rules in place in its various data entry formats which restrict users from entering any garbage value in the system – some of the rules are 'mandatory' while the others are in terms of 'warning'. Mandatory validation rules are those which are having direct parent-child relations such as no. of 1st trimester registration of pregnant women cannot be greater that No. of ANC registration. A screenshot of the same is given below in Fig 1.6. Similar to these, there are some other mandatory validation rules inbuilt in HMIS.

Figure 1.6: Inbuilt validation rules sample in place in HMIS



ii. External Data Quality Assurance Mechanism

The external data quality assurance mechanism, which includes reports such as min-max report, Real time data reporting status etc. through which completeness of reporting as well as any data quality related issues can be detected. In addition, there is an automated tool developed through which data quality can assessed by the users. The tool is called as ADVTool.

a. The ADVTool:

Ministry in collaboration with National Institute of Medical College, ICMR and Population Council developed an automated data quality tool as part of National Data Quality Forum

(NDQF) support. The data quality thus developed tested and piloted. It is also available on HMIS portal also.

The ADVTool is an automated system, is an effort in this direction to enable HMIS staff in faster review of errors and finalization of HMIS data. The system will benefit the staff working at the national and sub-national levels to undertake data quality assessment checks and provide feedback to data entry operators at facility levels.

iii. Training and Capacity Building:

HMIS has a robust regular training and capacity building annual plan. One national and three to four regional workshops are held every year as per the plan. During 2020-21 and 2021-22, due to Covid-19 pandemic, number of virtual workshops were held where States/UTs and Districts HMIS nodal were oriented on HMIS. These workshops are organized to orient about new features and data definition.

iv. Supportive Supervision:

Supportive supervision and monitoring visits are important part of data quality verification. During the field visit random checks of HMIS data in the registers at facility level is undertaken. During Common Review Mission of National Health Mission HMIS data is extensively used during field visits. Population Research Centre (PRCs) are also involved in the data verification exercise of the HMIS data.

Annexure 1.1

State/UT-wise number of Public Health Facilities by type of health facility as mapped in HMIS (As on 31st March 2022)

Sl. No.	States/UTs	Health Sub Centre	Primary Health Centre	Community Health Centre	Sub District Hospital	District Hospital	Total
All India		**162652**	**32281**	**6217**	**1407**	**1070**	**203627**
1	Andaman & Nicobar Islands	123	27	4	0	3	157
2	Andhra Pradesh	11480	1691	181	51	29	13432
3	Arunachal Pradesh	367	131	58	0	20	576
4	Assam	4701	1010	202	14	35	5962
5	Bihar	10450	1787	307	51	47	12642
6	Chandigarh	0	44	2	1	4	51
7	Chhattisgarh	5494	823	170	12	34	6533
8	Delhi	399	565	26	11	52	1053
9	Goa	219	63	6	2	3	293
10	Gujarat	9132	1807	361	54	40	11394
11	Haryana	2691	535	152	25	27	3430
12	Himachal Pradesh	2127	595	99	84	16	2921
13	Jammu And Kashmir	2500	982	82	0	27	3591
14	Jharkhand	3848	351	177	19	21	4416
15	Karnataka	9366	2532	212	151	48	12309
16	Kerala	5475	944	230	87	56	6792
17	Ladakh	289	33	7	0	2	331
18	Lakshadweep	15	4	3	2	1	25
19	Madhya Pradesh	10227	1544	324	113	51	12259
20	Maharashtra	10669	3524	448	98	83	14822
21	Manipur	415	95	17	1	9	537
22	Meghalaya	460	147	28	2	13	650
23	Mizoram	367	65	7	2	12	453
24	Nagaland	452	136	23	0	12	623
25	Odisha	6688	1391	384	33	37	8533
26	Puducherry	84	46	4	2	4	140
27	Punjab	3120	526	164	44	29	3883
28	Rajasthan	13589	2518	685	91	30	16913
29	Sikkim	153	26	2	0	4	185
30	Tamil Nadu	8715	1874	412	311	32	11344
31	Telangana	4910	834	82	44	21	5891
32	The Dadra And Nagar Haveli And Daman And Diu	97	14	4	1	3	119
33	Tripura	999	115	23	12	8	1157
34	Uttarakhand	1851	607	80	21	14	2573
35	Uttar Pradesh	20783	3515	849	0	190	25337
36	West Bengal	10397	1380	402	68	53	12300

Annexure 1.2

State/UT-wise number of Private Health Facilities by type of health facility as mapped in HMIS (As on 31st March 2022)

Sl. No.	States/UTs	Health Sub Centre	Primary Health Centre	Community Health Centre	Sub District Hospital	District Hospital	Total
All India		**12**	**1542**	**10825**	**1466**	**183**	**14028**
1	Andaman & Nicobar Islands	0	11	1	0	0	12
2	Andhra Pradesh	0	0	2904	669	0	3573
3	Arunachal Pradesh	0	0	0	0	4	4
4	Assam	4	401	150	5	1	561
5	Bihar	1	468	0	0	1	470
6	Chandigarh	0	0	0	0	0	0
7	Chhattisgarh	0	1	48	112	0	161
8	Delhi	0	10	512	77	40	639
9	Goa	0	0	0	0	0	0
10	Gujarat	0	51	2222	6	10	2289
11	Haryana	2	220	175	62	27	486
12	Himachal Pradesh	0	0	0	88	0	88
13	Jammu And Kashmir	0	2	52	0	0	54
14	Jharkhand	0	38	69	0	0	107
15	Karnataka	0	0	0	12	17	29
16	Kerala	0	0	0	155	0	155
17	Ladakh	0	0	0	0	0	0
18	Lakshadweep	0	0	0	0	0	0
19	Madhya Pradesh	0	0	34	5	0	39
20	Maharashtra	0	0	1	0	1	2
21	Manipur	1	1	22	0	0	24
22	Meghalaya	2	0	2	0	10	14
23	Mizoram	0	0	0	14	0	14
24	Nagaland	2	6	8	0	4	20
25	Odisha	0	0	411	9	16	436
26	Puducherry	0	0	0	0	0	0
27	Punjab	0	0	156	0	0	156
28	Rajasthan	0	0	0	16	0	16
29	Sikkim	0	0	0	0	1	1
30	Tamil Nadu	0	0	0	0	0	0
31	Telangana	0	0	0	0	0	0
32	The Dadra And Nagar Haveli And Daman And Diu	0	16	0	0	0	16
33	Tripura	0	8	0	0	2	10
34	Uttarakhand	0	0	0	2	0	2
35	Uttar Pradesh	0	0	3332	0	0	3332
36	West Bengal	0	309	726	234	49	318

CHAPTER 2

REPORODUCTIVE, MATERNAL, NEWBORN, CHILD AND ADOLESCENT HEALTH (RMNCH+A)

Introduction

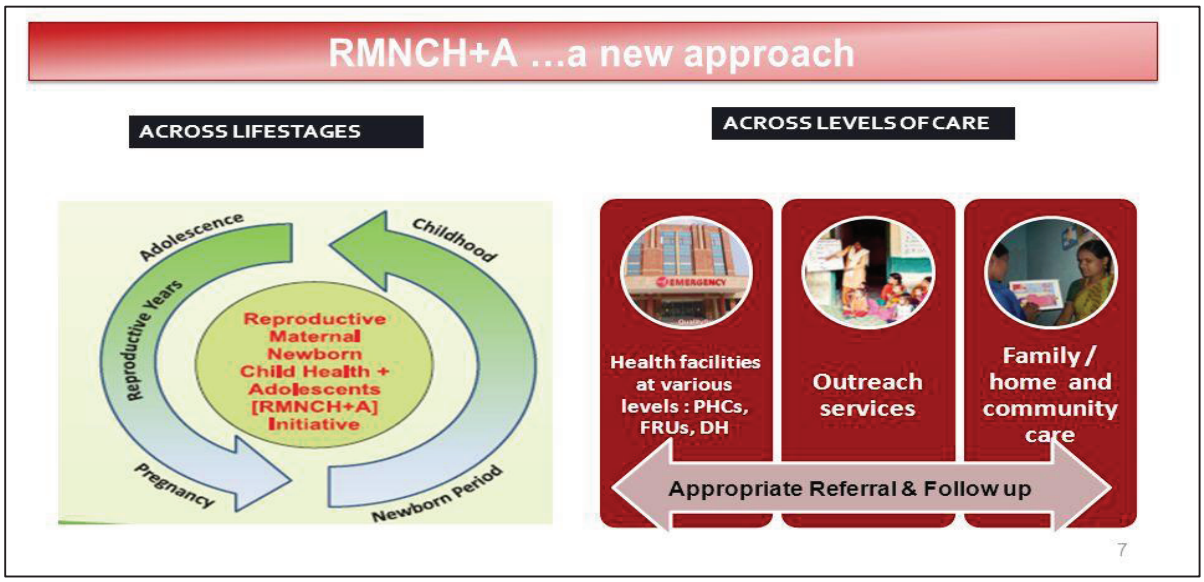
The Reproductive and Child Health (RCH) Programme was launched throughout the country on 15th October, 1997.

This programme aimed at achieving a status in which women will be able to regulate their fertility, women will be able to go through their pregnancy and child birth safely, the outcome of pregnancies will be successful and will lead to survival and well-being of the mother and the child. The couples will also be able to have their sexual relation free from fear of pregnancy and of contracting sexually transmitted diseases.

The second phase of RCH program i.e., RCH – II was launched on 1st April, 2005. The main objective of the program was to bring about a change in mainly three critical health indicators i.e., reducing total fertility rate, infant mortality rate and maternal mortality rate with a view to realizing the outcomes envisioned in the Millennium Development Goals.

RMNCH+A approach has been launches in 2013 and it essentially looks to address the major causes of mortality among women and children as well as the delays in accessing and utilizing health care and services.

Figure 2.1: The RMNCH+A strategic approach

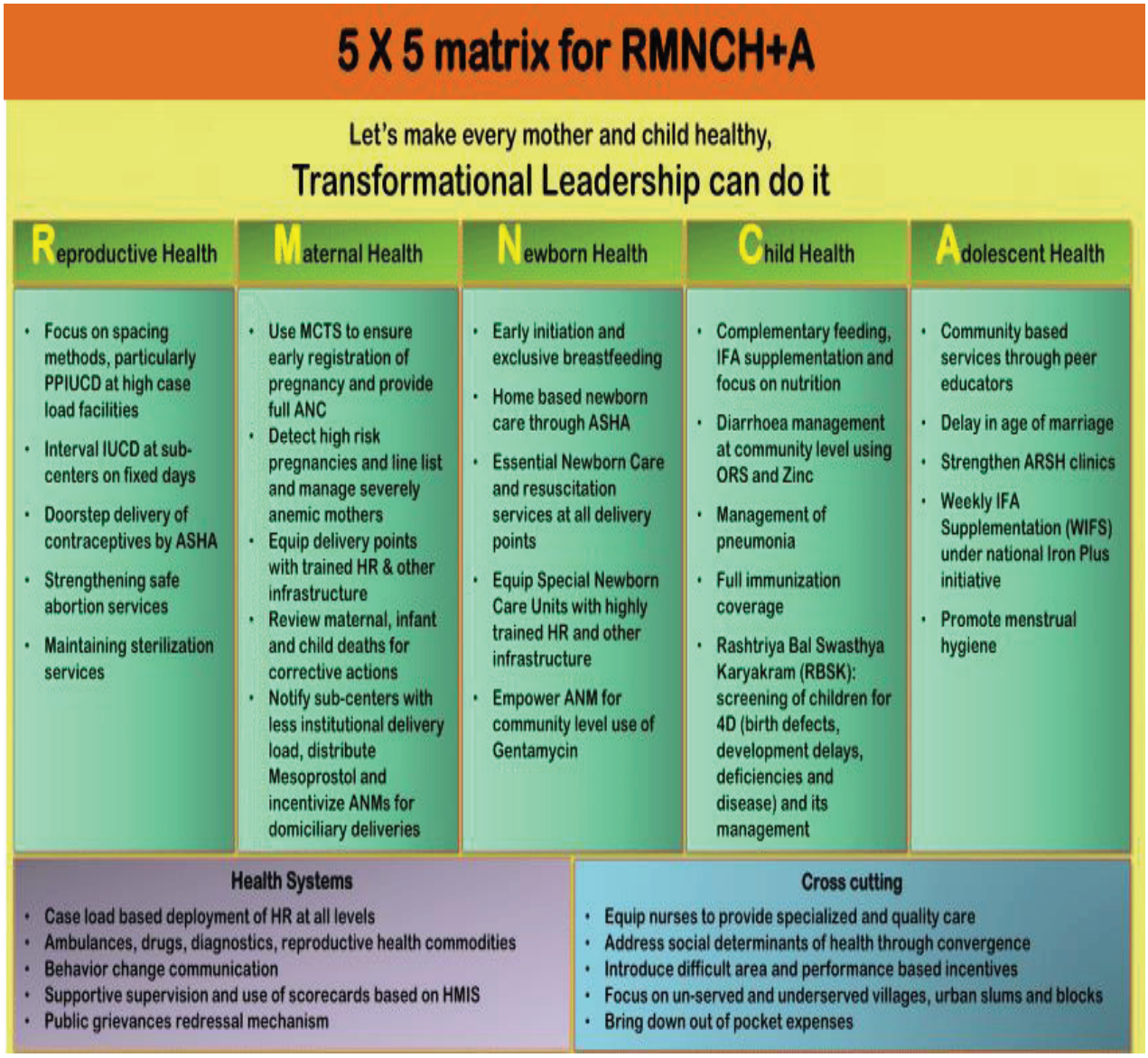


The RMNCH+A strategic approach has been developed to provide an understanding of **'continuum of care'** to ensure equal focus on various life stages. Priority interventions for each thematic area have been included in this to ensure that the linkages between them are contextualized to the same and consecutive life stage. It also introduces new initiatives like the use of Score Card to track the performance, National Iron + Initiative to address the issue of anaemia across all age groups and

the Comprehensive Screening and Early interventions for defects at birth, diseases and deficiencies among children and adolescents.

The RMNCH+A appropriately directs the States to focus their efforts on the most vulnerable population and disadvantaged groups in the country. It also emphasizes on the need to reinforce efforts in those poor performing districts that have already been identified as the high focus districts.

Figure 2.2: 5X5 Matrix for RMNCH+ A



Source: The Reproductive, Maternal, Newborn, child & Adolescent Health (RMNCH+A) 5*5 Matrix. National Health Mission.

Table 2.1: Status of key RMNCH+A/RCH Indicators

Indicator	Current status	National Health Policy Target	SDG 2030 Target
Maternal Mortality Ratio (SRS, 2018-20)	97	100 by 2020	<70
Neonatal Mortality rate*	20	16 by 2025	<12
Infant Mortality Rate*	28	28 by 2019	-
Under 5 Mortality Rate*	32	23 by 2025	≤25
Total Fertility Rate**	2	Replacement level fertility	-

Source- *SAMPLE REGISTRATION SYSTEM STATISTICAL REPORT 2020.
** National Family Health Survey (NFHS)-5

Maternal Health

Maternal health refers to a woman's health and well-being before, during, and after pregnancy and encompasses aspects of physical, mental, emotional, and social health. The World Health Organization defines maternal health as: "The health of women during Pregnancy, Childbirth, and the postnatal Period."

Maternal health also includes the absence of maternal morbidity, severe maternal morbidity, and maternal mortality.

Maternal Morbidity refers to health conditions that complicate pregnancy and childbirth or that have a negative impact on a woman's health and well-being.

Severe maternal morbidity (also called acute maternal morbidity) refers to outcomes of labor and birth that result in significant negative short- or long-term consequences to a woman's health.

Maternal Mortality Death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes.

Maternal health is an important aspect for the development of any country in terms of increasing equity and reducing poverty. The survival and wellbeing of mothers is not only important in their own right but are also central to solving large broader, economic, social and developmental challenges. Massive and strategic investments have been made under the National Health Mission for improvement of maternal health.

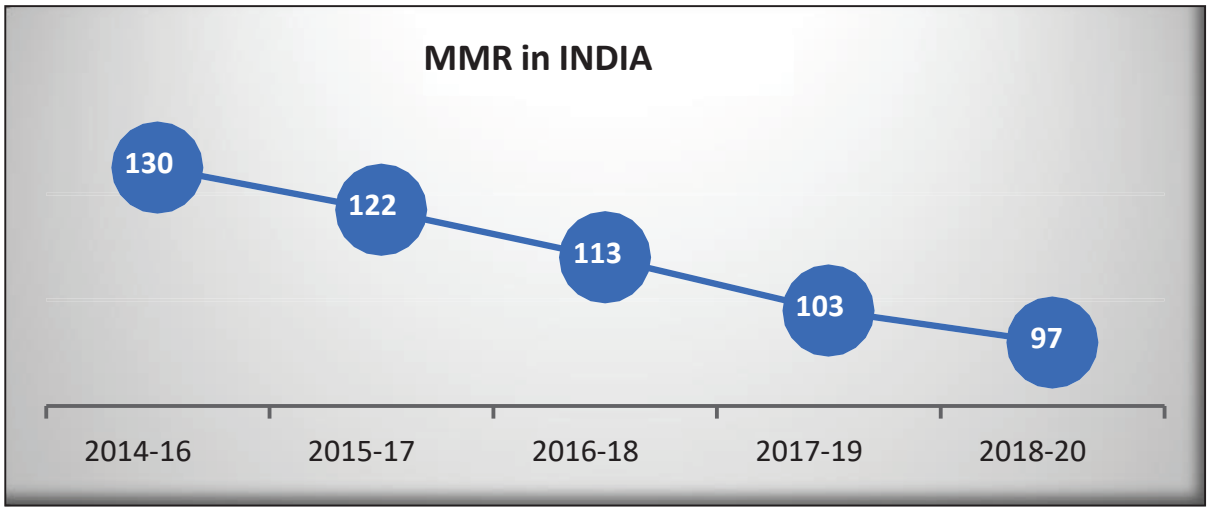
STATISTICAL MEASURES OF MATERNAL MORTALITY
Maternal mortality ratio (MMR): Number of maternal deaths during a given time period per 100000 live births during the same time period.
Maternal mortality rate (MMRate): Number of maternal deaths during a given time period divided by person-years lived by women of reproductive age (age 15–49 years) in a population during the same time period.
Adult lifetime risk of maternal death: The probability that a 15-year-old girl will eventually die from a maternal cause (4). The proportion of deaths among women of reproductive age that are due to maternal causes (proportion maternal; PM): The number of maternal deaths divided by the total deaths among women aged 15–49 years.

The women who die are in the prime of life responsible for the health and wellbeing of their families. Their death represents a drain on all development efforts. Above and beyond the social and economic rationale for preventing this burden of mortality and morbidity is moral imperative. Therefore, reducing the high maternal mortality in the developing world should be considered a key policy issue for health, social and economic development.

One of the key indicators of maternal mortality is the **Maternal Mortality Ratio (MMR)** which is defined as the number of maternal deaths during a given time period per 100,000 live births during the same time period. The target 3.1 of Sustainable Development Goals (SDG) set by United Nations aims at reducing the global maternal mortality ratio to less than 70 per 100,000 live births.

It is heartening that the Maternal Mortality Ratio of India has declined over the years from 130 in 2014-16 to 97 in 2018-20, as indicated in the graph below.

Figure 2.3: Showing Decline in Maternal Mortality in India.



Source- SRS

The Sustainable Development Goals and Maternal Mortality

The Sustainable Development Goals (SDGs) were launched on 25 September 2015 and came into force on 1 January 2016 for the 15-year period until 31 December 2030. Among the 17 SDGs, the direct health-related targets come under SDG 3: Ensure healthy lives and promote well-being for all at all ages.

With the adoption of the SDGs, the United Nations Member States extended the global commitments they had made in 2000 to the Millennium Development Goals (MDGs), which covered the period until 2015.

In the context of the Sustainable Development Goals (SDG), countries have united behind a new target to accelerate the decline of maternal mortality by 2030. SDG 3 includes an ambitious target: "reducing the global MMR to less than 70 per 100 000 births, with no country having a maternal mortality rate of more than twice the global average".

As per SRS (SPECIAL BULLETIN ON MATERNAL MORTALITY IN INDIA 2018-20, released on November 22), Seven states have already achieved the sustainable development goal target — Kerala (19), Maharashtra (33), Telangana (43), Andhra Pradesh (45), Tamil Nadu (54), Jharkhand (56), and Gujarat (57), according to the data. (Annexure-2.1)

Four key actions responsible for India's remarkable achievement are:

First, *India has made a concerted push to increase access to quality maternal health services*. Since 2005, coverage of essential maternal health services has doubled,

while the proportion of institutional deliveries in public facilities have tripled, from 70.6% in 2008-09 to 95.5% in 2021-22 as per the HMIS Key Indicator report for 2008-09 and 2019-20) (including private facilities, institutional deliveries).

Second, *state-subsidized demand-side financing like the Janani Shishu Suraksha Karyakram* – Pregnant women delivering in public health institutions under the Janani Shishu Suraksha Karyakaram (JSSK) are entitled to absolutely free/no expense delivery, including caesarean sections. The initiative stipulates free diet drugs, diagnostics and blood, besides free transport from home to institution, or between facilities in case of a referral and drop back home. Similar entitlements have been put in place for ante-natal and post–natal complications during pregnancy and all sick infants accessing public health institutions for treatment. (Annexure-2.2 & 2.3)

The Janani Suraksha Yojana is a safe motherhood programme that provides cash assistance for delivery and post-delivery care under the National Health Mission that aims to reduce maternal and neo-natal mortality by promoting institutional delivery among the poor pregnant women.

Figure 2.4: Percentage of JSSK beneficiaries to Total number of pregnant women registered for ANC in 2020-2021 & 2021-2022.

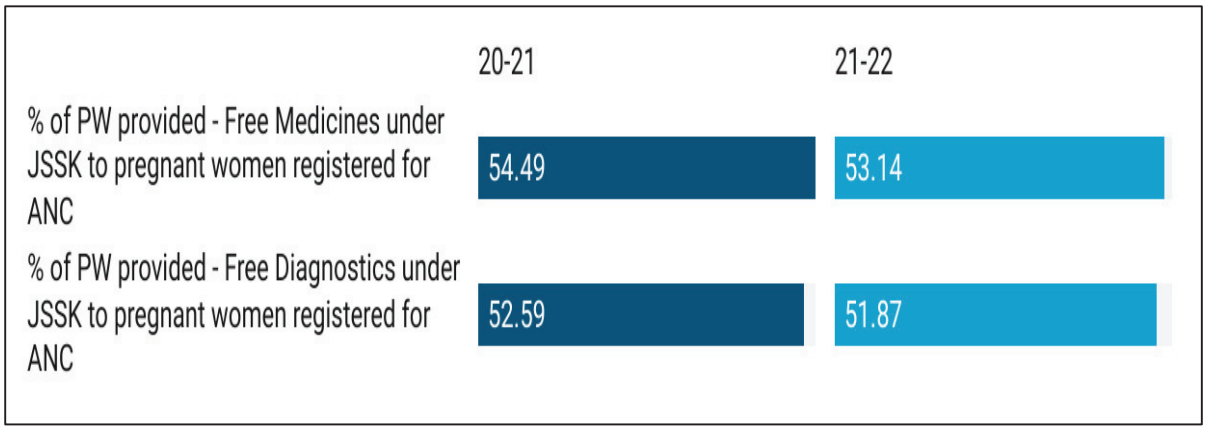
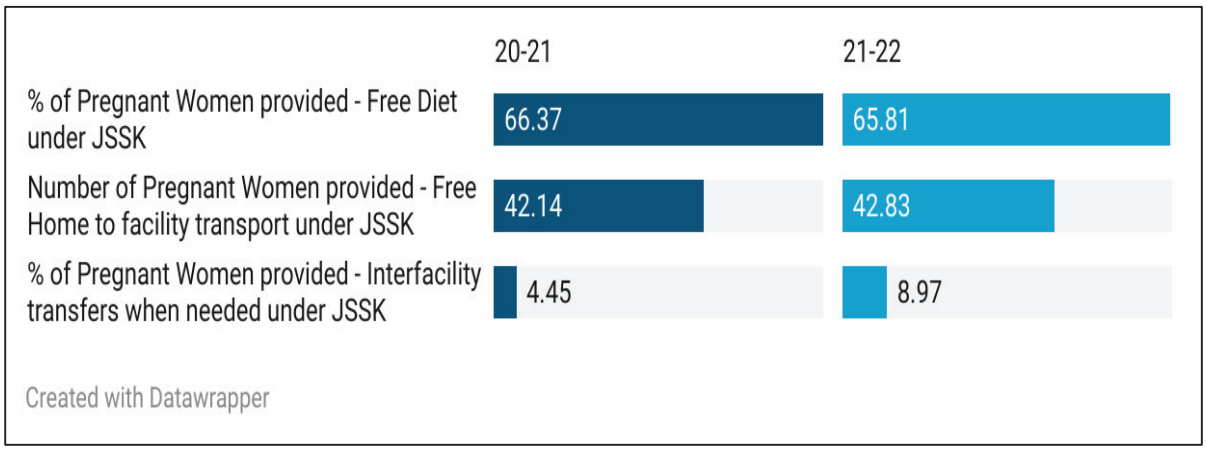


Figure 2.5: Percentage of JSSK beneficiaries to Total Number of public Institutional Deliveries conducted (Including C-Sections) 2020-2021 & 2021-2022.



Third, India has put significant emphasis on mitigating the social determinants of maternal health. Women in India are more literate than ever, with 71.5% (Source: NFHS-5) now able to read and write. There is a drop in the overall rate of child

marriages, from 26.8 per cent in the earlier National Family Health Survey (NFHS-4) to 23.3 per cent in NFHS 5. These factors alone have enabled Indian women to better control their reproductive lives and make decisions that reflect their own interests and wants.

Finally, the government has put in substantive efforts to facilitate positive engagement between public and private health care providers. Campaigns such as the Pradhan Mantri Surakshit Matritva Abhiyan have been introduced with great impact, allowing women's easy access to antenatal check-ups, obstetric gynecologists and to track high-risk pregnancies – exactly what is needed to make further gains and achieve the SDG targets.

Antenatal care (ANC):

Human rights law includes fundamental commitments of states to enable women and adolescent girls to survive pregnancy and childbirth as part of their enjoyment of sexual and reproductive health and rights and living a life of dignity. The World Health Organization (WHO) envisions a world where "every pregnant woman and newborn receives quality care throughout the pregnancy, childbirth and the postnatal period"

There is evidence that effective interventions exist at reasonable cost for the prevention or treatment of virtually all life-threatening maternal complications , and almost two thirds of the global maternal and neonatal disease burden could be alleviated through optimal adaptation and uptake of existing research findings . But a human rights-based approach is not just about avoiding death and morbidity – it is about enabling health and well-being while respecting dignity and rights.

Definition- Antenatal care (ANC) can be defined as the care provided by skilled health-care professionals to pregnant women and adolescent girls in order to ensure the best health conditions for both mother and baby during pregnancy.

The components of ANC include:

- Risk identification;
- Prevention and management of pregnancy-related or concurrent diseases; and
- health education and health promotion.

A proper antenatal check-up provides necessary care to the mother and helps identify any complications of pregnancy such as anaemia, pre-eclampsia and hypertension etc. in the mother and slow/inadequate growth of the foetus. Antenatal care allows for the timely management of complications through referral to an appropriate facility for further treatment. It also provides opportunity to prepare a birth plan and identify the facility for delivery and referral in case of complication.

Components of ANC:

Quality ANC has several components, which are described below:

Section A: Primary Steps:

- Early registration and first check-up is conducted within 12weeks (first three months of pregnancy).

- Track every pregnancy for conducting at least four antenatal check-ups (including the first visit for registration), keeping in mind all the essential components listed under.

Section B:

- Administer two doses of Td injection.
- Provide 180 tablets of IFA.

Section C: Essential components of every antenatal check-up:

- Patient's history taking.
- Physical examination–measure the weight, blood pressure and respiratoryrate and check for pallor and oedema.
- Abdominal palpation for foetal growth, foetal lie and auscultation of Foetal Heart Sound (FHS) according to the stage of pregnancy.
- laboratory investigations, such as haemoglobin estimation and urine tests (forsugar and proteins).

Section D: Desirable components

- Blood group, including the Rh factor.
- The Venereal Disease Research Laboratory (VDRL)/Rapid Plasma Reagin (RPR) test to rule out syphilis.
- Test the woman for Human Immuno defi ciency Virus (HIV*).
- Blood sugar.
- Hepatitis B Surface Antigen (HBsAg) test.

Section E: Counselling

- Help the woman to plan and prepare for birth (birth preparedness/micro birth plan).This should include deciding on the place of delivery and the presence of an attendant at the time of the delivery.
- Advantages of institutional deliveries and risks involved in home deliveries.
- Advise the woman on where to go if an emergency arises, and how to arrange for transportation, money and blood donors in case of an emergency.
- Educate the woman and her family members on signs of labour and danger signs of obstetric complications.
- Emphasise the importance of seeking ANC and PNC.
- Advise on diet (nutrition) and rest.
- Inform the woman about breastfeeding, including exclusive breastfeeding.
- Provide information on sex during pregnancy.
- Warn against domestic violence (explain the consequences of violence on a pregnant woman and her foetus).
- Promote family planning.
- Inform the woman about the Janani Suraksha Yojana (JSY)/any other incentives offered by the state.

ANC registration

ANC registration means registering an antenatal or pregnant woman in a hospital. This ensures that you are having regular check-up during your pregnancy.

Registration of a pregnant woman for ANC should take place as soon as the pregnancy is suspected. Every woman in the reproductive age group should be registered when pregnancy detect. Ideally, the first visit should take place within 12 weeks. However, even if a woman comes for registration later in her pregnancy, she should be registered and care should be provided to her according to the gestational age.

HMIS is capturing a series of data elements related to these aspects of Ante Natal care.To assess the extent of provision of services in any area, one of the benchmarks is to asses it against the Estimated/Expected beneficiaries. At National level, the total expected pregnant women for the year 2021-22 was 92.06%. (Annexure:2.4)

Figure 2.6: Coverage ANC Registration in India.

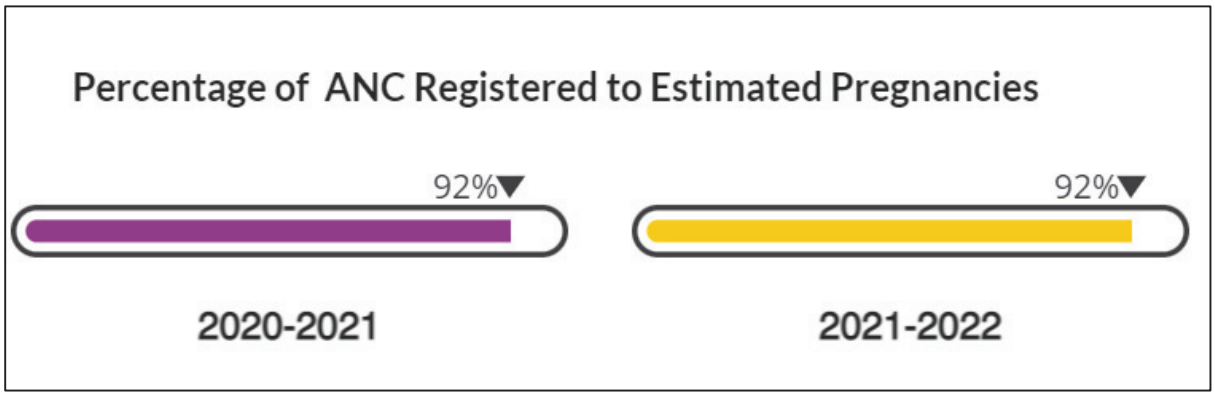
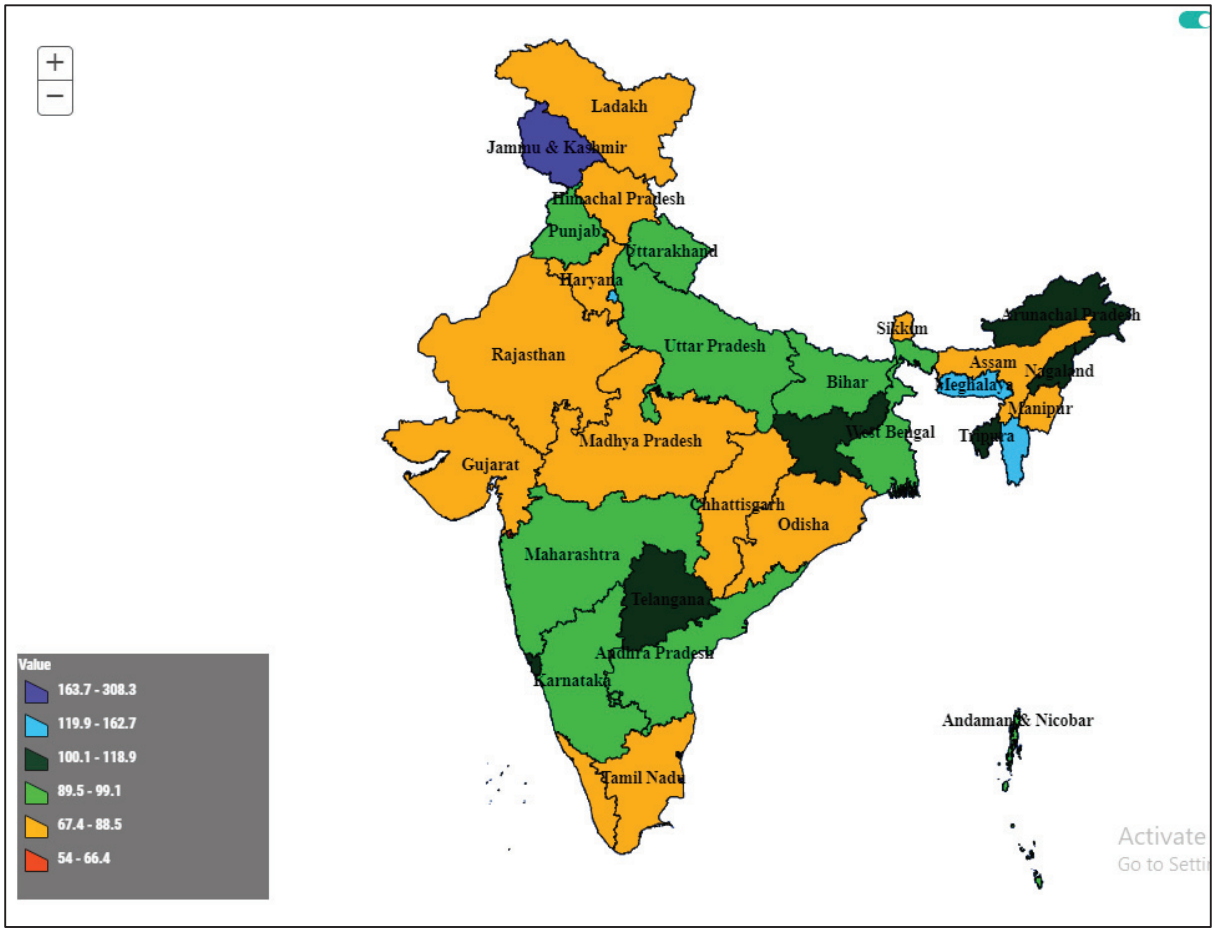


Figure 2.7: Percentage of ANC Registered against Estimated Pregnancies: 2020-2021



Source: HMIS Report 2020-2021

19 States have performed above the National Average of 92% for ANC Registration with Puducherry reporting the highest ANC registration over estimated pregnancies. Whereas 18 States have reported values less than the National Average of 92%.

Number and timing of visits: Ensure that every pregnant woman makes at least four visits for ANC, including the first visit/registration. It should be emphasised that this is only a minimum requirement and that more visits may be necessary, depending on the woman's condition and needs.

Suggested schedule for antenatal visits:

- Within 12 weeks—preferably as soon as pregnancy is suspected—for registration of pregnancy and first antenatal check-up
- 2nd visit: Between 14 and 26 weeks
- 3rd visit: Between 28 and 34 weeks
- 4th visit: Between 36 weeks and term

Early initiation of Antenatal care (ANC)

The first visit or registration of a pregnant woman for ANC should take place as soon as the pregnancy is suspected. Ideally, the first visit should take place in the first trimester, before or at the 12th week of pregnancy

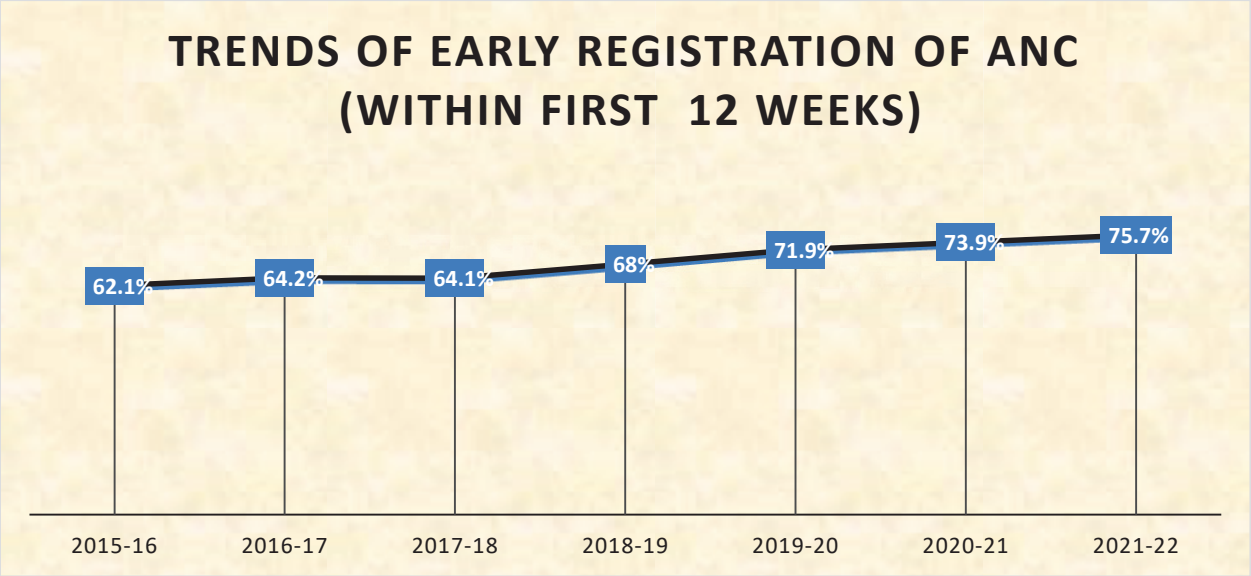
- Early registration of ANC within first 12 weeks of pregnancy aids early documentation of the woman's baseline physiological and laboratory parameters for subsequent comparison, early detection of anomalies with the progress of pregnancy, avoiding teratogens, provides opportunities for preventive health care's services such as immunization against neonatal tetanus, prophylaxis and treatment of diseases, diagnosis and treatment of medical disorders. This also helps in providing the woman the option of an early abortion. It is important to find out as early as possible whether the woman wants to go in for an abortion so that the procedure can be done safely as per the legal provisions laid down under the Medical Termination of Pregnancy (MTP) Act, 1972.

Early detection of pregnancy is important for the following reasons:

- It facilitates proper planning and allows for adequate care to be provided during pregnancy for both the mother and the foetus.
- Record the date of the Last Menstrual Period (LMP), and calculate the Expected Date of Delivery (EDD).
- The health status of the mother can be assessed and any medical illness that she might be suffering from can be detected and also to obtain/record baseline information (on blood pressure, weight, haemoglobin, etc.) Helps in timely

detection of complications at an early stage and manages them appropriately by referral as and where required.

Figure 2.8: Percentage of Early registration (within 12 weeks) of pregnancy to total Registration of ANC:



Source: HMIS Report

Increasing trend of early registration is observed as per the HMIS report. It is observed that in 2020-21 early registration percentage is only 73.9 whereas 75.7percentage in 21-22. This tells the success of the program at the ground level.

Figure 2.9: Showing Comparison of Pregnant Women who had Antenatal Checkup in first trimester.

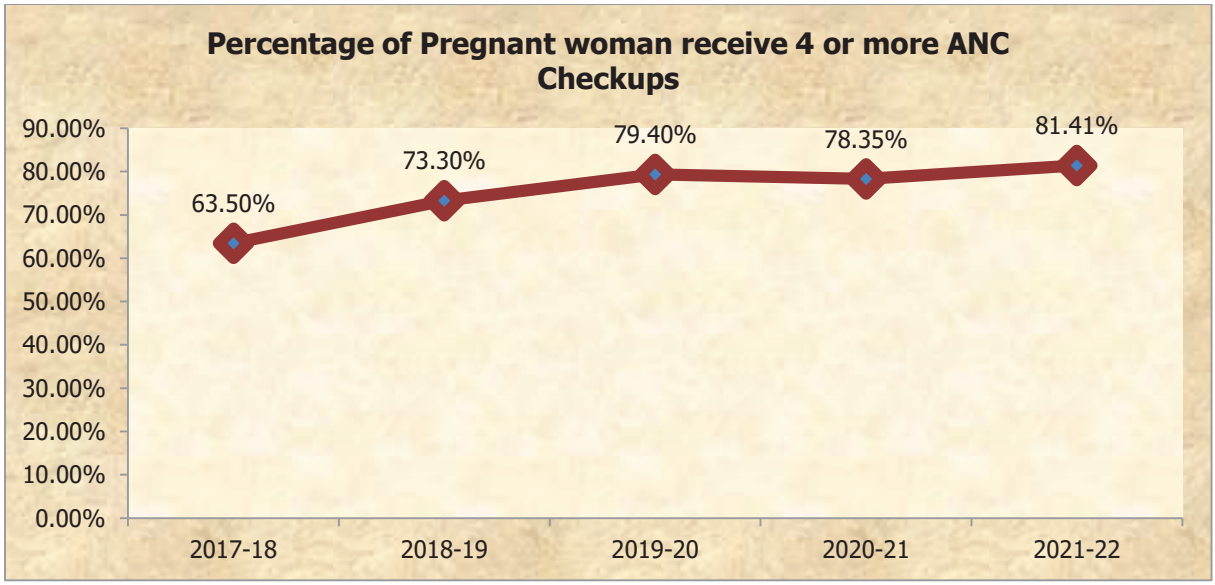
PW received 4 or more ANC check-ups:

The proportion of pregnant women receiving 4 or more antenatal care visits (ANC 4+) is used prominently as a global benchmark indicator to track maternal health program performance.

Conventional ANC comprised about 12 visits (one visit each month during the first 6 months of pregnancy, once every 2–3 weeks for the next 2 months, and ANC 4+ has been the most frequently used summary measure of maternal health program performance.

Receiving antenatal care at least four times increases the likelihood of receiving effective maternal health interventions during the antenatal period. This is one of the indicators in the Global Strategy for Women's, Children's and Adolescents' Health (2016-2030) Monitoring Framework, and one of the tracer indicators of health services for the universal health coverage (SDG indicator 3.8.1). HMIS is capturing ANC 4 + data since 2017-18.

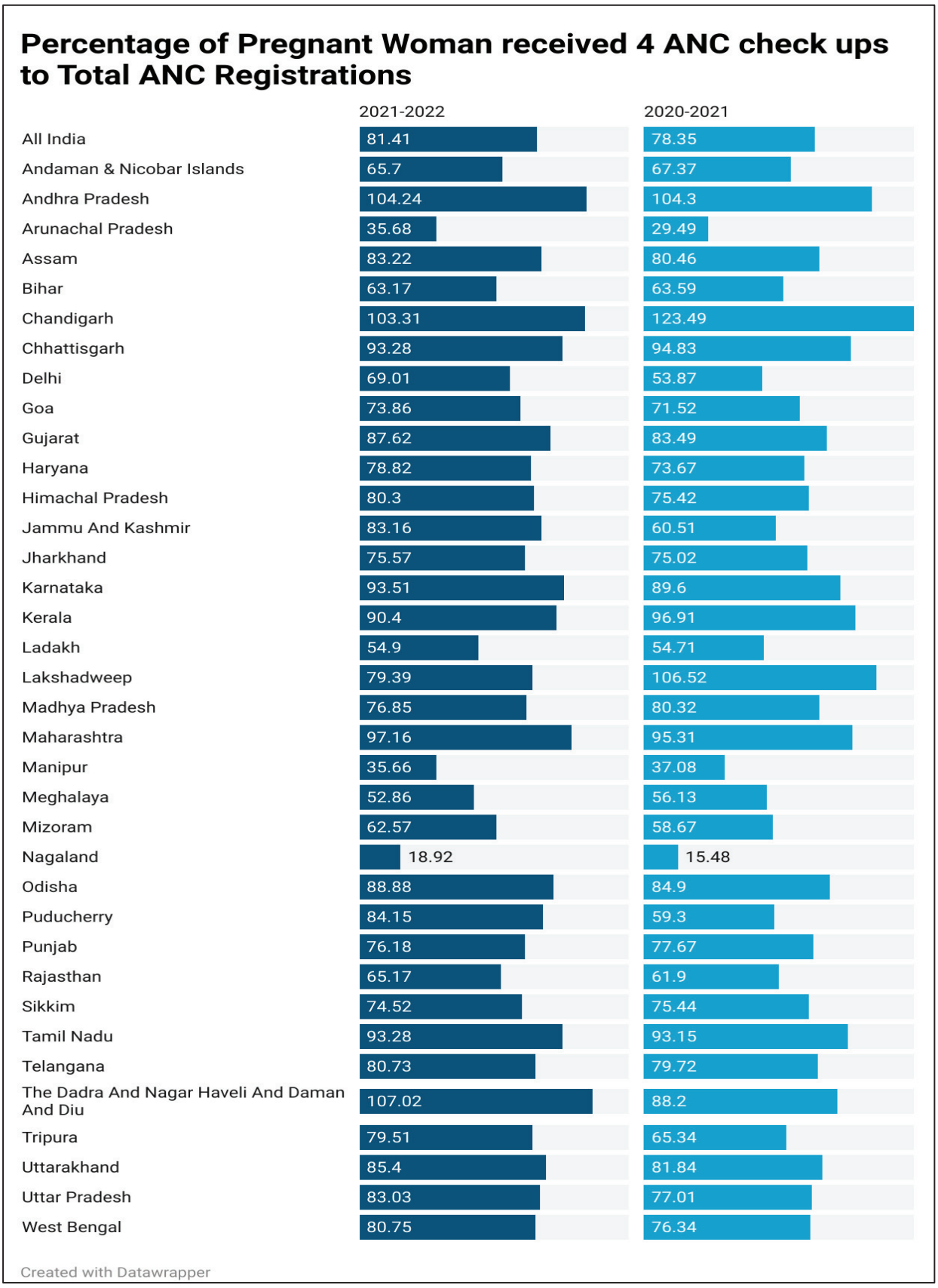
Figure 2.10: Showing Accending Trends of ANC Checkups 4 or more times during the Pregnancy.



As per HMIS approximately 63.5% of women receive four or more ANC in 2017-18 , in 2018-19 it is increased upto 73.3%, showing annual growth of 15 % and 9.3% of annual growth in 2019-20 however the HMIS data showing annual decrees (6.3%) of 4 or more ANC in 2020-21.

The percentage of states of Nagaland, Arunachal Pradesh, and Manipur with four or more antenatal check-ups is less than 50% in 2020-2021 and 2021-2022. The performance of twenty-one states are worse than the national average. (Annexure:2.5)

Figure 2.11: State wise trend of 4 ANC or more in India



Quality of antenatal care

HMIS also captures the quality indicators of the antenatal care. Good quality of ANC helps in reducing the risk of stillbirths and pregnancy complications and give women a positive pregnancy experience. These quality indicators ensure not only a healthy pregnancy for the woman and the baby, but also an effective transition to positive childbirth and ultimately to a positive experience of motherhood.

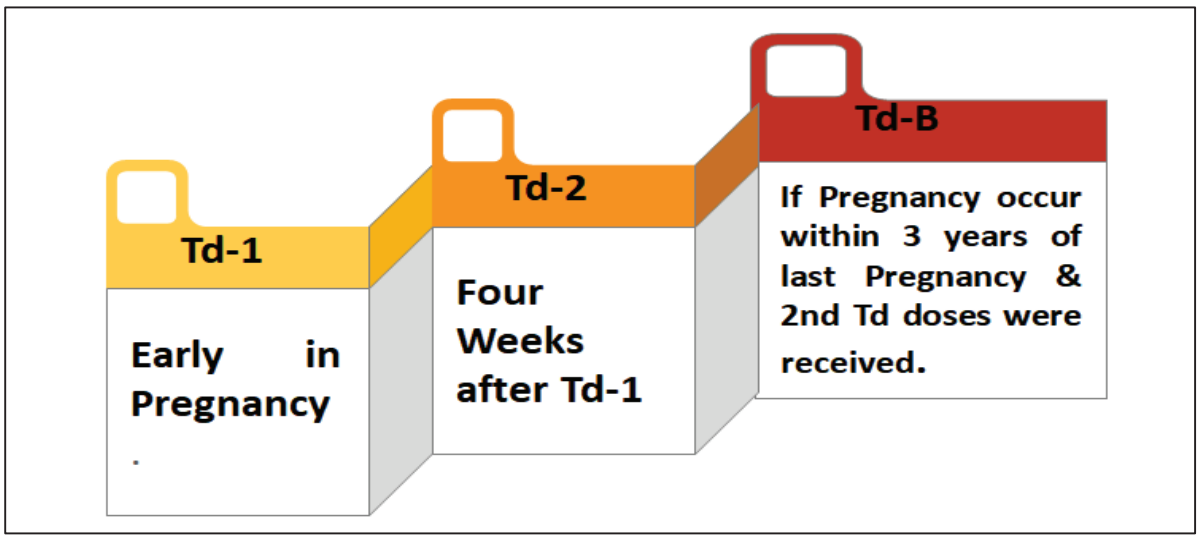
Tetanus toxoid vaccination:

Tetanus is a disease that can be prevented by vaccines containing tetanus-toxoids. Antibodies produced by maternal immunization that pass to the fetus via the placenta protect the baby in terms of tetanus during the neonatal period. Elimination of maternal New-born Tetanus (MNT) has been defined as less than 1 NT case per 1000 live births in a specific region by the World Health Organization (WHO). MNT elimination strategies include vaccination, hygienic practices at delivery, and surveillance. India was declared free of maternal and neonatal tetanus on 15th May, 2015. Unlike polio or small pox, tetanus can't be fully eradicated as the tenacious spores of bacteria causing tetanus, clostridium tetani, are widespread in the environment. The journey towards its elimination from India has not been easy, and sustained efforts will be required to maintain this status.

HIMS captures the three indicators related to prevention of tetanus through tetanus vaccine coverage viz,:

1. Number of PW given TT1/Td1
2. Number of PW given TT2/ Td2
3. Number of PW given TT booster./TT booster.

Figure 2.12 UIP schedule of Td vaccine during Pregnancy

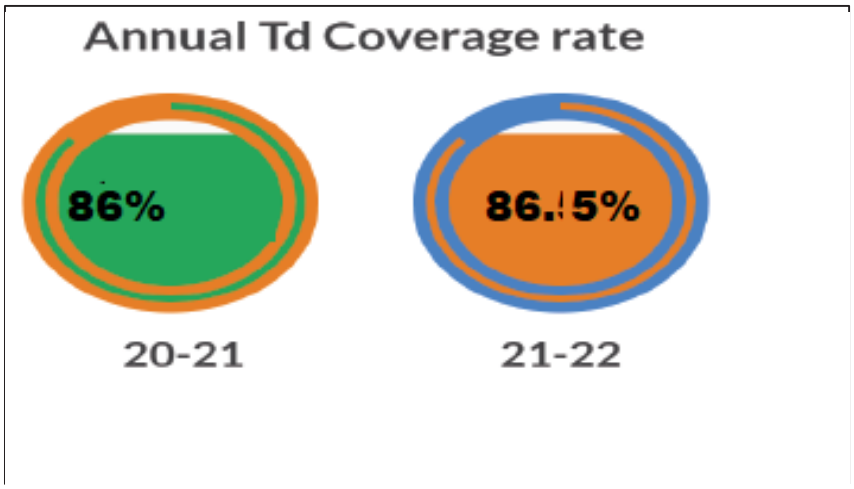


Source: Tetanus and adult diphtheria (Td) Operational Guidelines, MOHFW

The annual TT coverage rate in Pregnant women as per HMIS at all India level is only 86.5% out of which 76 % coverage is from Urban and 89% from rural sector.

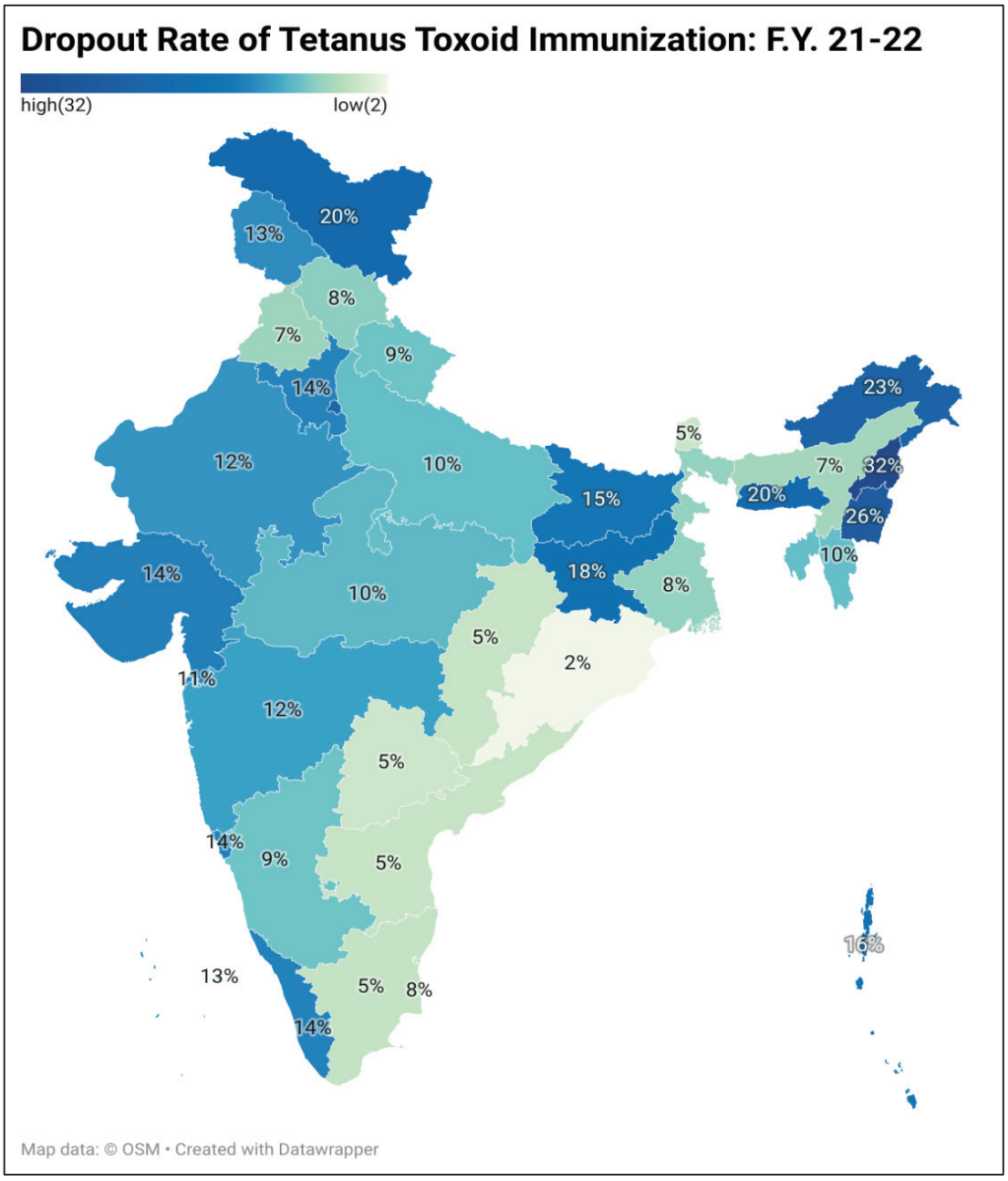
The lowest TT coverage rate in pregnant women is found in Puducherry 25.9%, Nagaland 44.4% and Goa 46.19%. (Annexure-2.6 & 2.7)in2021-2022.

Figure 2.13: Showing TT coverage in India



The dropout rate of TT1 from TT 2 in pregnant women at national level is 11.9% in FY 2021-2022 out of which 16% are from urban and 9 % from rural. Highest dropouts from TT1 to TT2 coverage is found in Nagaland (32%), followed by Manipur (26%), Delhi (22%).

Figure:2.14 Showing Dropouts of TT/Td vaccination during Pregnancy.



It is also observed that the coverage of TT in pregnant women of India is better in the rural India as compared to the urban India.

Maternal Anemia-

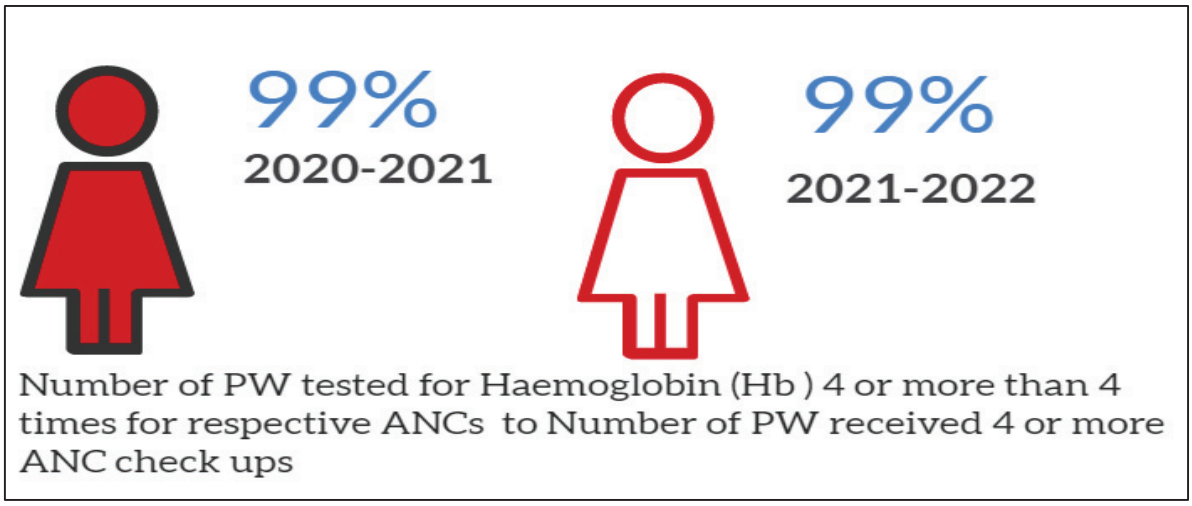
Anemia has been recognized as the most common form of nutritional deficiency worldwide. The overall iron requirement during pregnancy is significantly greater than in the non-pregnant. Though anaemia is easily treatable and preventable disease, it continues to be significantly associated with pregnancy. The physiological iron demand in pregnant women corresponds roughly to 1000–1200 mg for an average weight of 55 kg.
Hemoglobin value <11 g/dL is defined as anemia in pregnancy by WHO.
Anemia in pregnancy can be further divided as:

- Mild anemia : hemoglobin level 10.0–10.9 g/dL
- Moderate anemia 7–9.9 g/dL
- severe anemia <7 g/dL.

Who guideline for Hb estimation during pregnancy.

- Compulsory Hb estimation: by Cyanmeth-haemoglobin method by using Semi-autoanalyser or photo calorimeter.
- At 14-16 weeks, 20-24 weeks, 26-30 weeks and 30-34 weeks of pregnancy in all pregnant women.
- Minimum of 4 Hb estimation; minimum 4 weeks apart.

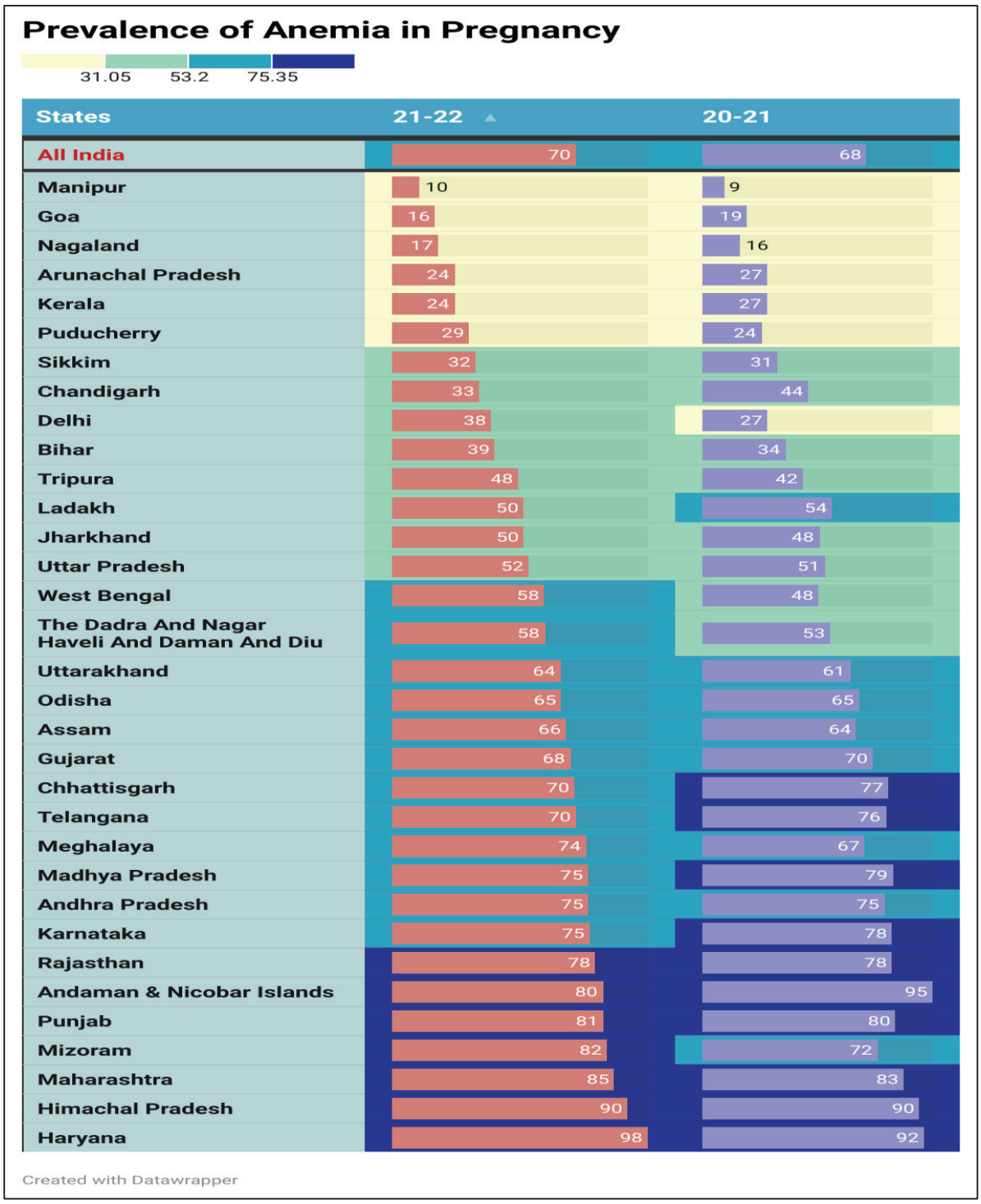
Figure 2.15: Percentage of Pregnant Woman tested for Hb 4 or more times for respective ANC.



Prevalence of Anaemia in Pregnancy:

At the national Level the prevalence of anaemia in F.Y.20-21 is 67.9% & 70% in 2021-22. In 2021-2022, highest prevalence of anemia found in State of Haryana (97.5%), Himachal Pradesh(90%),Maharashtra (85%), Mizoram(82%), Punjab & (81%). Though Kerala, Puducherry and some north-eastern states have recorded a low prevalence across categories, these states have also witnessed an increase in prevalence since F.Y. 19-20.

Figure 2.16: Prevalence of Anaemia in Pregnancy.

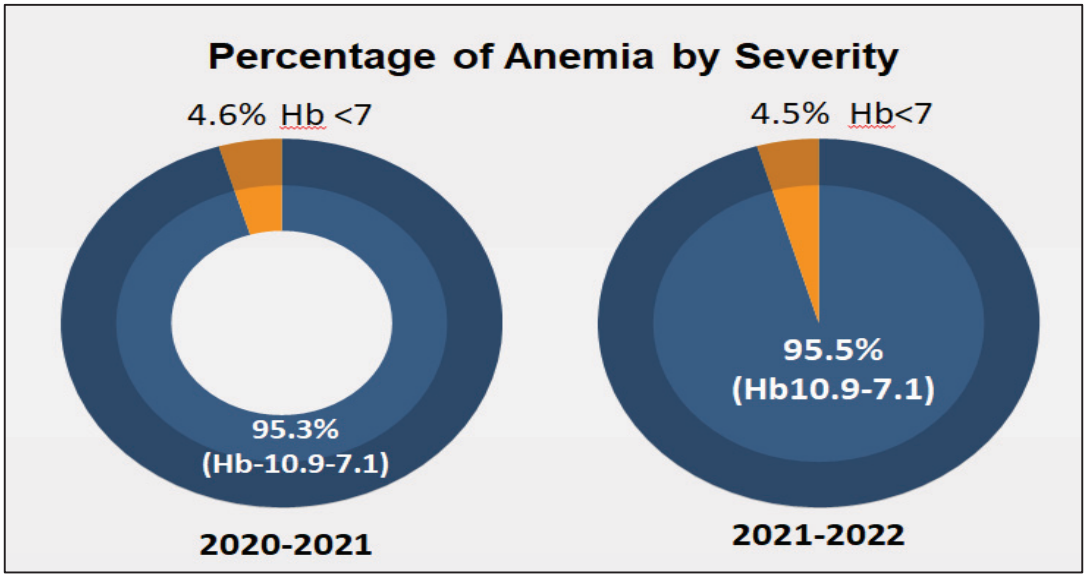


HMIS captures the two data elements describing the severity of anaemia:

1. Number of PW having Hb level<11 (out of total tested cases)(7.1 to 10.9)
2. Number of PW having Hb level<7 (out of total tested cases)

At national level in 2021-22, the Pregnant women falls in the category of mild anemia (10.9 to 7.1 gm% of Hb) are 95.5% and only 4.5% of the pregnant women have Hb less than 7 gm%.

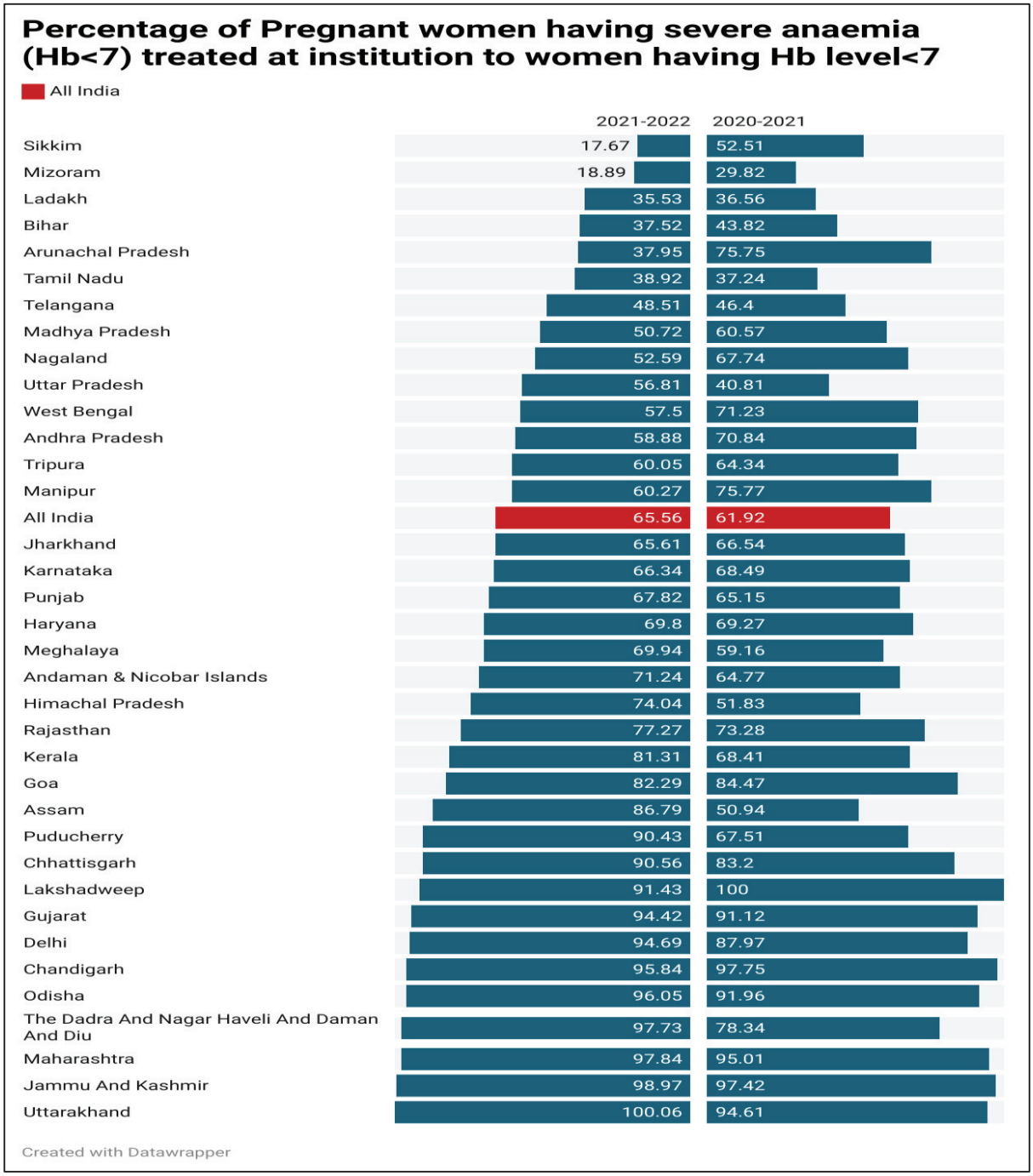
Figure 2.17 Anemia prevalence by severity.



Management of Anaemia at Institution:

It is observed that at all India level only 65.56% of Pregnant women having severe anaemia (Hb<7) treated at institution to women having Hb level<7 in 2021-2022 and 62% in 2020-2021.The lowest anemia (Hb level<7) treatment rate found in Sikkim (17.6%), Mizoram (18.8%), Ladakh(35.5%) and Highest coverage of treatment found in Uttarakhand(100%), Jammu and Kashmir(98.9%), Maharashtra(97.8%).

Figure 2.18: Showing State wise coverage of treatment of Pregnant woman having anemia (Hb<7).



Anemia Mukt Bharat

To achieve the targets of World Health Assembly of 50% reduction of anemia in women of reproductive age by 2025 and POSHAN Abhiyan (2018-2022) to reduce the prevalence amongst young children (6-59 months), adolescents and women of reproductive age groups (15-49 years) by three percent per year, Anemia Mukt Bharat has been designed. The operational guidelines were launched by Honorable Prime Minister Shri. Narendra Modi on 14th April, 2018 in Bijepur, Chhatisgarh. The beneficiaries are children 6-59 months, children 5-9 years, adolescent boys 10-19 years, adolescent girls 10-19 years, women of reproductive age (20-49 years), pregnant women and lactating women (0-6 months).

Key interventions for Pregnant women in Anemia Mukat Bharat are:

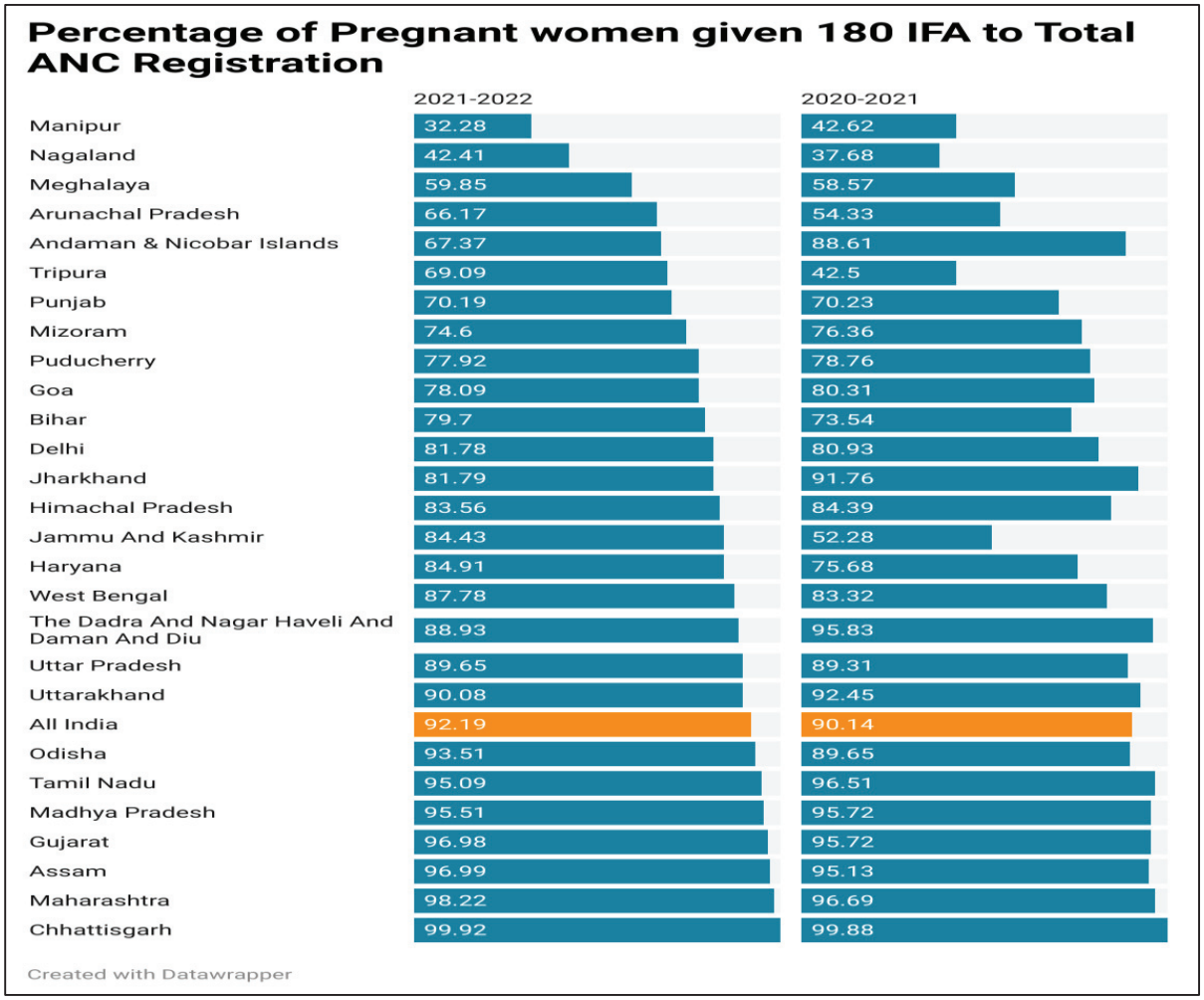
A Key intervention is to give IFA to pregnant women irrespective of anemia under Anemia Mukat Bharat.

Group	Dose & regime
Pregnant Women and Lactating Mothers (of 0-6 months child)	Daily, 1 Iron and Folic Acid tablet starting from the fourth month of pregnancy (that is from the second trimester), continued throughout pregnancy (minimum 180 days during pregnancy) and to be continued for 180 days, post-partum Each tablet containing 60 mg elemental Iron + 500 mcg Folic Acid, sugar-coated and red-colour.

Coverage of Iron Folic acid supplementation:

HMIS captures the indicator for tracking of coverage of iron folic acid supplementation: Number of PW provided full Course 180 Iron Folic Acid (IFA) tablets. At national level the coverage of Pregnant women provided full course 180 Iron folic acid is 92% in 2021-22 and 90% in 2020-21. The highest coverage found in the State of Chhattisgarh (99.9%), Maharashtra (98.2%), Assam (96.9%) whereas lowest coverage found in Manipur (32%), Nagaland (42%), Meghalaya (59.8%).

Figure 2.19: Showing coverage of prophylactic 180 Iron Folic Acid distributions to pregnant woman.



Deworming during Pregnancy:

WHO recommends periodic treatment with anthelminthic (deworming) medicines, without previous individual diagnosis to all at-risk people living in endemic areas. It defines at-risk people as pre-school-aged children, school-aged children, and women of childbearing age (including pregnant women in their second and third trimesters and lactating women. Considering the potential benefits and high infestation load from the public health perspective, deworming is recommended routinely during pregnancy.

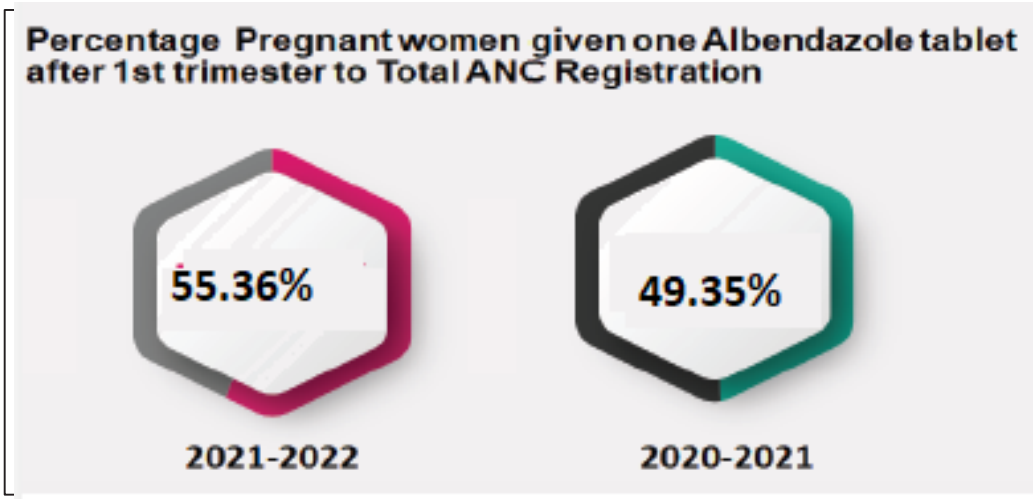
Prophylactic dose and regime for deworming in India.

Group	Dose & Regime
Pregnant Women and Lactating Mothers (0-6 months)	One dose of 400 mg Albendazole (1 tablet), after the first trimester, preferably during the second trimester.

Appropriate administration of antihelminthics results in curing the infestation or lessening the intensity of worm burden, which benefits both pregnant woman and communities by potentially improving the overall health and wellbeing of these women and by reducing the number of eggs shed in the environment.

As per HMIS report of FY 21-22 only 55.36 % of pregnant women given one tablet of albendazole after first trimester. Highest coverage found in the State of Gujarat (86.74%) followed by Chhattisgarh(83.22%) The lowest in Kerala (4.89%), . (Annexure:2.8)

Figure 2.20: Percentage of PW given one Albendazole tablet after 1st trimester: All India



Hypertension is the most common medical problem encountered during pregnancy, complicating 2-3% of pregnancies as per HMIS.

Hypertensive pregnancy disorders cover a spectrum of conditions, including preeclampsia/eclampsia, gestational hypertension, chronic hypertension, and preeclampsia superimposed on chronic hypertension. Hypertensive pregnancy disorders complicate 10% of pregnancies and cause significant maternal and fetal morbidity and mortality.

Classification of Hypertension in Pregnancy

Hypertension—systolic blood pressure of 140 mmHg or more and/or diastolic blood pressure of 90 mmHg or more, on two consecutive readings taken four hours or more apart.

Pre-eclampsia—hypertension developing after 20 weeks gestation with proteinuria and/or edima.

Eclampsia—hypertension developing after 20 weeks gestation with proteinuria and convulsions.

As per HMIS the national prevalence of Pregnancy induced hypertension in 20-2021 is 2.17 % and 2021-2022 is 2.22%. However, Pregnancy induced hypertension cases managed at institution in 2020-2021 is 69.6 and 71.5 in 2021-22.

Table 2.2: Showing Prevalence of Hypertension and its Management during Pregnancy

Indicators	20-21	21-22
Percentage of New cases of PW with hypertension detected to total number of pregnant women registered for ANC	2.17 %	2.22 %
Percentage of PW with hypertension detected, cases managed at institution to New case of PW with hypertension detected.	69.6 %	71.5 %
Number of Eclampsia cases managed during delivery to Institutional Deliveries conducted (Including C-Sections)	0.32%	0.34%

Source: HMIS

It is also observed that in HMIS the highest percentage of pregnancy induced hypertension cases was detected in Tamil Nadu 6.3% in 2021-2022, however, in 20-21 it is 5.5% in 2020-2021.

Gestational Diabetes Mellitus (GDM)

Gestational Diabetes Mellitus (GDM) is defined as Impaired Glucose Tolerance (IGT) with onset or first recognition during pregnancy. Undiagnosed or inadequately treated GDM can lead to significant maternal & fetal complications. Moreover, women with GDM and their offspring's are at increased risk of developing type 2 diabetes later in life.

Consequences of GDM:

Maternal risks of GDM include polyhydramnios, pre-eclampsia, prolonged labour, obstructed labour, cesarean section, uterine atony, postpartum hemorrhage, infection and progression of retinopathy which are the leading global causes of maternal morbidity and mortality.

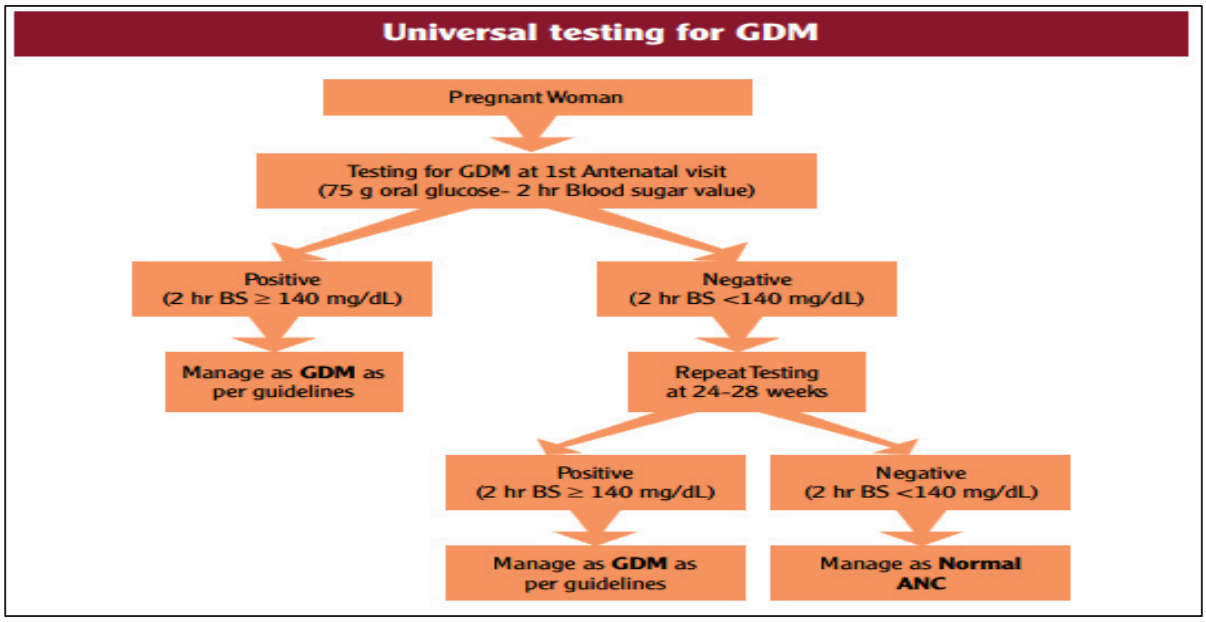
Fetal risks include spontaneous abortion, intra-uterine death, stillbirth, congenital malformation, shoulder dystocia, birth injuries, neonatal hypoglycemia and infant

respiratory distress syndrome. Long term clinical effects of GDM are important contributors to the burden of non-communicable diseases in many countries.

National Guidelines on Diagnosis and Management of Gestational Diabetes Mellitus

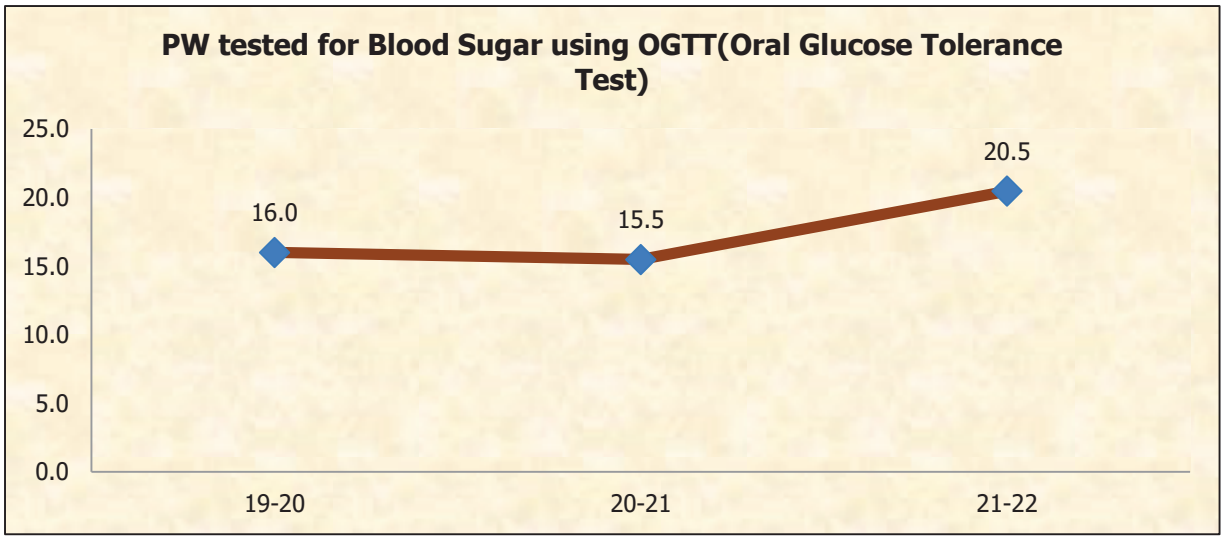
Government of India released a "National Guidelines on Diagnosis and Management of Gestational Diabetes Mellitus" in 2014 to address the need of high prevalence of GDM in India. The initiatives led to integration of GDM diagnosis and management within ANC care package in public health system.

Guidelines advocate for universal screening of all pregnant women at first antenatal contact. If the first test is negative, second test should be done at 24-28 weeks of gestation.



HMIS captures the Number of Pregnant woman tested for blood sugar using OGTT (Oral Glucose Tolerance Test).

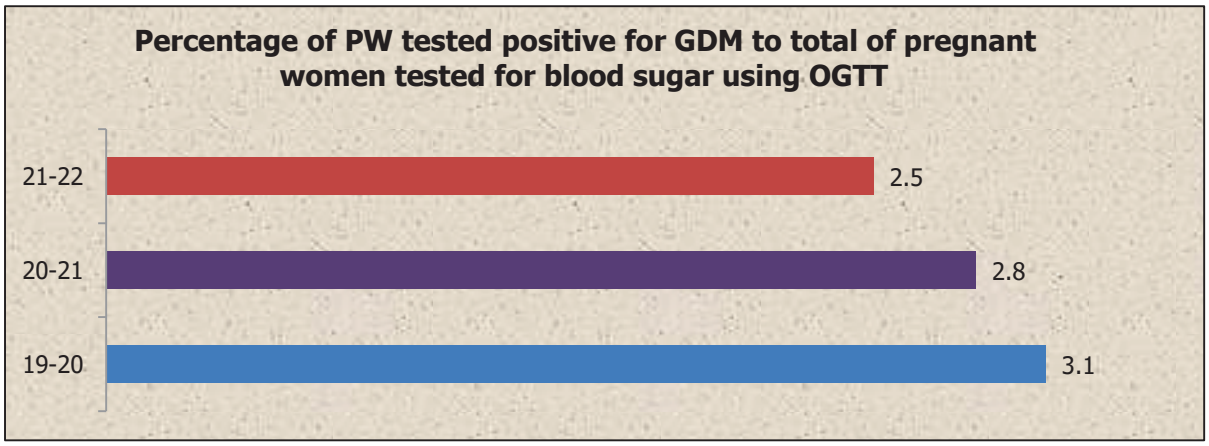
Figure 2.21 Showing Percentage of mother undergone OGTT test for detection of gestational diabetes during ANC.



The above figure shoes that as per HMIS report in 2019-20 only 16% of women tested for OGTT to the total ANC and in 20-21 it is 15.5% and in 20.5% for 21-22.

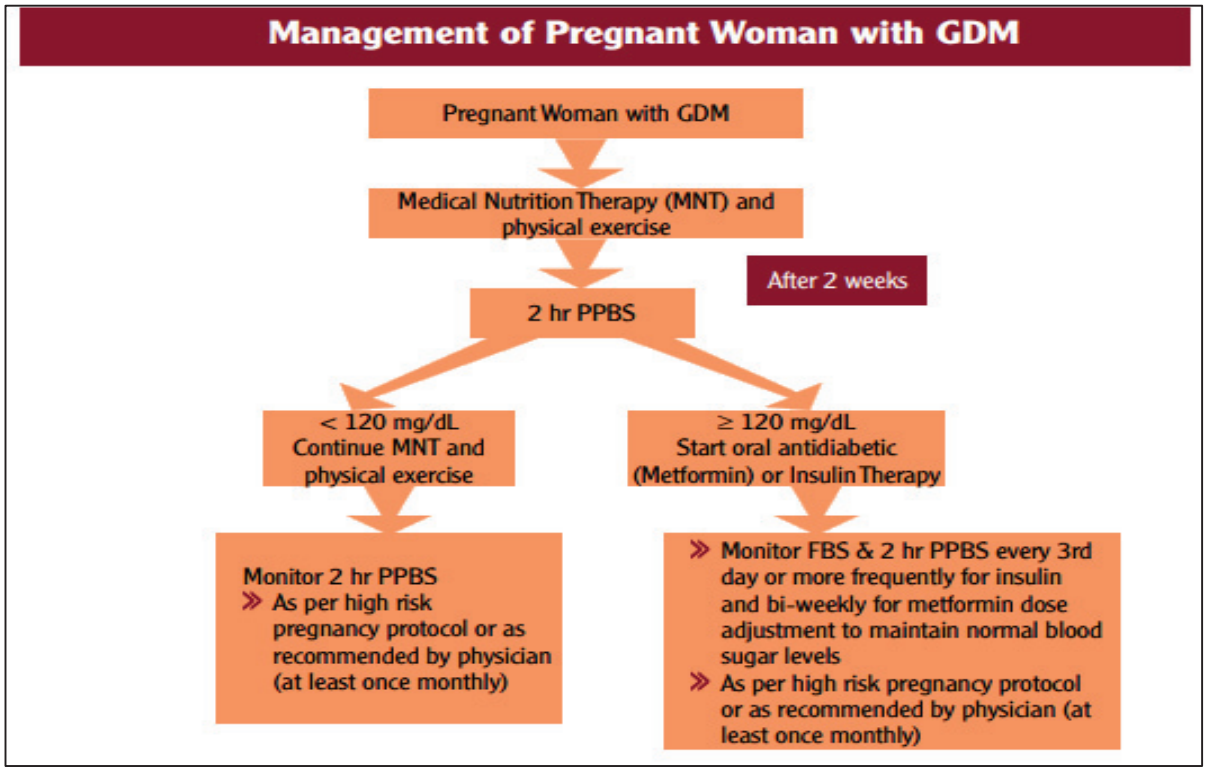
In India 21-22 as per HMIS report percentage of pregnant women tested for blood sugar using OGTT to Total ANC Registration is 20.48 and 15.5% in 2020-2021.

Figure 2.22 Showing trends of Gestational Diabetes Mellitus (GDM) in India.



Management of GDM:

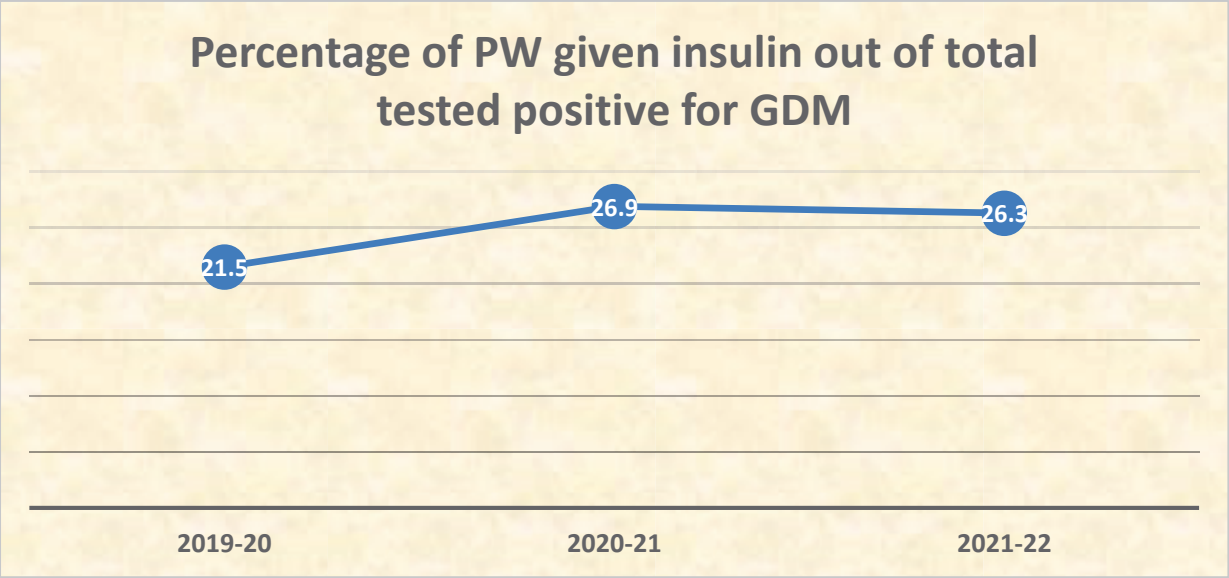
GDM is managed initially with MNT and physical exercise and if it is not controlled with MNT (lifestyle changes), Metformin or Insulin therapy is added to the MNT should be started on Medical Nutrition Therapy (MNT)



HMIS captures the GDM management indicator Number of PW given insulin out of total tested positive for GDM. Insulin therapy is the accepted medical management of pregnant women with GDM not controlled on MNT. Insulin is the first drug of choice and metformin can be considered after 20 weeks of gestation for medical management

of GDM. Insulin can be started any time during pregnancy for GDM management. If pregnant women with GDM before 20 weeks, and Medical Nutrition Therapy (MNT) failed, Insulin should be started.

Figure-2.23: Showing Percentage of Pregnant mothers received human insulin as a management of Gestational Diabetes Mellitus (GDM) in India



Childbirth:

Bringing a baby into this world is a long and arduous process. Pregnant women have a gestation period of over nine months, during which ample prenatal care is required. The baby (or babies, if carrying multiple foetuses) is delivered at the end of this gestation period, although many babies are born prematurely too.

Place of Delivery

Home Delivery: A home birth is a birth that takes place in a residence rather than in a hospital or a birthing centre.

Maternal delivery at home without skilled care at birth is a major public health issue. Maternal death is a severe public health problem where home delivery without skilled care at birth has a significant detrimental impact. Most importantly, as women are dying from preventable causes during childbirth, non-institutional or home delivery needs to be eliminated. Sustainable Development Goal 3 (SDG-3) targets: "reducing the global MMR to less than 70 per 100,000 births, with no country having a maternal mortality rate of more than twice the global average. In India 1067470 home delivery reported HMIS in 2020-21 and 922637 in 2021-22. Highest numbers of home deliveries 40.6% and 42.8 % are found the State of Meghalaya in 20-21 and 21-22 respectively. The state of Nagaland, Manipur, Bihar, Uttrakhand, Mizoram, Assam, Uttar Pradesh, Himachal Pradesh, Tripura, Jammu & Kashmir and Delhi are the states where home deliveries are found more than national average. (Annexure:2.9)

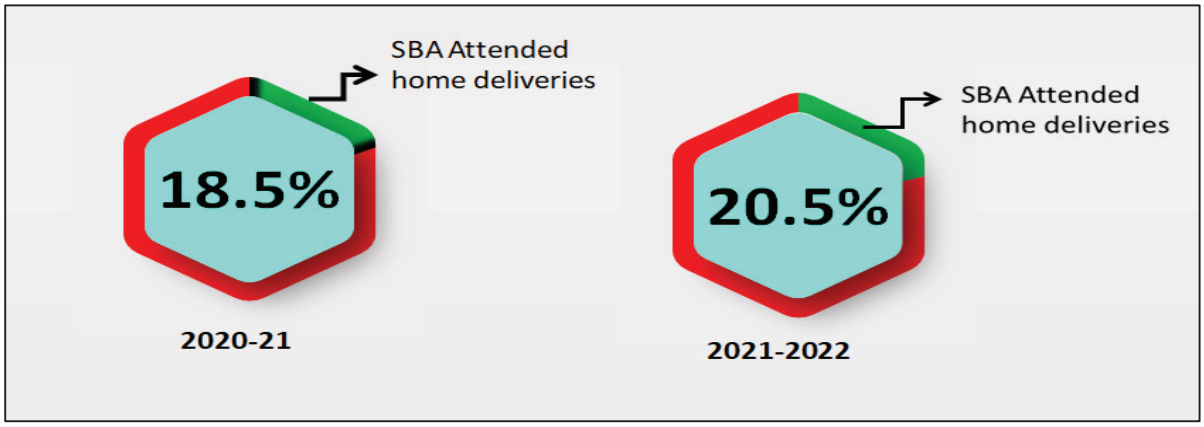
Table 2.3 Showing Place of deliveries in India in Percentage

Home delivery and Institutional Delivery in India				
States	20-21	20-21	21-22	21-22
	% Home Delivery	% Institutional Deliveries	% Home Delivery	% Institutional Deliveries
Meghalaya	40.6	59.4	42.8	57.2
Nagaland	23.9	76.1	21.6	78.4
Manipur	20.0	79.9	19.7	80.3
Bihar	13.9	86.2	12.9	87.0
Uttarakhand	13.4	86.6	11.5	88.5
Mizoram	12.9	87.1	12.8	87.2
Assam	10.5	89.5	8.7	91.3
Uttar Pradesh	10.1	89.9	8.8	91.2
Arunachal Pradesh	8.7	91.3	9.3	90.7
Himachal Pradesh	8.5	91.5	7.3	92.7
Tripura	7.6	92.4	5.5	94.5
Jammu And Kashmir	6.6	93.4	5.1	94.9
Delhi	5.4	94.6	4.7	95.3
All India	5.2	94.8	4.5	95.5
Haryana	4.5	95.6	3.5	96.5
Madhya Pradesh	4.3	95.7	4.1	95.9
Jharkhand	4.1	95.9	3.1	96.9
Ladakh	2.8	97.2	1.2	98.8
Odisha	2.7	97.3	2.2	97.8
Rajasthan	2.1	97.9	1.6	98.5
West Bengal	1.9	98.2	1.3	98.8
Chhattisgarh	1.7	98.3	1.3	98.7
Andaman & Nicobar Islands	1.5	98.5	1.5	98.5
Punjab	1.4	98.6	0.9	99.0
Sikkim	0.9	99.1	0.6	99.5
Maharashtra	0.8	99.2	0.6	99.4
Gujarat	0.4	99.6	0.2	99.8
Andhra Pradesh	0.3	99.7	0.03	99.9
The Dadra And Nagar Haveli And Daman And Diu	0.3	99.7	0.4	99.6
Chandigarh	0.2	99.8	0.1	99.9
Telangana	0.2	99.8	0.0	100.0
Kerala	0.1	99.9	0.1	99.9
Karnataka	0.1	99.9	0.1	99.9
Goa	0.1	99.9	0.04	99.9
Puducherry	0.03	99.9	0.01	99.9
Tamil Nadu	0.01	99.9	0.01	99.9
Lakshadweep	0.0	100.0	0.0	100.0

Birth Attendant for Home deliveries :

As per HMIS in 2021-2022, 4.5 % of births in India take place at home and a large proportion are assisted by unskilled persons. It is estimated that nearly 15 present mothers will develop one or other life threatening obstetric complications during intra partum and immediate post-partum period Since any pregnancy can develop complications at any stage which cannot be predicted. Keeping this in view, it is essential that all mothers have access to a birth attendant, who has requisite midwifery skills to recognize complications, manage as per scope of practise and refer if needed. Government of India is committed to ensure universal coverage of all births with skilled attendance both in the institution and at community level and to provide access to emergency obstetric care services for women experiencing serious complications. To be called an SBA, the health workers (Auxiliary Nurse Midwives (ANMs), Lady Health Visitors (LHVs) and Staff Nurses (SNs)) must possess technical competence related to routine care provision including identification and immediate management of complications arising during pregnancy and childbirth.

Figure 2.24: Showing Percentage of Home Deliveries attended by Skill Birth Attendant.



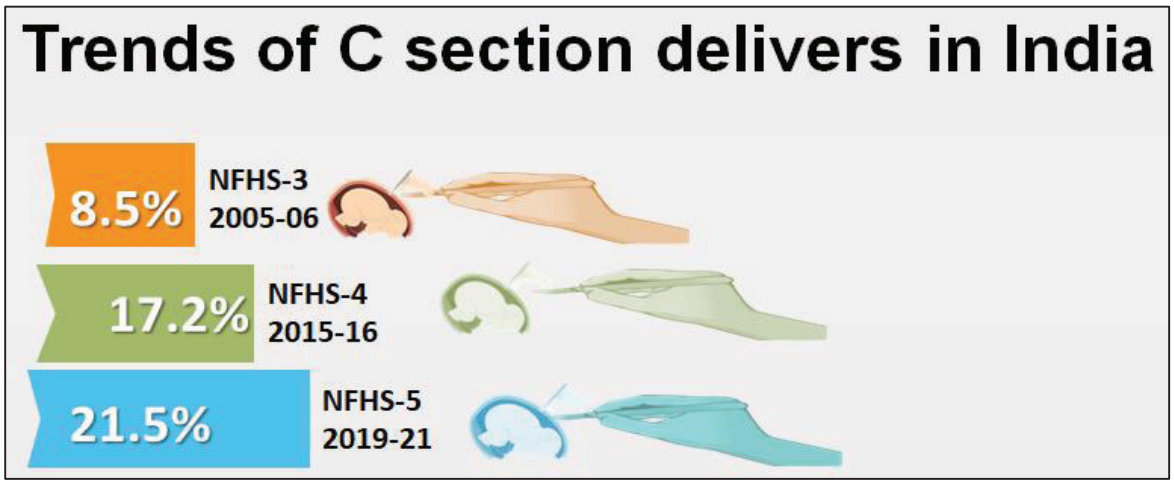
Source: HMIS report.

GoI considers an SBA to be a person who can handle common obstetric and neonatal emergencies and is able to timely detect and recognise when a situation reaches a point beyond his/her capability, and refers the woman/new-borns to an appropriate facility without delay. Out of total home deliveries only 18.5 % of home deliveries were attended by Skilled Birth Attendant in 2020-2021 and 20.5% in 2021-2022. (Annexure :2.10)

C-Section deliveries in India:

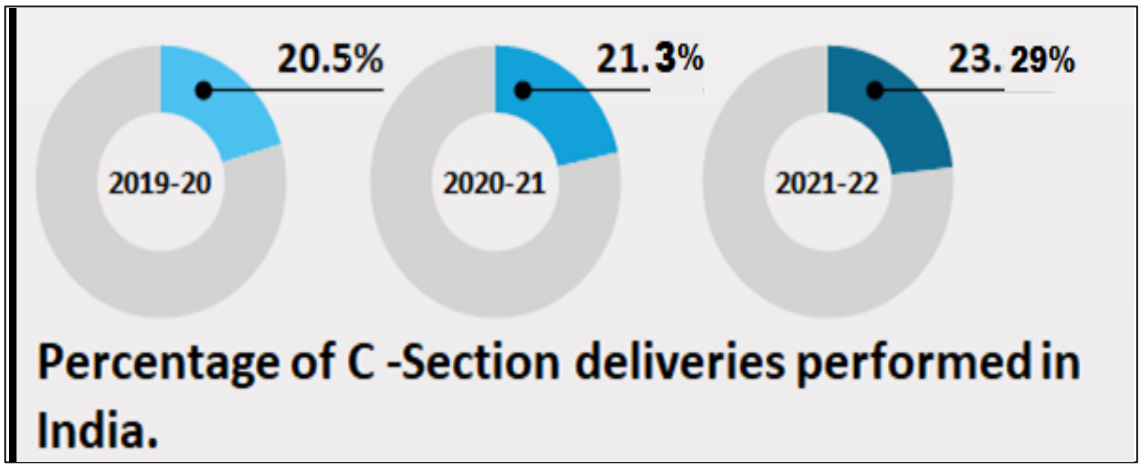
The caesarean section is a globally recognised maternal health-care indicator. Cesarean section (CS) when indicated is a live saving procedure but when performed without appropriate indications can add risk to both mother and baby. Unnecessary caesarean sections also pull resources away from other services in overloaded health system.

Figure-2.25: Showing increasing trends of C- section deliveries in India as per NFHS report.



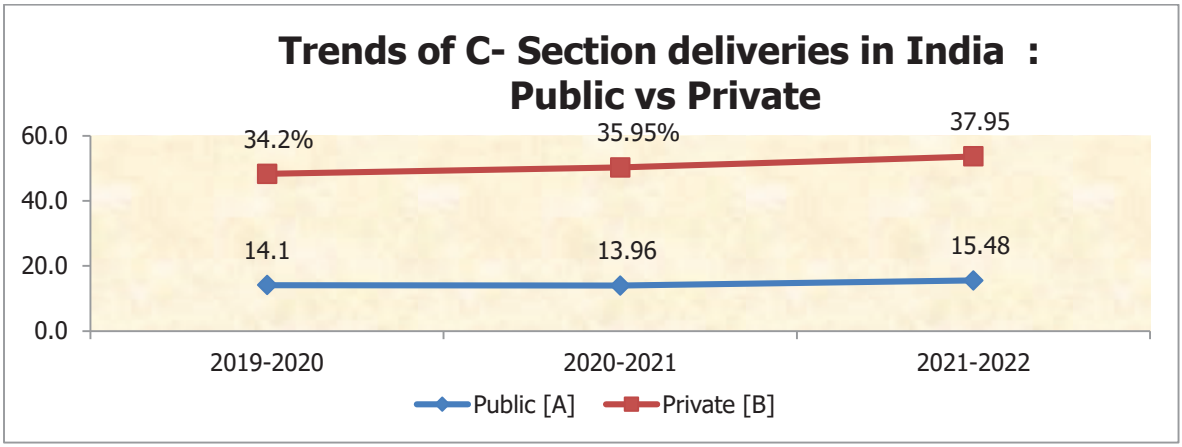
The World Health Organization (WHO) recommends that the percentage of caesarean deliveries should not exceed 10% to 15% in any nation. In India as per HMIS total 20.5 % of c section deliveries reported in 2019-2020. In 2020-21 it increases to 21.3% and 23.29% in 2021-22. The trends show that highest percentage of C section deliveries were reported from Telangana 55.33% in 2020-2021 and 54.09%in 2021-2022.(Annexure:2.11)

Figure 2.26 Showing increasing trends of C- section deliveries in India as per HMIS report.



It is also observed that higher percentage of C section deliveries were found in private facilities the figure below is showing a trend of very higher percentage of C section deliveries in Private hospitals as compare to c section deliveries in public facilities.

Figure 2.27 Showing C –section deliveries trends in Public and Private Institutions in India.



C section deliveries in Private Institutions in HMIS

Highest percentage of c section deliveries in private institutions who were reported in HMIS found in Andaman and Nicobar Islands followed by Tripura in 2020-2021 and in 2021-2022

The lowest percentage of C-section deliveries in private hospitals reported in HMIS were found in Rajasthan 18.9 % followed by Jharkhand 20.2% in 2020-2021. In 2021-2022 the lowest number of institutional deliveries in private institutions who are reported in HMIS were found in Jharkhand(20.09%),Uttar Pradesh (20.11) followed by Uttrakhand (20.34). (Annexure:2.11)

Comprehensive abortion care:

Abortion is the termination of a pregnancy. It is defined as 'the intentional ending of a pregnancy', by the Cambridge Dictionary.

Unsafe abortion is a preventable – cause of maternal deaths and morbidities. It can lead to physical and mental health complications and social and financial burdens for women, communities and health systems. (WHO, Key facts November 21)

India was among the first countries to legalize abortion. Abortion has been legal in India since 1971 under broad criteria, including economic or social necessity, rape, incest, fetal impairment or contraceptive failure within marriage.

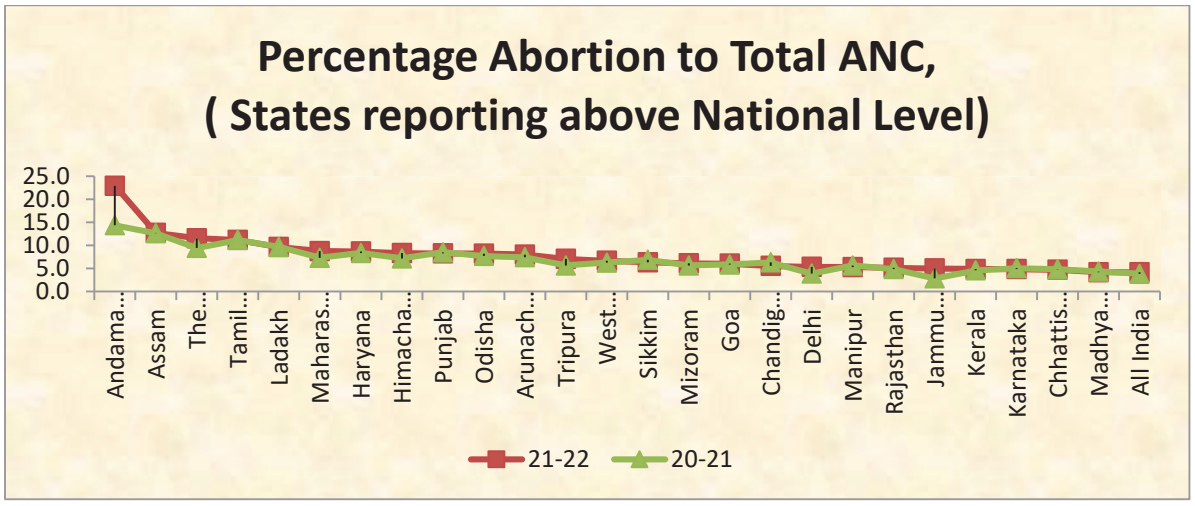
Comprehensive abortion care is included in the list of essential health care services published by WHO in 2020. Abortion is a simple health care intervention that can be effectively managed by a wide range of health workers using medication or a surgical procedure.

Comprehensive abortion care includes the provision of information, abortion management and post-abortion care. It encompasses care related to miscarriage (spontaneous abortion and missed abortion), induced abortion (the deliberate interruption of an on-going pregnancy by medical or surgical means), incomplete abortion as well as fetal death (intrauterine fetal demise).

Induced abortion provision is permitted at all government-run facilities at the Public Health Centre and higher levels, as long as the provider is registered in abortion provision. However, several factors contribute to the inadequacy of access to public sector abortion services, including high proportions of public facilities lacking trained staff and necessary equipment and supplies.

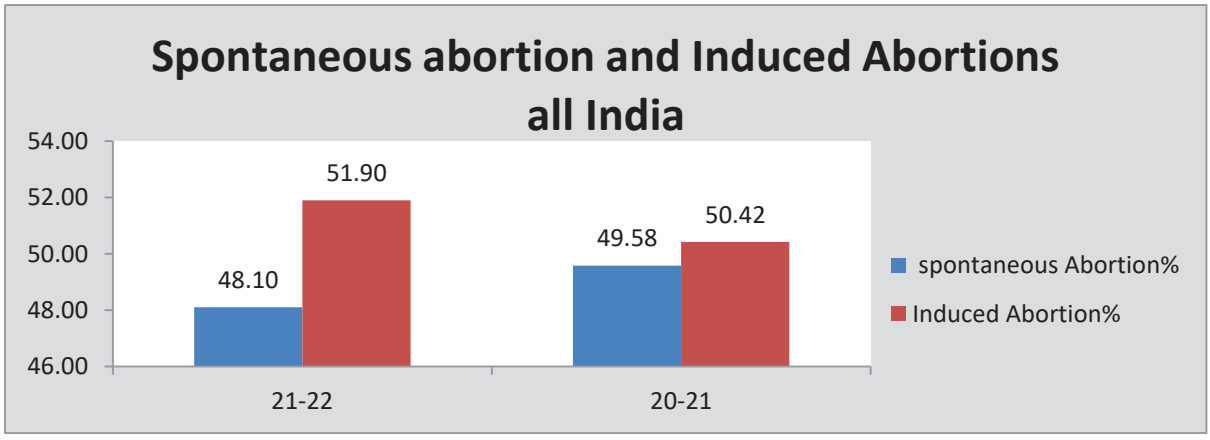
Based on the data reported on HMIS portal during 2020-21 and 2021-22, the abortion rate (Number of abortions to total ANC at all India level is 3.9% and 4.1% respectively. In 2021-2022 the highest percentage of abortions found in Andaman & Nicobar island (22.9%) followed by Assam 12.7% whereas lowest abortions rate found in Bihar (0.4%) followed by Telangana (0.9%).

Graph 2.28: Showing State/UT-wise Percentage of abortion to total ANC reporting above the National Average:



In 2021-2022, it is also observed that the out of total abortions 48.10 % of abortions are spontaneous. It is also observed that highest percentage spontaneous abortions found in the State of Meghalaya (95%), followed by Lakshadweep (93%), Ladakh (86.7%), Mizoram (83.3%). The lowest Percentage of spontaneous abortions are reported by Arunachal Pradesh (8.8%) followed by Andaman & Nicobar Islands (16.8%),Nagaland(21.6%), Assam(24.0%).

Figure 2.29: Showing Percentage of Spontaneous abortion and Induced abortions at National Level.



MTP more than 12 weeks of Pregnancy

The earlier an abortion is provided the safer it is, because earlier abortions are less complicated. Therefore, it is important that women who decide to get abortions can do so without unnecessary delays. In fact, 90.48% of all abortions in India are obtained within the first 12-13 weeks after the last menstrual period (LMP) (HMIS report 2021-22). Sometimes, however, women have compelling reasons to obtain abortions in later weeks.

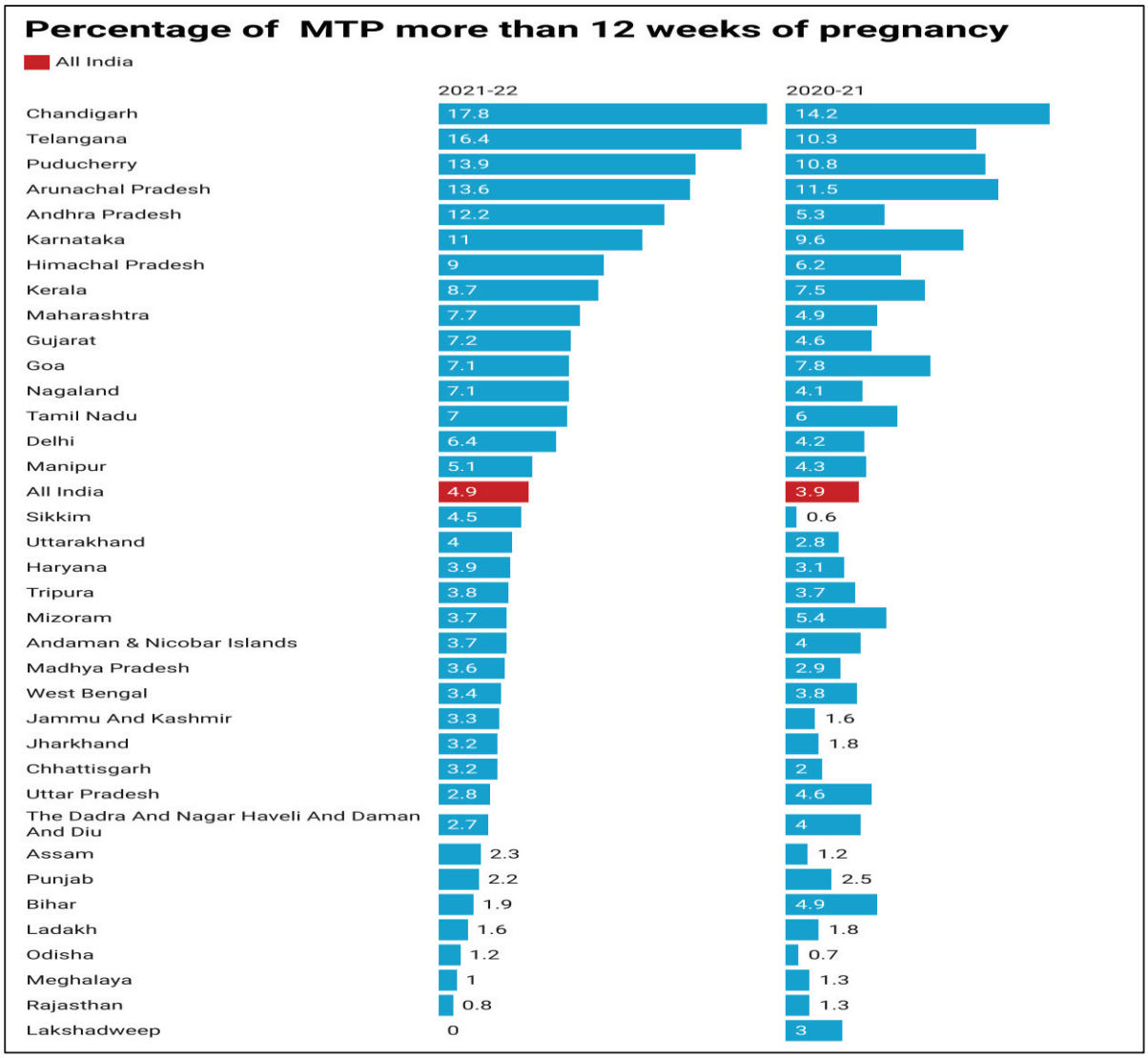
While abortions at or after 13 weeks gestation comprise a minority (around 9.5% in 2021-22) of the total abortions at Nationwide as per HMIS reporting, they are responsible for the majority of serious abortion-related complications.

Table 2.4 Showing: Terminating a pregnancy at different gestational periods as per MTP Act

Time since conception	**Requirement for terminating pregnancy**	
	MTP Act,1971	MTP (Amendment) Bill,2020
Up to 12 weeks	Advice of one doctor	Advice of one doctor
12 to 20 weeks	Advice of two doctors	Advice of one doctor
20 to 24 weeks	Not allowed	Two doctors for some categories of pregnant women
More than 24 weeks	Not allowed	Medical Board in case of substantial foetal abnormality
Any time during the pregnancy	One doctor, if immediately necessary to save pregnant woman's life	
Note: *Doctor refers to registered medical practitioner with experience/training in gynaecology or obstetrics.		

Source- The Medical Termination Of Pregnancy (Amendment) Act, 2021. (https://egazette.nic.in/WriteReadData/2021/226130.pdf)

Figure 2.30: State/UT wise Percentage of MTP more than 12 weeks of pregnancy.



Source:HMIS report

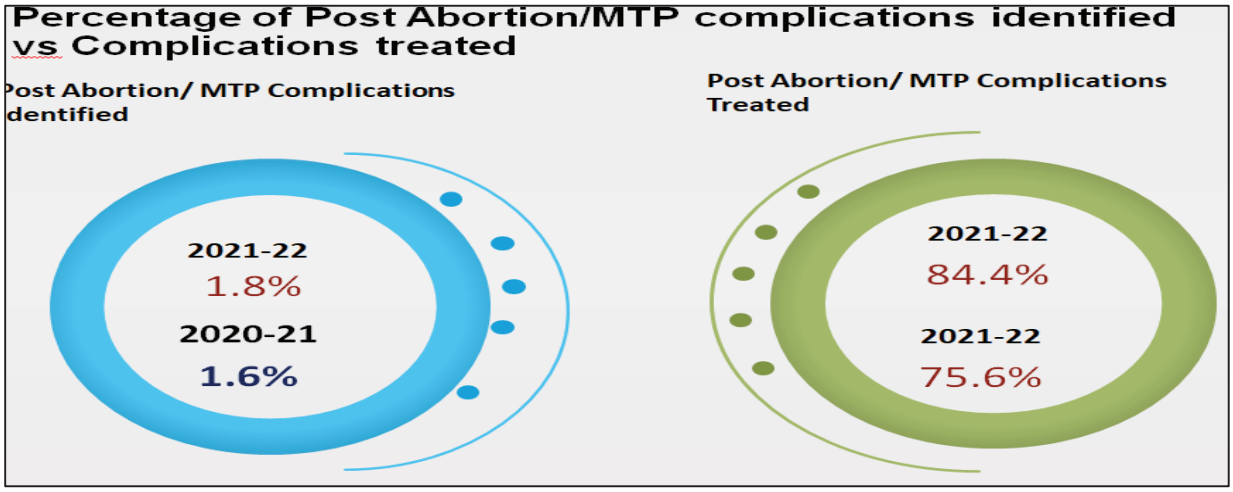
Post Abortion/ MTP Complications:

MTP and spontaneous miscarriages, can lead to a variety of complications. Most complications are considered minor such as pain, bleeding, infection, and post-anesthesia complications. Others are major, including uterine atony and subsequent hemorrhage, uterine perforation, injuries to adjacent organs (bladder or bowels),cervical laceration, failed abortion, septic abortion, and disseminated intravascular coagulation (DIC)(WHO fact sheet **https://www.who.int/news-room/fact-sheets/detail/abortion**).

There are three major mechanisms by which abortion complications can be classified.

1. Infection can be the result of a failure to exercise universal precautions prior to the procedure, such as hand washing, surgical glove use, proper sterilization of the field, use of non-sterile instruments, as well as the presence of a pre-existing infectious process in a patient such as cervicitis or endometritis.
2. Incomplete evacuation of the products of conception leads to the collection of blood in the uterus, causing over distention and atony which results in hemorrhage. It can also lead to infection and possible sepsis.
3. Injury from the surgical procedure itself depends upon the method used and includes vaginal or cervical lacerations, as well as uterine, bowel, or bladder injury.

Figure 2.31: Showing All India percentage of Post Abortion/MTP Complications identified



Uttar Pradesh (9.0%) reported highest post abortion complications followed by Madhya Pradesh (7.7%) in 2021-22.

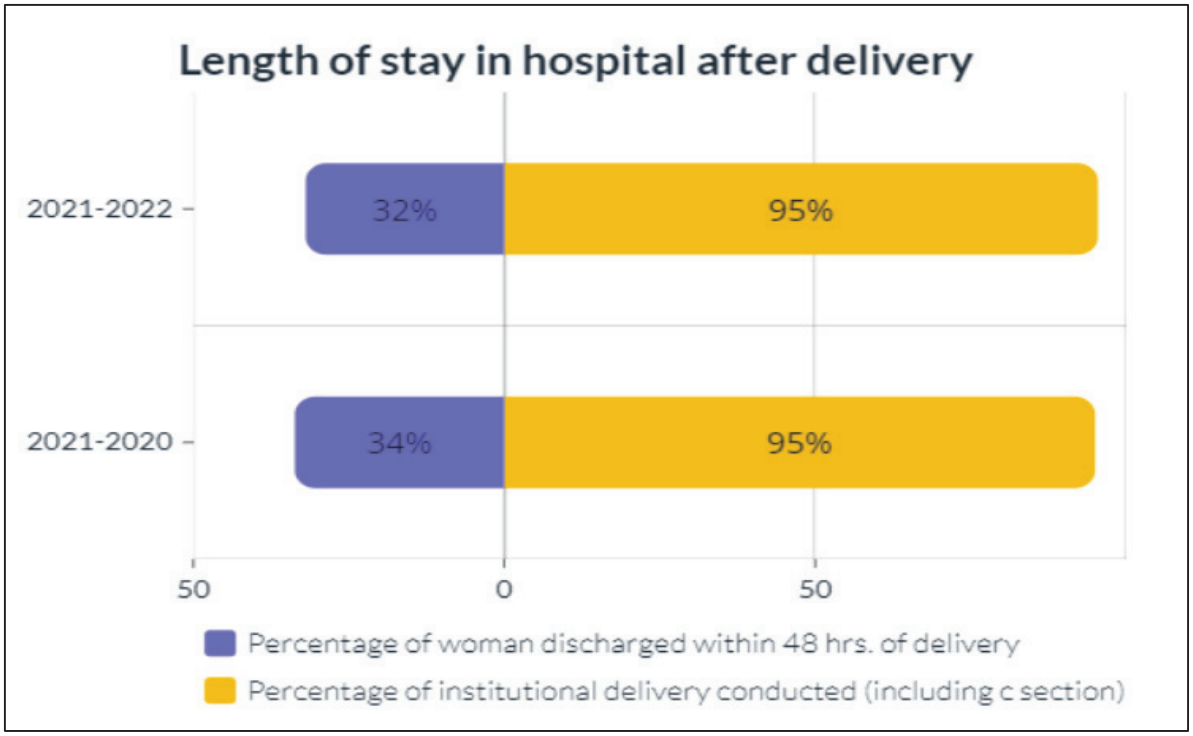
Postnatal Care: (PNC)

As per the World Health Organization, postpartum period or postnatal period is defined as the period immediately following birth of the baby and extending for about 6 weeks. This period represents a critical phase in determining the health and survival of the mother and her newborn. Most of the maternal and infant deaths occur in the 1st month after birth: "Almost half of postnatal maternal deaths occur within the first 24 hour. According to the WHO (2015), the first 24 h postpartum is the highest risk period for women and newborns. For both the mother and the infant, immediate postnatal care is important to treat complications, like postpartum infections, excessive bleeding, pain in the perineal area, vaginal discharge, etc., that arise from birth and to provide the mother with relevant information on caring for herself and her baby. The extent to which women receive such care is directly related to the length of their postpartum

stay. Postpartum length of stay after delivery has been identified as an essential quality indicator of woman care. Ensuring 48 hrs. stay in hospital during childbirth and through subsequent home visits on 3rd, 7th ,14,21,28, and 42nd days is the important components for identification and management of emergencies occurring during postnatal period.

As per maternal and child health program guidelines in India, it is clearly mentioned that all the government health facilities should discharge the mother and baby only after 48 hours of delivery in case of normal delivery and after 7 days in case of delivery conducted by cesarean sections.

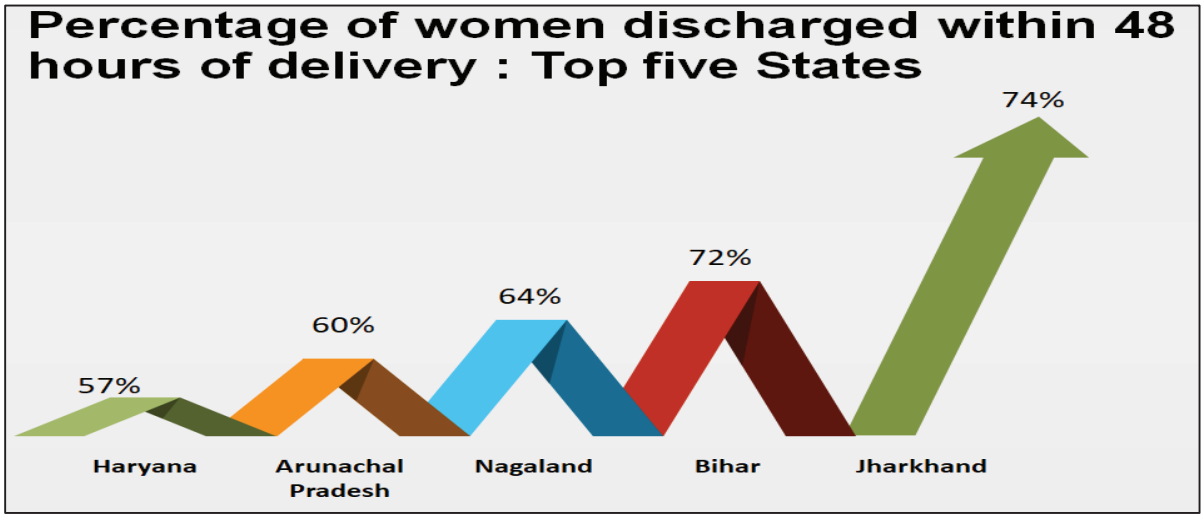
Figure 2.32: Showing Hours of Stay in Hospital after the delivery in Percentage



Source: HMIS Report

Length of stay after childbirth is also an important factor influencing MMR, but it has not increased to the same degree as institutional birth. There was a gigantic increase in institutional births from 39% in 2005–06 to 95.45% in 2021-2022 and 95% in 2020-2021. During the same period, the percentage of mothers discharged within 48 hrs. is only 32% in 2021-2022 and 33.6% in 2020-21.

Figure 2.33: Showing top five states where woman stay in hospital less than 48 hours after the delivery FY: 2021-2022.



Although it is not desirable and all efforts should be made to convince the mothers to stay in the institution for the first 48 hrs. The above graph is showing top five States where mothers return home before 48 hrs. of delivery reported in HMIS.

However this percentage is very low in Goa (0.04%) followed by Tamil Nadu (0.2%), Puducherry (1.1%), Tripura (5.6%) and Karnataka (7.4%), in FY 2021-2022.

Iron & Calcium Supplementation in Post-Partum woman:

Dietary requirement for different nutrients increases during pregnancy and lactation. The dietary intake of many Indian women, however, is significantly below recommended dietary requirements. Of these, two most important nutrients are iron and calcium.

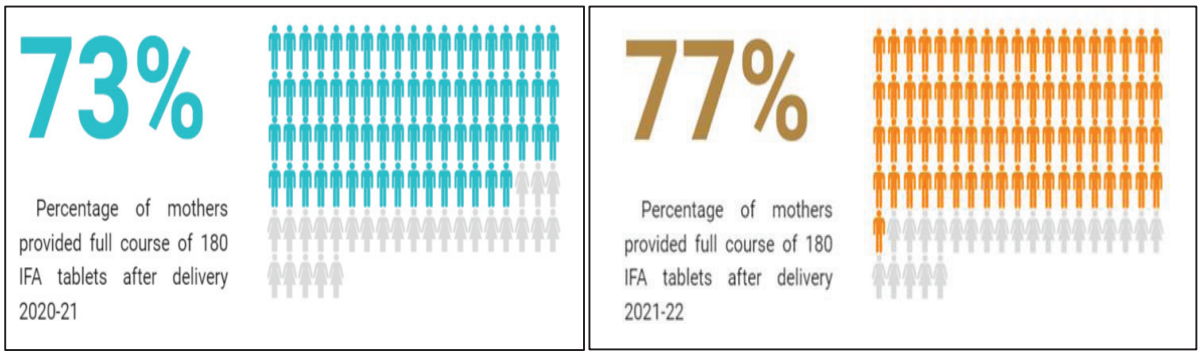
Iron Supplementation:

Post-partum period may serve as a time to restore iron lost during pregnancy and delivery, however this period may serve as a time to restore iron lost during pregnancy and delivery. One of the strongest predictors of postpartum anaemia is anaemia during pregnancy, as iron stores tend to
remain low for several months after childbirth, especially if there is significant blood loss during the delivery and additional iron is not consumed in sufficient quantities.
Iron deficiency and anaemia during the postpartum period may have long-term health implications for the mother and her infant. Mothers with low iron stores at the time of delivery and following childbirth may experience fatigue, altered cognition and depressive symptoms. These alterations in the mother's emotional and cognitive functioning may, in turn, affect her interactions with the infant and may negatively impact infant behaviour and development (WHO Guideline: Iron supplementation in postpartum women).

Iron supplementation has proven to be effective for increasing haemoglobin concentrations among pregnant and non-pregnant women (WHO), and iron supplementation has been recommended as a public health approach to improve

maternal and infant health outcomes in different age groups (Anemia Mukt Bharat Training Tool Kit).

Figure 2.34: Showing Percentage of mothers provided full course of 180 Iron Folic acid tablets after Institutional delivery.



States above national average: The above figure shows national average of FY 2021-2022 however HMIS reported 18 states above the national average of 77%, namely Chandigarh, Meghalaya, Assam, Karnataka, Gujrat, Goa, Himachal Pradesh, Andhra Pradesh, Chhattisgarh, Lakshadweep, Madhya Pradesh, Maharashtra, Uttarakhand, Odisha, Rajasthan, Dadra & Nagar Haveli and Daman & Diu, Tamil Nadu and West Bengal.

In FY 2020-2021 18 states performing above the National average, namely Lakshadweep, Goa, Ladakh, Chandigarh, Himachal Pradesh, Gujrat, Assam, Meghalaya, Sikkim, Karnataka, Madhya Pradesh, chattisgarh, Maharashtra, Tamil Nadu,Odisha,Rajasthan,Jharkhand, Dadra & Nagar Haveli and Daman & Diu.

Calcium Supplementation:

Adequate calcium intake during post-partum period has the potential to improve maternal bone mineral content, breast milk concentration.

The mineral accretion rate of a neonate reaches about 30–40 mg/kg per day, while calcium transfer between mothers and infants is on average 210 mg per day. (Olausson H., Goldberg G.R., Laskey M.A., Schoenmakers I., Jarjou L.M., Prentice A. Calcium economy in human pregnancy and lactation. Nutr. Res. Rev. 2012;25:40–67. doi: 10.1017/S0954422411000187. [PubMed] [CrossRef] [Google Scholar] [Ref list]) For babies who are breastfed exclusively through the first 6 months, the amount of mineral demand from the mothers is four times greater than that during 9 months of pregnancy.

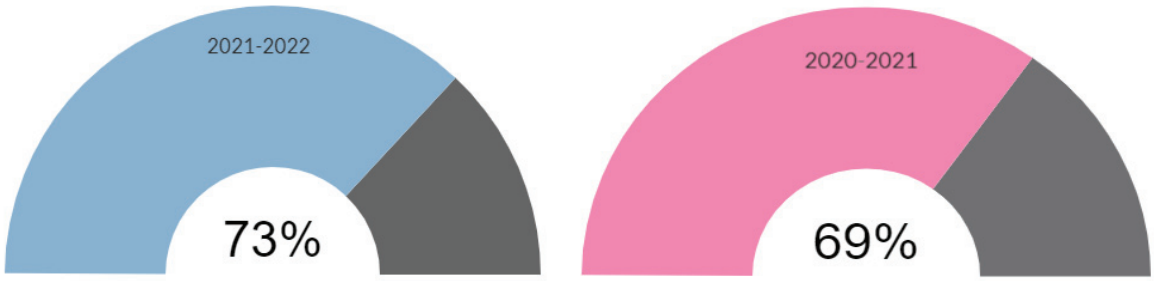
The daily recommended dietary allowances (RDA) for calcium in pregnancy and lactation is 1200 mg per day. The National Nutrition Monitoring Bureau (NNMB) - 2012

data from 10 Indian states shows that the daily calcium intake during pregnancy and lactation for Indian women is less than 30% of RDA (which means it is only 400 mg/d). This shows that most pregnant and lactating women in India have low dietary calcium intake.

National Guidelines for calcium supplementation during pregnancy and lactation

Oral swallowable calcium tablets to be taken twice a day (total 1g calcium/day) starting from 14 weeks of pregnancy up to six months post-partum.

Figure2.35: Showing Percentage of mothers provided full course of 360 Calcium tablets after delivery to total institutional deliveries

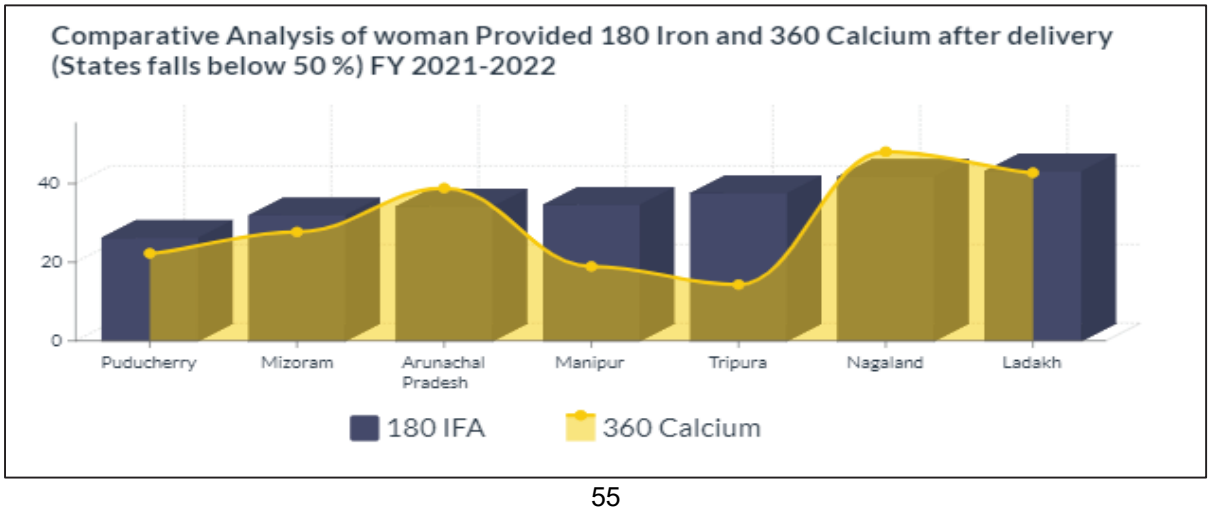


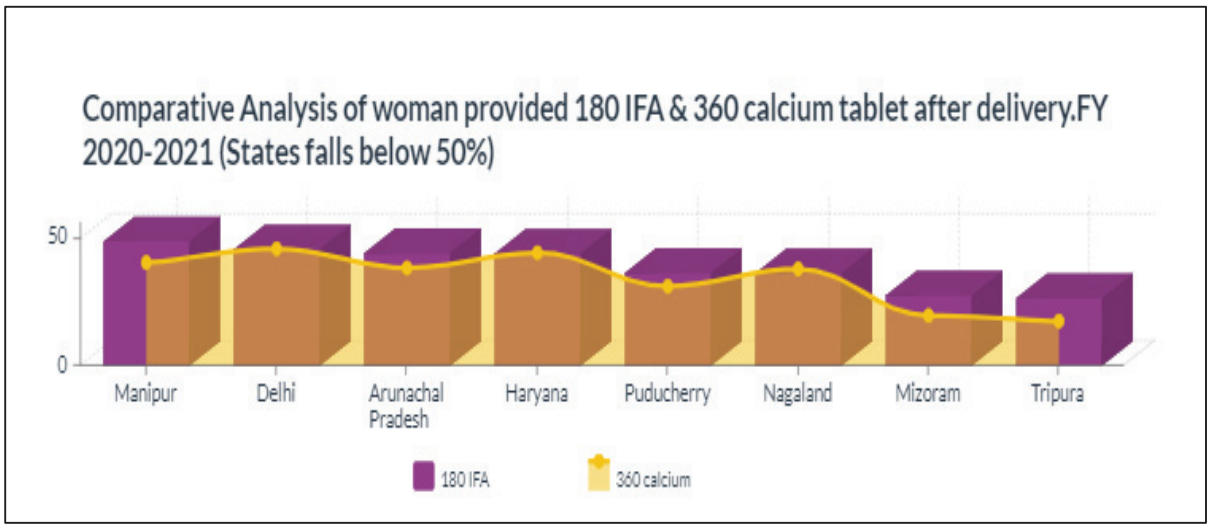
It is observed that in 2021-2022 Chandigarh, Assam, Goa, Meghalaya, Karnataka, Himachal Pradesh, Gujrat and Uttrakhand is performing above the 90%. 18 States are above the national average. Arunachal Pradesh, Mizoram, Puducherry, Manipur and Tripura are below 40%.

It is also observed that the coverage of Iron folic acid is higher than the 360 calcium coverage in all states except in the State of Sikkim, Goa, Uttarakhand, Tamil Nadu, Telangana, Jharkhand, Kerala, Bihar and Nagaland where the coverage of calcium is found higher in FY 2021-2022.

In FY 2020-2021 also the coverage of 180 IFA is higher than 360 calcium in all states except in the State of Sikkim, Gujrat, Tamil Nadu, Kerala, Delhi, Nagaland, Haryana.

Figure 2.36: Showing Comparative Analysis of woman Provided 180 Iron Folic acid and 360 calcium after delivery




Comparative Analysis of woman provided 180 IFA & 360 calcium tablet after delivery.FY 2020-2021 (States falls below 50%)
50
0
Manipur
Delhi
Arunachal Pradesh
Haryana
Puducherry
Nagaland
Mizoram
Tripura
180 IFA
360 calcium

Annexure-2.1

Maternal Mortality Ratio

India & Major States	MMR	Maternal Mortality Rate
INDIA	**97**	**6**
Assam	195	12.1
Bihar	118	11.2
Jharkhand	56	4.2
Madhya Pradesh	173	15.3
Chhattisgarh	137	9.9
Odisha	119	7.3
Rajasthan	113	9.6
Uttar Pradesh	167	14.3
Uttarakhand	103	6.3
EAG AND ASSAM SUBTOTAL	**137**	**11**
Andhra Pradesh	45	2.4
Telangana	43	2.3
Karnataka	69	3.5
Kerala	19	0.9
Tamil Nadu	54	2.7
SOUTH SUBTOTAL	**49**	**2**
Gujarat	57	3.9
Haryana	110	8
Maharashtra	33	1.8
Punjab	105	5.4
West Bengal	103	5
Other states	77	3.9
OTHER SUBTOTAL	**76**	**4**

Source: SPECIAL BULLETIN ON MATERNAL MORTALITY IN INDIA 2018-20, SRS.

Annexure- 2.2

State/UT wise distribution of Percentage of Pregnant Women provided - Free Medicines under JSSK

State/UT	2020-2021	2021-2022
All India	**54.49**	**53.14**
Andhra Pradesh	30.38	34.01
Arunachal Pradesh	56.06	57.00
Assam	89.84	83.60
Bihar	11.99	10.19
Chandigarh	58.93	56.49
Chhattisgarh	58.00	47.33
Delhi	29.65	30.36
Goa	73.63	70.66
Gujarat	64.75	60.92
Haryana	69.48	75.57
Himachal Pradesh	130.00	98.24
Jammu And Kashmir	32.32	52.69
Jharkhand	41.87	43.99
Karnataka	11.39	12.59
Kerala	55.49	53.37
Ladakh	88.73	21.63
Lakshadweep	1.40	1.35
Madhya Pradesh	62.59	48.97
Maharashtra	92.88	94.87
Manipur	16.50	22.76
Meghalaya	75.59	87.93
Mizoram	16.88	16.09
Nagaland	18.23	22.46
Odisha	66.91	71.05
Puducherry	9.21	11.86
Punjab	39.54	40.82
Rajasthan	89.86	107.29
Sikkim	22.82	16.38
Tamil Nadu	53.04	49.67
Telangana	9.34	10.61
The Dadra And Nagar Haveli And Daman And Diu	57.70	75.87
Tripura	66.18	65.43
Uttarakhand	88.71	81.10
Uttar Pradesh	62.68	58.59
West Bengal	58.12	46.38

Annexure -2.3

State/UT wise distribution of Percentage of Pregnant Women provided - Free Diagnostics under JSSK

State/UT	2020-2021	2021-2022
All India	52.59	51.87
Andhra Pradesh	30.06	33.46
Arunachal Pradesh	59.54	59.18
Assam	108.92	102.06
Bihar	10.61	8.98
Chandigarh	231.50	257.68
Chhattisgarh	56.24	45.55
Delhi	20.38	18.33
Goa	73.63	70.66
Gujarat	55.82	53.78
Haryana	64.36	76.73
Himachal Pradesh	206.78	153.90
Jammu And Kashmir	107.18	211.86
Jharkhand	35.32	39.40
Karnataka	8.70	9.88
Kerala	64.27	68.64
Ladakh	107.94	53.04
Lakshadweep	1.40	1.35
Madhya Pradesh	60.17	48.26
Maharashtra	93.05	94.84
Manipur	38.93	50.99
Meghalaya	86.10	87.47
Mizoram	9.92	8.41
Nagaland	18.04	19.08
Odisha	63.48	67.01
Puducherry	9.21	11.86
Punjab	93.30	97.90
Rajasthan	46.49	53.99
Sikkim	19.34	14.79
Tamil Nadu	52.81	49.76
Telangana	6.99	7.38
The Dadra And Nagar Haveli And Daman And Diu	49.16	60.85
Tripura	60.50	60.61
Uttarakhand	97.91	97.63
Uttar Pradesh	60.06	57.27
West Bengal	55.37	44.97

Annexure -2.4

State/UT wise distribution of Percentage of ANC Registered to Estimated Pregnancies

State/UT	2020-2021	2021-2022
All India	91.76	92.06
Andaman & Nicobar Islands	98.33	104.16
Andhra Pradesh	99.64	96.65
Arunachal Pradesh	106.21	112.04
Assam	80.98	80.19
Bihar	91.95	86.13
Chandigarh	115.1	142.96
Chhattisgarh	85.43	90.99
Delhi	149.91	131.11
Goa	104.62	117.41
Gujarat	86.19	89.05
Haryana	85.9	82.29
Himachal Pradesh	88.31	84.74
Jammu And Kashmir	167.63	115.62
Jharkhand	100.29	103.29
Karnataka	93.69	97.1
Kerala	79.29	86.85
Ladakh	81.01	93.13
Lakshadweep	116.04	110.65
Madhya Pradesh	86.49	82.62
Maharashtra	97.07	97.53
Manipur	83.62	86.73
Meghalaya	145.47	135.62
Mizoram	125.85	113.68
Nagaland	110.31	113.75
Odisha	76.71	75.25
Puducherry	308.3	310.79
Punjab	89.53	88.22
Rajasthan	82.11	82.09
Sikkim	67.35	63.4
Tamil Nadu	83.28	84.26
Telangana	103.82	108.39
The Dadra And Nagar Haveli And Daman And Diu	53.96	51.32
Tripura	106.61	101.88
Uttarakhand	96.18	87.8
Uttar Pradesh	90.59	96.85
West Bengal	98.07	98.57

Annexure-2.5

State/UT wise distribution of Percentage of four or more ANC in India to total ANC Registration

State/UT	2020-21	21021-22
All India	78.35	81.41
A & N Islands	67.37	65.7
Andhra Pradesh	104.29	104.24
Arunachal Pradesh	29.5	35.68
Assam	80.5	83.22
Bihar	63.6	63.17
Chandigarh	123.5	103.31
Chhattisgarh	94.8	93.28
Delhi	53.87	69.01
Goa	71.5	73.86
Gujarat	83.5	87.62
Haryana	73.67	78.82
Himachal Pradesh	75.4	80.3
Jammu And Kashmir	60.5	83.16
Jharkhand	75.02	75.57
Karnataka	89.6	93.51
Kerala	96.9	90.4
Lakshadweep	106.5	79.39
Madhya Pradesh	80.32	76.85
Maharashtra	95.3	97.16
Manipur	37.1	35.66
Meghalaya	56.1	52.86
Mizoram	58.67	62.57
Nagaland	15.5	18.92
Odisha	84.9	88.88
Puducherry	59.3	84.15
Punjab	77.7	76.18
Rajasthan	61.9	65.17
Sikkim	75.44	74.52
Tamil Nadu	93.2	93.28
Telangana	79.72	80.73
Tripura	65.34	79.51
Uttar Pradesh	77.01	83.03
Uttarakhand	81.8	85.4
West Bengal	76.3	80.75
Ladakh	54.7	54.9
The Dadra and Nagar Haveli and Daman and Diu	88.2	107.02

Annexure-2.6

State/UT wise distribution of Percentage of TT/Td-1 to ANC registration

State/UT	2020-2021	2021-22
All India	71.16	73.11
Andaman & Nicobar Islands	79.38	73.75
Arunachal Pradesh	59.58	60.07
Assam	90.36	92.21
Bihar	51.29	52.26
Chandigarh	73.66	60.64
Chhattisgarh	79.35	80.42
Delhi	39.05	53.76
Goa	46.02	45.60
Gujarat	78.74	78.78
Haryana	72.10	76.33
Himachal Pradesh	71.92	73.65
Jammu And Kashmir	48.85	77.98
Jharkhand	72.08	75.85
Karnataka	80.66	81.32
Kerala	89.00	90.40
Ladakh	70.90	71.63
Lakshadweep	72.44	71.62
Madhya Pradesh	70.98	70.65
Maharashtra	70.32	75.07
Manipur	56.23	55.71
Meghalaya	52.19	51.89
Mizoram	65.63	70.53
Nagaland	50.07	48.73
Odisha	88.08	89.26
Puducherry	22.73	23.26
Punjab	88.04	87.24
Rajasthan	59.47	61.14
Sikkim	87.07	88.25
Tamil Nadu	85.77	86.43
Telangana	83.98	84.23
The Dadra And Nagar Haveli And Daman And Diu	70.65	81.22
Tripura	79.85	85.63
Uttarakhand	81.51	82.02
Uttar Pradesh	69.33	67.91
West Bengal	84.81	86.79

Annexure-2.7

State/UT wise distribution of Percentage of Pregnant women received TT2+ TT Booster to Total ANC Registration

State/UT	2020-2021	2021-2022
All India	86.25	86.56
Andaman & Nicobar Islands	83.14	77.54
Andhra Pradesh	101.8	105.17
Arunachal Pradesh	56.88	59.76
Assam	93.28	93.18
Bihar	83.42	80.3
Chandigarh	79.88	66.81
Chhattisgarh	97.06	95.89
Delhi	36.04	50.25
Goa	48.86	46.19
Gujarat	93.85	95.21
Haryana	89.33	93.97
Himachal Pradesh	91.26	92.66
Jammu And Kashmir	55.72	88.39
Jharkhand	79.55	81.33
Karnataka	101.52	102.73
Kerala	82.97	82.39
Ladakh	78.06	73.11
Lakshadweep	85.33	83.11
Madhya Pradesh	89.16	87.46
Maharashtra	93.65	97.04
Manipur	52.92	52.81
Meghalaya	67.23	65.78
Mizoram	87.46	90.73
Nagaland	40.76	44.4
Odisha	93.77	95.88
Puducherry	25.35	25.91
Punjab	89.04	87.83
Rajasthan	85.9	86.58
Sikkim	90.94	92.22
Tamil Nadu	99.54	99.47
Telangana	89.38	90.73
The Dadra And Nagar Haveli And Daman And Diu	85.65	97.98
Tripura	77.52	85.1
Uttarakhand	92.1	92.1
Uttar Pradesh	81.13	77.58
West Bengal	86.36	88.09

Annexure-2.8

State/UT wise distribution of Percentage of Deworming during Pregnancy to total ANC Registration

State/UT	2020-2021	2021-2022
Gujarat	84.2	86.74
Chhattisgarh	77.34	83.22
Andhra Pradesh	53.11	82.56
Uttarakhand	74.33	80.34
Odisha	69.94	79.88
Karnataka	75.66	78.76
The Dadra And Nagar Haveli And Daman And Diu	80.48	77.76
Himachal Pradesh	72.56	75.43
Tamil Nadu	66.64	74.94
Maharashtra	68.19	74.62
Assam	61.13	74.36
Haryana	67.1	73.27
Madhya Pradesh	70.65	71.68
West Bengal	53.95	68.01
Chandigarh	79.03	65.83
Mizoram	38.41	60.82
Sikkim	51.99	60.39
Rajasthan	53.95	58.55
Andaman & Nicobar Islands	62.52	58.01
Telangana	50.96	55.82
All India	49.35	55.36
Jharkhand	40.22	44.01
Delhi	22.51	35.27
Uttar Pradesh	29.9	35.18
Punjab	34.96	34.23
Goa	36.93	33.76
Meghalaya	29.05	32.8
Bihar	31.14	31.54
Jammu And Kashmir	16.49	31.2
Lakshadweep	23.37	27.87
Puducherry	18.9	18.05
Tripura	7.91	16.93
Arunachal Pradesh	14.27	14.36
Ladakh	13.3	11.1
Nagaland	9.7	10.68
Manipur	4.28	5.36
Kerala	6.29	4.89

Annexure-2.9

State/UT wise distribution of Percentage of Institutional deliveries, Percentage of safe deliveries and Percentage of home deliveries to total reported deliveries

State/UT	% Institutional deliveries to Total Reported Deliveries		% Safe (Institutional +SBA Home) deliveries to Total Reported Deliveries		% Home deliveries to Total Reported Deliveries	
	2020-2021	2021-2022	2020-2021	2021-2022	2020-2021	2021-2022
All India	94.78	95.51	95.74	96.41	5.22	4.49
Andaman & Nicobar Islands	98.49	98.53	99.09	98.74	1.51	1.47
Andhra Pradesh	99.66	99.97	99.87	99.99	0.34	0.03
Arunachal Pradesh	91.28	90.66	95.25	94.97	8.72	9.34
Assam	89.52	91.27	92.75	94.43	10.48	8.73
Bihar	86.15	87.02	88.75	89.8	13.85	12.9
Chandigarh	99.82	99.9	99.83	99.92	0.18	0.1
Chhattisgarh	98.3	98.7	98.97	99.25	1.7	1.3
Delhi	94.62	95.31	94.72	95.31	5.38	4.69
Goa	99.92	99.96	99.93	99.96	0.08	0.04
Gujarat	99.62	99.79	99.89	99.93	0.38	0.21
Haryana	95.55	96.53	95.76	96.99	4.45	3.47
Himachal Pradesh	91.51	92.68	93.14	94.26	8.49	7.32
Jammu And Kashmir	93.41	94.87	93.67	95.2	6.59	5.13
Jharkhand	95.89	96.91	97.87	98.6	4.11	3.09
Karnataka	99.89	99.95	99.94	99.97	0.11	0.05
Kerala	99.86	99.86	99.89	99.89	0.14	0.14
Ladakh	97.21	98.82	99.16	99.35	2.79	1.18
Lakshadweep	100	100	100	100	0	0
Madhya Pradesh	95.68	95.9	96.32	96.52	4.32	4.05
Maharashtra	99.24	99.39	99.49	99.65	0.76	0.61
Manipur	79.9	80.3	92.12	92.25	20.04	19.7
Meghalaya	59.4	57.23	61.35	60.24	40.6	42.77
Mizoram	87.08	87.21	89.37	89.97	12.92	12.79
Nagaland	76.09	78.39	90.39	90.88	23.91	21.61
Odisha	97.31	97.8	98.8	99.16	2.69	2.2
Puducherry	99.97	99.99	99.99	99.99	0.03	0.01
Punjab	98.57	99.02	99.14	99.46	1.43	0.98
Rajasthan	97.9	98.45	98.64	99	2.1	1.55
Sikkim	99.14	99.45	99.51	99.7	0.86	0.55
Tamil Nadu	99.99	99.99	99.99	100	0.01	0.01
Telangana	99.83	100	99.96	100	0.17	0
The Dadra And Nagar Haveli And Daman And Diu	99.72	99.58	99.74	99.63	0.28	0.42
Tripura	92.42	94.52	92.45	94.63	7.58	5.48
Uttarakhand	86.61	88.47	89.85	91.78	13.39	11.53
Uttar Pradesh	89.89	91.21	91.09	92.31	10.11	8.79
West Bengal	98.15	98.75	98.16	98.75	1.85	1.25

Annexure-2.10

State/UT wise distribution of Percentage of SBA attended home deliveries to Total Reported Home Deliveries

State/UT	2020-2021	2021-2022
All India	18.49	20.52
Andaman & Nicobar Islands	39.34	14.55
Andhra Pradesh	62.6	63.36
Arunachal Pradesh	45.5	46.12
Assam	30.82	36.2
Bihar	18.76	21.44
Chandigarh	3.45	15.79
Chhattisgarh	39.48	42.6
Delhi	1.87	0.01
Goa	15.38	0
Gujarat	71.27	68.97
Haryana	4.64	13.06
Himachal Pradesh	19.12	21.51
Jammu And Kashmir	4.02	6.45
Jharkhand	48.25	54.52
Karnataka	45.48	51.54
Kerala	17.88	19.28
Ladakh	69.9	45.24
Lakshadweep	0	0
Madhya Pradesh	14.77	13.99
Maharashtra	33.09	42.43
Manipur	60.67	60.64
Meghalaya	4.8	7.03
Mizoram	17.75	21.6
Nagaland	59.79	57.78
Odisha	55.53	61.58
Puducherry	71.43	25
Punjab	39.69	44.57
Rajasthan	35.55	35.44
Sikkim	42.86	45.95
Tamil Nadu	9.8	23.4
Telangana	77.25	52
The Dadra And Nagar Haveli And Daman And Diu	6.9	11.36
Tripura	0.4	1.93
Uttarakhand	24.18	28.73
Uttar Pradesh	11.89	12.53
West Bengal	0.35	0.28

Annexure-2.11

State/UT wise distribution of Percentage of C-Section Deliveries

State/UT	% C-section deliveries (Public + Pvt.) to reported institutional (Public + Pvt.) deliveries		% C-sections conducted at public facilities to Deliveries conducted at public facilities		% C-sections conducted at Private facilities to Deliveries conducted at private facilities	
	2020-2021	2021-2022	2020-2021	2021-2022	2020-2021	2021-2022
All India	21.3	23.29	13.96	15.48	35.95	37.95
Andaman & Nicobar Islands	30.94	36.23	27.57	27.01	95.45	95.56
Andhra Pradesh	41.81	42.15	33.03	33.39	47.69	47.52
Arunachal Pradesh	22.84	23.04	17.37	18.65	50.96	54.48
Assam	24.31	26.34	15.01	17.51	66.23	64.67
Bihar	5.96	5.66	1.56	1.86	34.35	28.41
Chandigarh	33.69	36.56	33.69	36.56	0	0
Chhattisgarh	16.31	17.82	6.67	7.27	47.73	50.81
Delhi	32.42	34.83	26.72	27.93	59.47	61.61
Goa	45.61	46.57	35	35.33	58.9	61.86
Gujarat	18.74	18.41	13.32	14.1	21.68	20.62
Haryana	18.95	21.34	13.38	14.16	25.32	29.07
Himachal Pradesh	25.57	26.91	18.94	20.36	50.84	50.54
Jammu And Kashmir	46.45	48.97	40.77	43.45	89.43	91.74
Jharkhand	8.18	9.13	3.88	4.72	20.22	20.09
Karnataka	34.13	35.19	27.31	29.41	44.04	44.11
Kerala	42.21	42.41	42.61	42.89	42.02	42.19
Ladakh	22.24	24.39	22.24	24.39	0	0
Lakshadweep	43.52	47.29	43.52	47.29	0	0
Madhya Pradesh	11.4	12.97	7.6	8.63	39.86	45.39
Maharashtra	24.18	27.81	20.86	23.83	26.54	30.96
Manipur	36.74	39.1	25.05	29.21	60.5	62.19
Meghalaya	16.27	17.67	7.91	9.64	49.68	52.31
Mizoram	18.98	19.17	12.48	14.32	38.83	38.29
Nagaland	19.23	21.15	8.64	11	38.08	42.83
Odisha	23.72	26.89	14.77	16.88	64.67	74.62
Puducherry	39.06	36.83	34.15	31.38	51.62	52.91
Punjab	41.77	43.42	30.04	30.44	51.93	53.53
Rajasthan	11.9	13.43	9.56	10.79	18.98	21.71
Sikkim	40.97	48.67	36.35	43.3	54.85	70.62
Tamil Nadu	44.09	46.94	40.83	40.86	48.85	55.84
Telangana	55.33	54.09	46.3	47.13	65.34	61.08
The Dadra And Nagar Haveli And Daman And Diu	36.85	38.45	34.04	36.02	51.88	52.33
Tripura	28.08	28.76	18.53	21.63	93.72	93.03
Uttarakhand	15.61	16.86	12.74	14.99	20.22	20.34
Uttar Pradesh	9.09	9.51	3.87	4.7	22.19	20.11
West Bengal	34.81	42.17	24	26.01	78.69	83.88

CHAPTER 3

CHILD HEALTH

In India, an estimated **26 millions** of children are born every year. Children **0-6 years** age group accounts 13% (as per Census 2011) of the total population of country and nearly one fifth of the world's annual childbirths (as per UNICEF). Around **3.5 million** babies in India are born too early and more than one million new-borns are discharged each year from Special New-born Care Units (SNCUs). The newborn delivered early and those who are admitted in SNCU are at high risk and need focused care.

The Child Health programme under the National Health Mission (NHM) comprehensively integrates interventions that improve child survival and addresses factors contributing to infant and under-five mortality.

Critical services are made available through community outreach and through health facilities at various levels (primary, first referral units, tertiary health care facilities). The newborn and child health are now the two key pillars of the Reproductive, maternal, newborn, child and adolescent health (RMNCH+A) strategic approach, 2013.

Around 40% percent of neonatal deaths happen during delivery or first 24 hours of birth, which are preventable if skilled health care is provided and delivery conducted at institution. In addition, early initiation and exclusive breast-feeding aids in survival rates of a new born. Child survival is interlinked with the health of the mother

Child health goals under SDG (Sustainable Development Goals) Goal 3.2: By 2030, end preventable deaths of newborn and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1000 live births and under-5 mortality to at least as low as 25 per 1000 live births.

Table 3.1 Child Health Goals under NHP-2017 and SDG-2030

Child Health Indicator	Current Status (SRS)	NHP 2017	SDG 2030
Neonatal Mortality rate	20, SRS 2020	16 BY 2025	=<12
Infant Mortality Rate	28, SRS 2020	28 BY 2019	----
Under 5 Mortality Rate	32, SRS 2020	23 BY 2025	< 25

Source: Sample Registration System 2020

3.1 Child Health Indicators

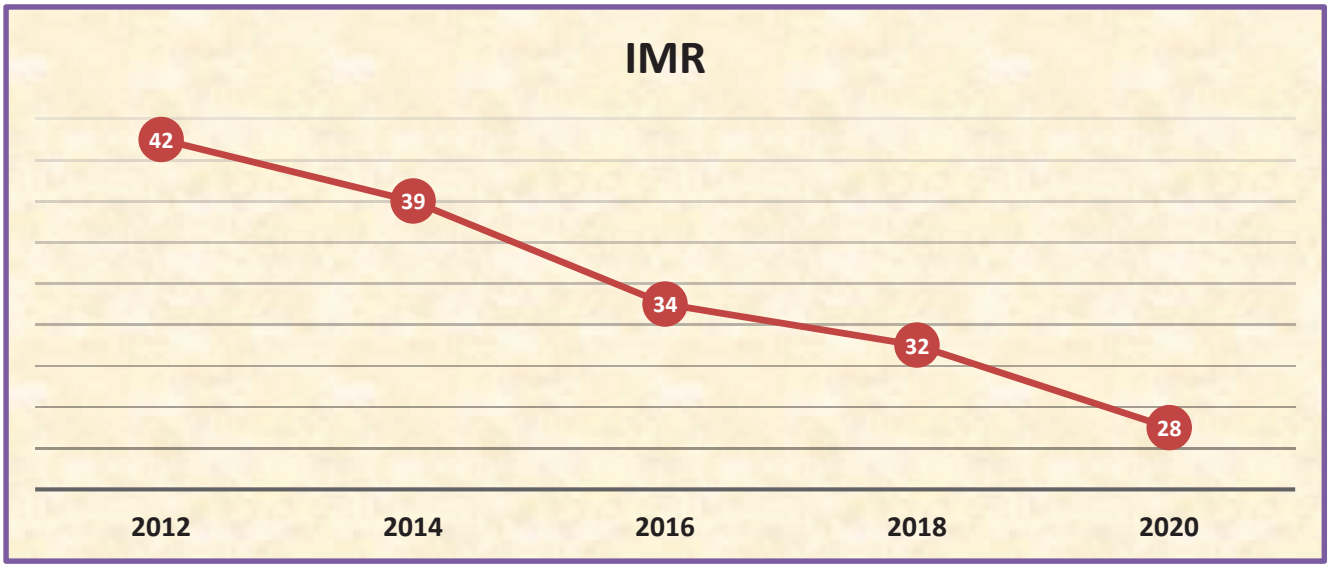
a. Infant Mortality Rate:

Infant mortality represents an important component of under-five mortality. Like under-five mortality, infant mortality rates measure child survival. They reflect the social, economic and environmental conditions in which children (and others in society) live, including their health care. Mortality rates are often used to identify vulnerable populations. In addition, infant mortality rate is an MDG indicator.

The infant mortality rate is the number of infant deaths for every 1,000 live births. It gives us key information about maternal and infant health hence infant mortality rate is an important marker of the overall health of a society.

As per the **Sample Registration System 2020**, the IMR at all India level is 28 per 1000 live births in 2020. The trend of Infant mortality at all India level is provided in Figure 3.1, which shows around **33%** decline in Infant Mortality Rate is observed in India during 2012 to 2020.

Figure 3.1: Trend of Infant Mortality Rate from 2012 to 2020 at All India Level



Source: Sample Registration System

b. Neo-natal Mortality Rate:

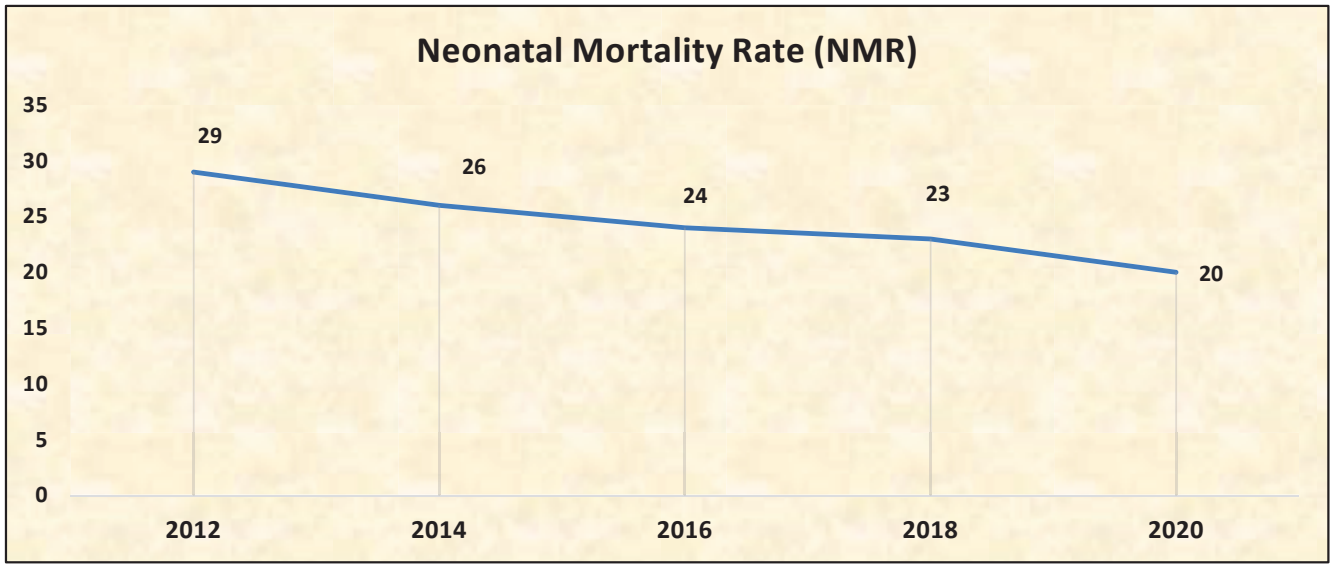
Mortality during the neonatal period accounts for a large proportion of child deaths, and is considered a useful indicator of maternal and newborn neonatal health and care. The probability that a child born in a specific year or period will die during the first 28 completed days of life if subject to age-specific mortality rates of that period, expressed per 1000 live births. Neonatal deaths (deaths among live births during the first 28 completed days of life) may be subdivided into early neonatal deaths, occurring during the first seven days of life, and

late neonatal deaths, occurring after the seventh day but before the 28th completed day of life

***Neo-natal Mortality Rate (NMR) is defined as a number of deaths of children during the period of 0-28 days per 1000 live births*.** NMR stands 20 per 1000 live births in India in 2020 as per **Sample Registration System 2020.** Around 31% decline in Neo-natal Mortality Rate has been observed in India during 2012 to 2020.

The trend of Neo-natal Mortality Rate at all India level is provided in Figure 3.2

Figure 3.2: Trend of Neo-natal Mortality Rate 2012 to 2020 at All India Level



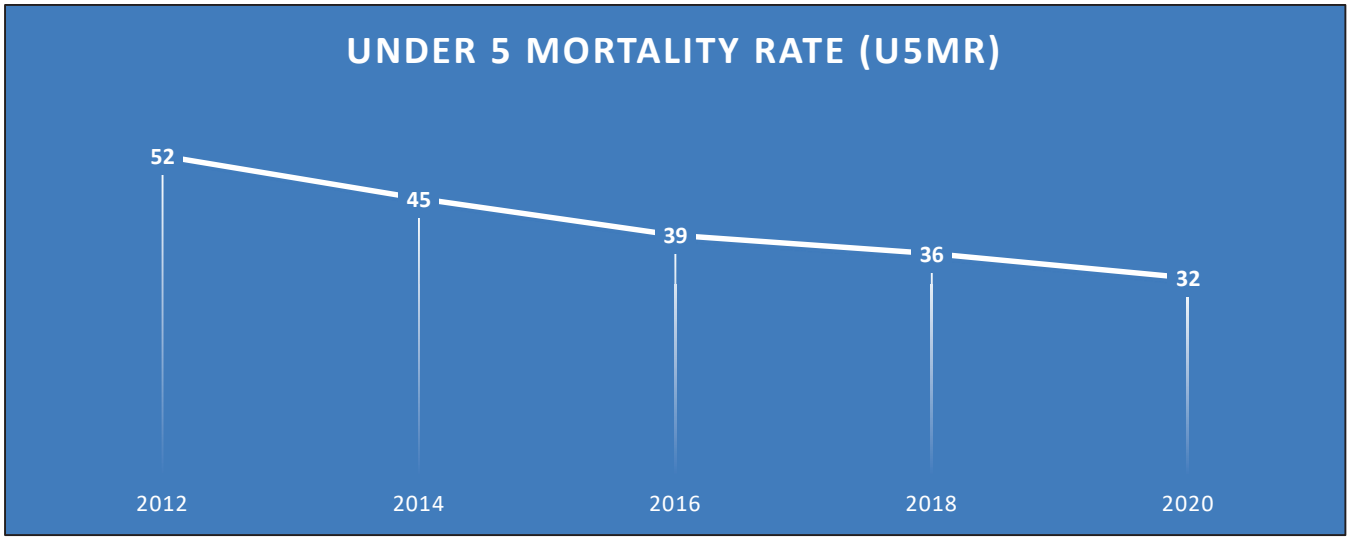
Source: Sample Registration System

c. Under-five Mortality Rate

Similar to the infant mortality rate, the mortality rate of children aged under 5 years is a baseline indicator of how a country is progressing towards assuring children's rights - in particular, their rights to life, health care services, nutrition, water, social security and protection. Under-5 mortality rate is a leading indicator of the level of child health and overall development of country.

Under-five mortality is defined number of deaths of children in the age 0-5 years per 1000 live births. As per the **Sample Registration System 2020**, the under five-mortality rate is 32 per 1000 live births in 2020. Around 39% decline in Under-five mortality Rate observed in India during 2012 to 2020.The trend of Under-five Mortality Rate at all India level is provided in Figure 3.3.

Figure 3.3: Trend of Under-five Mortality Rate 2012 to 2020 at All India Level



Source: Sample Registration System

---

*Under **National Health Mission (NHM)**, the programme of **home based and facility based** care for the newborn was launched to complete the continuum of care from facility to community.*

Health Management Information System (HMIS) collects data on around **100** data elements related to **Child health** only. They are covered under various programs sub components like *Pregnancy Outcomes, Home Based New Born Care (HBNC), Sick Newborn Care Units (SNCUs), Rashtriya Bal Swasthya Karyakarm (RBSK), Nutrition Rehabilitation Centre (NRC), Janani Shishu Suraksha Karyakram (JSSK), Weekly Iron folic acid (WIFS) Junior, Childhood Diseases and Death*.

3.2 Home Based New Born care (HBNC): For reduction of neonatal mortality, Home Based New Born Care implemented since 2011. Home Based Newborn Care scheme for the reduction of neonatal mortality, has incentivized Accredited Social Health Activist (ASHA) for making visits to all newborns and their mothers according to specified schedule up to 42 days of life. ASHA records the weight, ensuring immunization, safety of mother & newborn and registration. The information is recorded in MCP cards & ASHA visit form.

Also, provision for extra care to all newborn discharged after treatment of sickness from Special Newborn Care Units (SCNU) and those who are born as preterm or low birth weight babies is being ensured through structured home visits follow up by ASHA till 1 year of life. In case of SNCU discharged newborns, the day of discharge is day one. The HBNC schedule (as per revised guidelines 2014) is as follow:

6 HBNC- Six visits in case of Institutional Deliveries (Days 3, 7, 14, 21, 28 & 42)

7 HBNC- Seven visits in case of Institutional Deliveries (Days 1, 3, 7, 14, 21, 28 & 42)

"During the HBNC visits", services offered like essential care of new born, examination of the new born, early recognition of danger signs, stabilization and referral, Counselling of the mother for breast feeding, warmth, care of the baby, Immunization, post-partum care and use of family planning methods. Figure 3.4 representing States/UTs, which have shown an increase in total HBNC coverage during 2021-22 when compared to 2020-21.

Total HBNC coverage: All INDIA

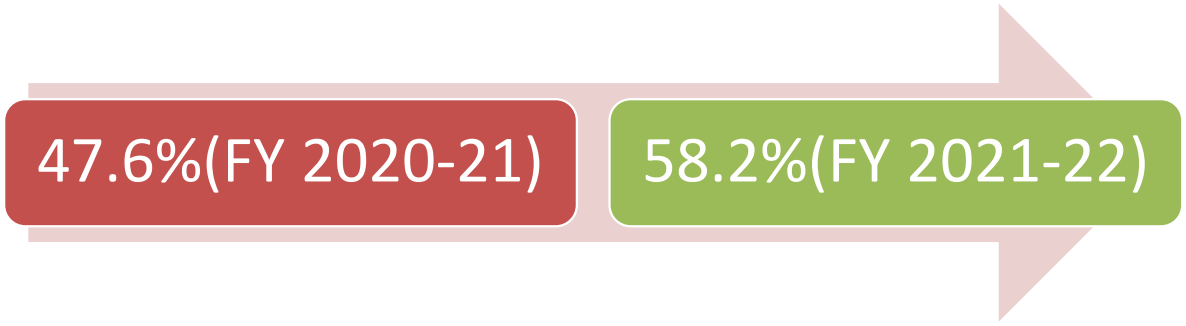
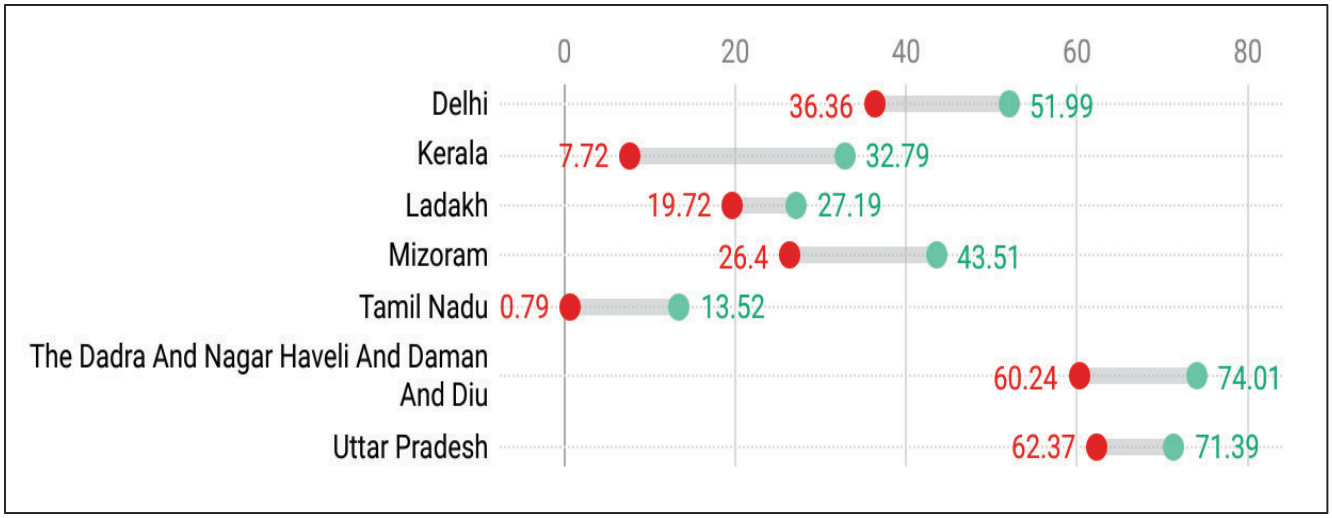
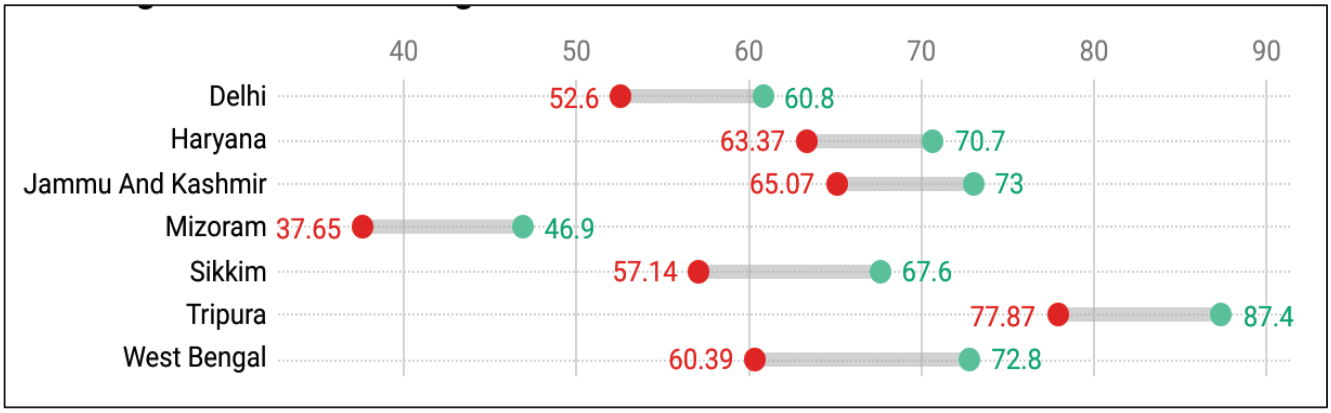


Figure 3.4. Percentage of Total HBNC coverage to total Deliveries in States/UTs showing an increase during 2021-22 from 2020-21



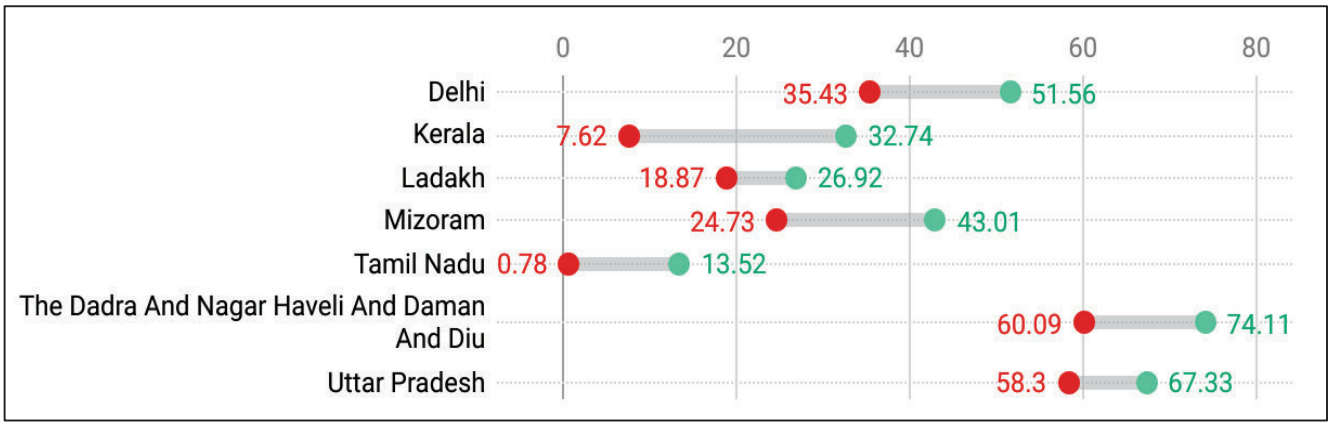
In case of **home delivery**, every newborn require care at home and identifying danger signs. Therefore, home based care and management of illnesses is done through HBNC to all the home deliveries, which will also help in reducing neo-natal mortality. Various States/UTs have shown an increase (FY 2021-22) in seven HBNC for home deliveries from previous year (FY 2020-21) presented in Figure 3.5. In addition, 6% increase is shown at All India level.

Figure 3.5. Percentage of 7 HBNC coverage to total home deliveries in States/UTs showing an increase during 2021-22 from 2021-21



In **Institutional deliveries** where discharge happens after 48 hrs as per guidelines and women returns home and there are still chances of neonatal deaths. Therefore, HBNC is again required for the remaining critical period. There are States/UTs presented in the Figure 3.6 where an increase in HBNC coverage in case of Institutional deliveries is observed. At All India level 6% increase is seen in 2021-22 as per the reported data on HMIS when compared to previous year (FY 2020-21).

Figure 3.6. Percentage of 6 HBNC coverage to total Institutional deliveries in States/UTs showing an increase during 2021-22 from 2021-21



States/UTs wise total number of Home & Institutional Deliveries followed by 7 & 6 HBNC Visits respectively as reported in HMIS 2021-22 is provided at **Annexure-3.1**

3.3 Facility Based New Born Care (FBNC)

Facility Based Newborn Care (FBNC) programme is one of the key initiatives launched by the Government of India under the National Rural Health Mission and RMNCH+A Strategic programme to improve the status of newborn health in the country. However, HBNC increased the admission of sick new born but care of newborn was also required. Therefore, **Ministry**

of Health & Family Welfare, Government of India (MoHFW, GoI) established Facility Based New-born Care services in health care facilities at different levels so that facility based intervention aids to drop **Neonatal Mortality rate (NMR).**

The various components of FBNC are following:

a. **Newborn Care Corners (NBCCs)** are established at all delivery points to provide essential newborn care. It is a dedicated space within the delivery room and located in every Labor Rooms (LR) and maternity Operation Theatres (OTs) and aims to provide immediate care to all newborns who require basic resuscitation and thermal care

b. **Newborn Stabilization Units (NBSUs)** are being established at all Community Health Centers/First Referral Units for management of selected newborn conditions and to stabilize serious and sick newborns before referral to higher centers.

c. **Special Newborn Care Units (SNCUs)** are established at district hospitals and sub district hospitals with annual delivery load more than 3000 to provide care for sick newborns, that is, all type of neonatal care except assisted ventilation and major surgeries.

3.3.1 Newborn Stabilization Units (NBSUs): The second level of care after NBCC is known as Newborn Stabilization Units (NBSU), which is located at the block level facilities to manage newborns who are sick but stable.

NBSUs are responsible to stabilize a sick baby before referring to a higher care center and being located at block level brings care nearer to homes/villages of sick babies. NBSUs deliver first level of care under the FBNC framework, would manage low birth weight infants ≥1800 grams - provide phototherapy, thermal care using radiant warmer and feeding assistance as needed.

As per HMIS data of 2020-21 & 2021-22, at all India level the –percentage of NBSU admission out of total live births reported is **3 percent**.

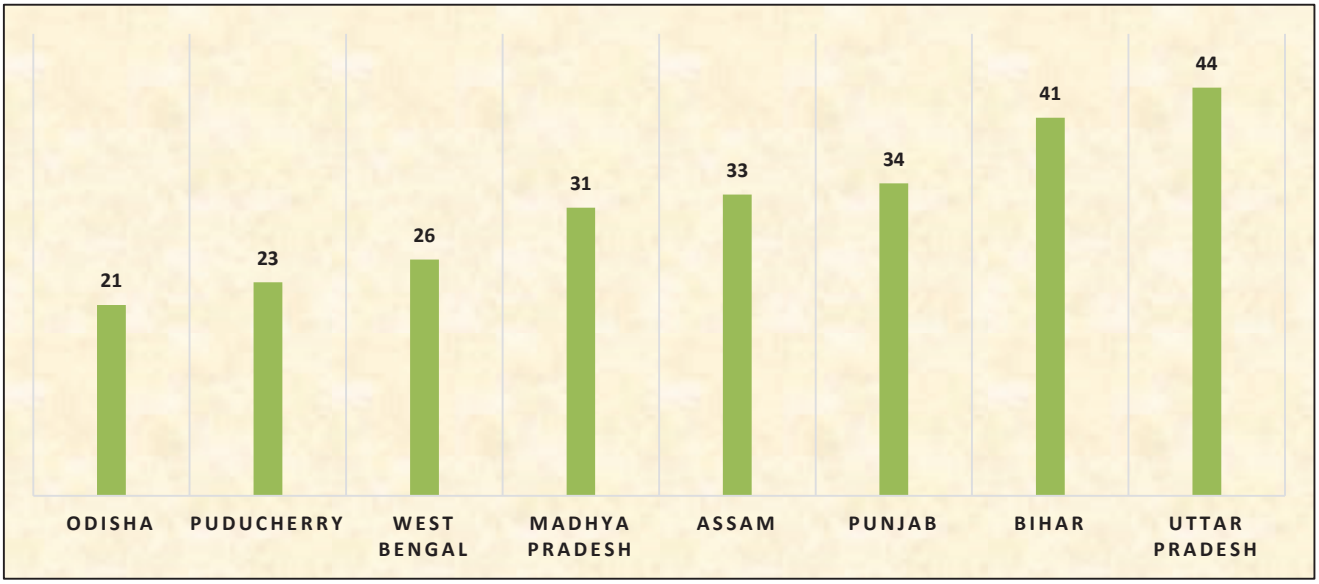
States/UTs wise percentage distribution of **NBSU admissions to total live births** is represented in Table 3.2.

Table 3.2 Percentage of NBSU Admissions to total Live Births in States/UTs during 2021-22

States Reporting =<3% NBSU admissions i.e. All India Average	Meghalaya, Maharashtra, WB, MP, Punjab, Ladakh, Arunachal Pradesh, Assam, Odisha, Puducherry, Sikkim, Jharkhand, UP, Manipur, Bihar, Haryana
States Reporting>3 & <10% NBSU admissions	HP, AP, Mizoram, Karnataka, Telanagana, Delhi, Rajasthan, J & K, Tripura, Uttarakhand, Chandigarh, Chattisgarh, TN, Goa, Gujarat
States Reporting >=10% NBSU admissions	Andaman & Nicobar Islands, Lakhadweep, DNH &Daman and Diu, Nagaland, Kerala

As per reported data, **NBSU admissions** against the reported pre-term babies in States/UTs reported in HMIS in 2021-22 shows that few of the States/UTs reported less than **45 percentage** of admissions when compared to pre-term live births. The representation is given in the **figure.3.7**.

Figure 3.7 State/UT- wise percentage NBSU Admission out of total pre-term new-borns 2021-22

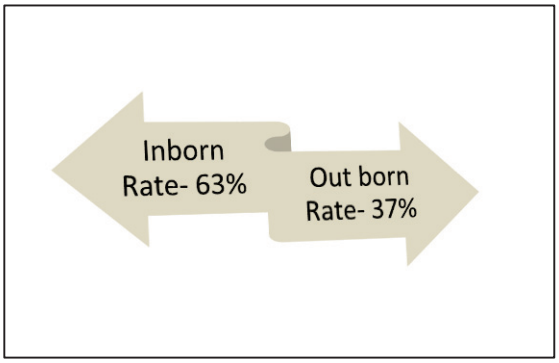


States/UTs wise total live births, number of preterm newborns & NBSU admissions as reported in HMIS 2021-22 is provided at **Annexure 3.2**

3.3.2 Special Newborn Care Unit (SNCU):

The third level of care, the Special Newborn Care Units (SNCUs) located in district hospitals, Sub district Hospitals and tertiary care hospitals, targets the **Very Low Birth Weight (VLBW)** newborns below 1800 grams and/or those suffering from other serious conditions. SNCUs are set up to improve the new born health within first week of their survival which is considered to be the most crucial period of newborns life. Approximately **15%** of newborns require facility based care, thus under the FBNC program, Special Newborn Care Units (SNCUs).

Major admission criterion except weight, are Perinatal asphyxia, Apnea or gasping, Refusal to feed, Respiratory distress, Severe jaundice, Hypothermia, Central cyanosis, Shock, Coma, convulsion or encephalopathy etc.

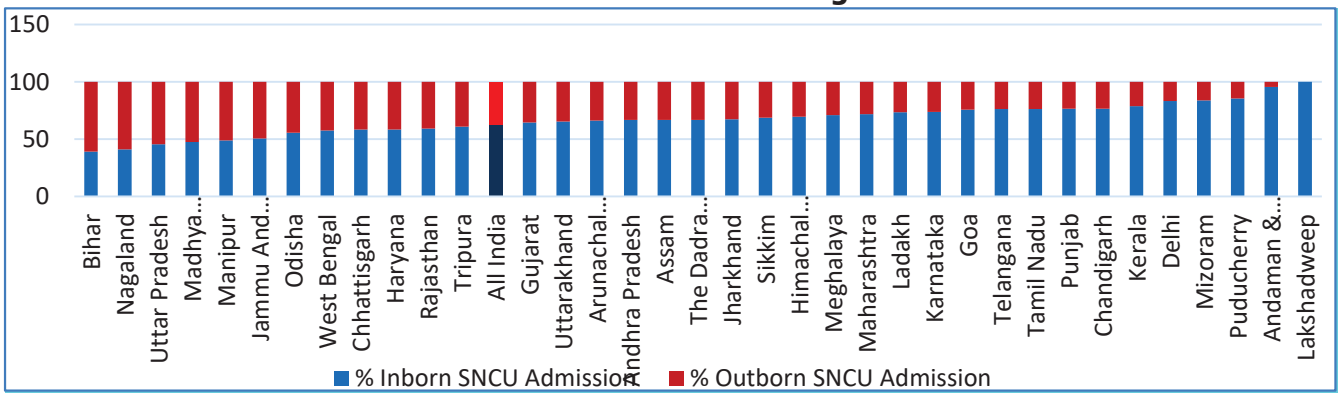


SNCU is dedicated unit in labor room proposed to offer special care for sick newborns, which provides all essential neo-natal care except for assisted ventilation and major surgeries. Maximum of the deaths have been reported essentially in the first week of life thus for plummeting on IMR and under-5 mortality rates, it is imperative to cut down NMR indispensably during first week of life.

a. Admissions & Mortality in SNCUs

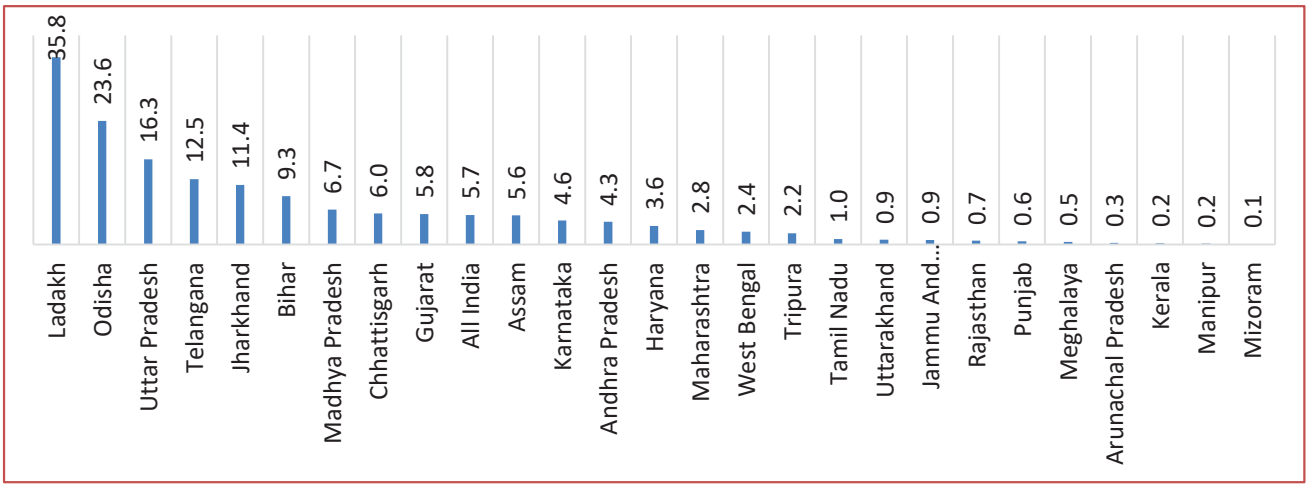
During the year **2021-22**, there were a total of **12,55,875** admissions reported from the SNCUs out of which **89,770** babies died giving an annual mortality rate in SNCU of **7.14%.** States/UTs wise distribution of the Inborn & Out born admission rate in the SNCUs (out of the total SNCU admissions) is represented in Figure 3.8 where variations in different States/UTs can be seen in the data reported on HMIS for the FY 2021-22.

Figure 3.8 State/UT wise percentage of Inborn & Out born SNCU Admissions during 2021-22



One of the key components of the National Health Mission is to provide every village in the country with a trained female community health worker- an **ASHA (Accredited Social Health Activist)**. An ASHA is a key pillar of NHM who works at the community level to provide the outreach health care services and motivate the beneficiaries to avail the health care services in the nearby facilities. Figure 3.9 shows the States/UTs wise percentage of newborns admission in SNCU referred by ASHA reported in HMIS during 2021-22. However, various States/UTs (Himachal Pradesh, Delhi, Andaman & Nicobar Islands, Chandigarh, Goa, Lakshadweep, Nagaland, Puducherry, Sikkim, The Dadra and Nagar Haveli and Daman and Diu) reported nil data.

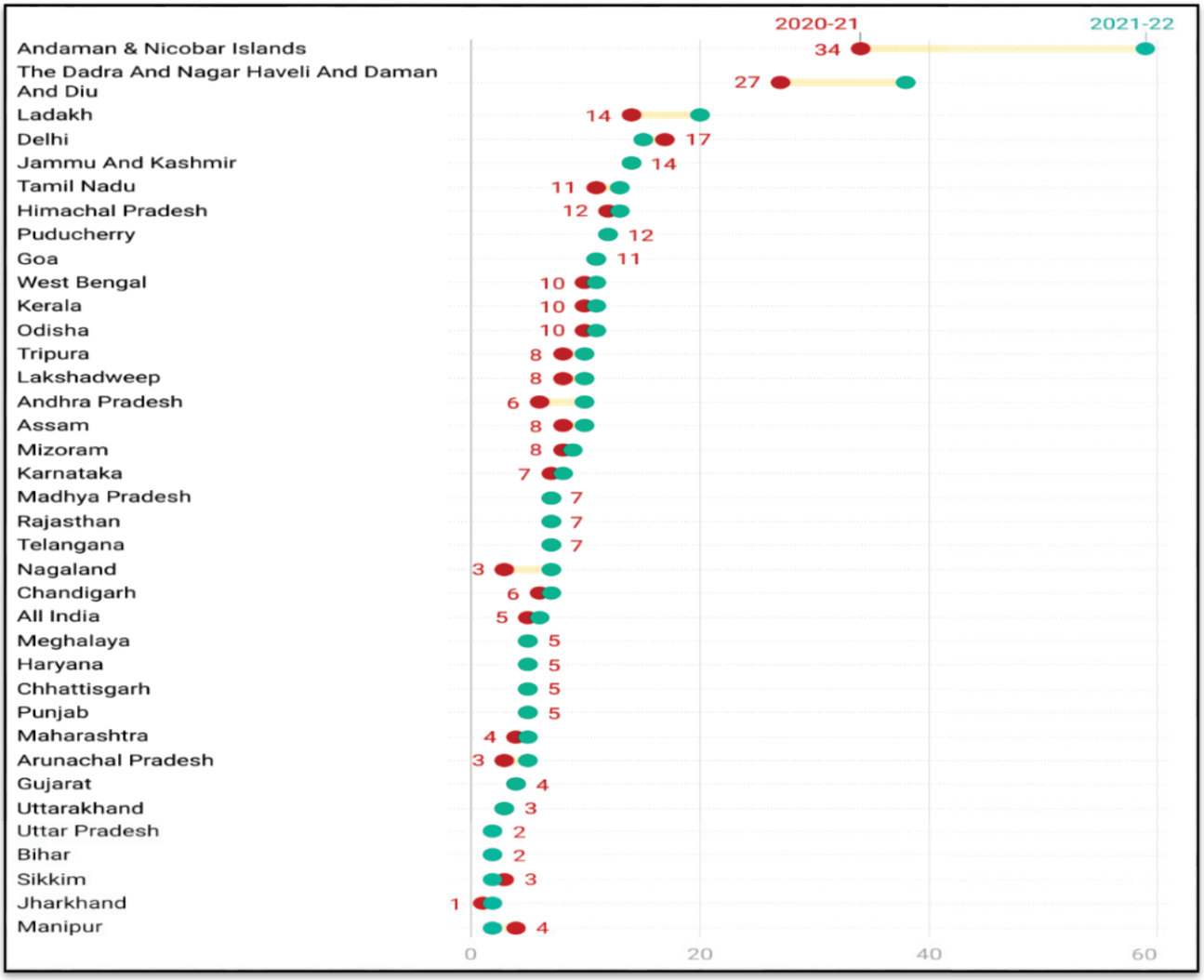
Figure 3.9 States/UTs wise percentage of newborns admission in SNCU referred by ASHA reported in HMIS during 2021-22



District level Newborn Care services should be planned based on the target population and need, and strengthening of the NBCCs and NBSUs should be done simultaneously to ensure referral linkages for optimal utilization of the SNCUs.

SNCU admissions to total live births reported in HMIS when compared during 2020-21 & 2021-22, it can be seen that 19 States/UTs are showing an increase in admissions to previous year (Andaman & Nicobar Island, The Dadra And Nagar Haveli And Daman And Diu, Ladakh, HP, Tamil Nadu, WB, Kerala, Odisha, Tripura, Lakshadweep, Andhra Pradesh, Assam, Mizoram, Karnataka, MP, Nagaland, Chandigarh, Maharashtra & Arunachal Pradesh). While Delhi, Sikkim and Manipur are showing decline in the admission rate. However, 13 States/UTs have reported stable performance during both the years, J & K, Puducherry, Goa, MP, Rajasthan, Telangana, Meghalaya, Haryana, Chhattisgarh, Punjab, Gujarat, Jharkhand, UP & Bihar.

Figure 3.10 States/UTs wise percentage SNCU admissions to total live births reported compared for 2020-21 & 2021-22



Total mortality reported in SNCU is **7%** to total SNCU admissions. However, the neonatal deaths reported on HMIS are **57%** (out of total infant deaths) to total livebirths reported by States/UTs.

Despite low SNCU mortality, neonatal deaths (age-wise) reported out of total infant deaths reported are more than **50%** (in infant deaths) to live births reported shows that it is imperative to cut down NMR indispensably during first week of life. As per data, 5% of total infants are admitted in SNCU to total live births reported during 2021-22.

Table 3.3 shows States/UTs-wise deaths in the SNCU to the total admissions happened during 2021-22. States/UTs, which are showing the maximum percentage of deaths (more than

10%) are **Chhattisgarh, Bihar and Madhya Pradesh** followed by **Gujarat, Manipur, Mizoram, Tripura and West Bengal** where deaths are reported above 8 percent.

Table 3.3 State/UTs wise reported deaths in SNCU admissions during 2021-22

States/UTs	% Deaths from SNCU admissions
All India	7.1
Andaman & Nicobar Islands	1.6
Andhra Pradesh	4.4
Arunachal Pradesh	5.5
Assam	7.7
Bihar	12.8
Chandigarh	1.3
Chhattisgarh	13.2
Delhi	5.2
Goa	4.0
Gujarat	9.7
Haryana	2.2
Himachal Pradesh	4.0
Jammu And Kashmir	5.1
Jharkhand	5.3
Karnataka	7.1
Kerala	1.4
Ladakh	5.1
Lakshadweep	0.0
Madhya Pradesh	11.3
Maharashtra	7.0
Manipur	8.1
Meghalaya	6.1
Mizoram	9.8
Nagaland	7.7
Odisha	7.8
Puducherry	7.4
Punjab	2.3
Rajasthan	7.0
Sikkim	0.0
Tamil Nadu	5.7
Telangana	4.5
The Dadra And Nagar Haveli And Daman And Diu	3.1
Tripura	8.3
Uttarakhand	7.9
Uttar Pradesh	6.1
West Bengal	9.6

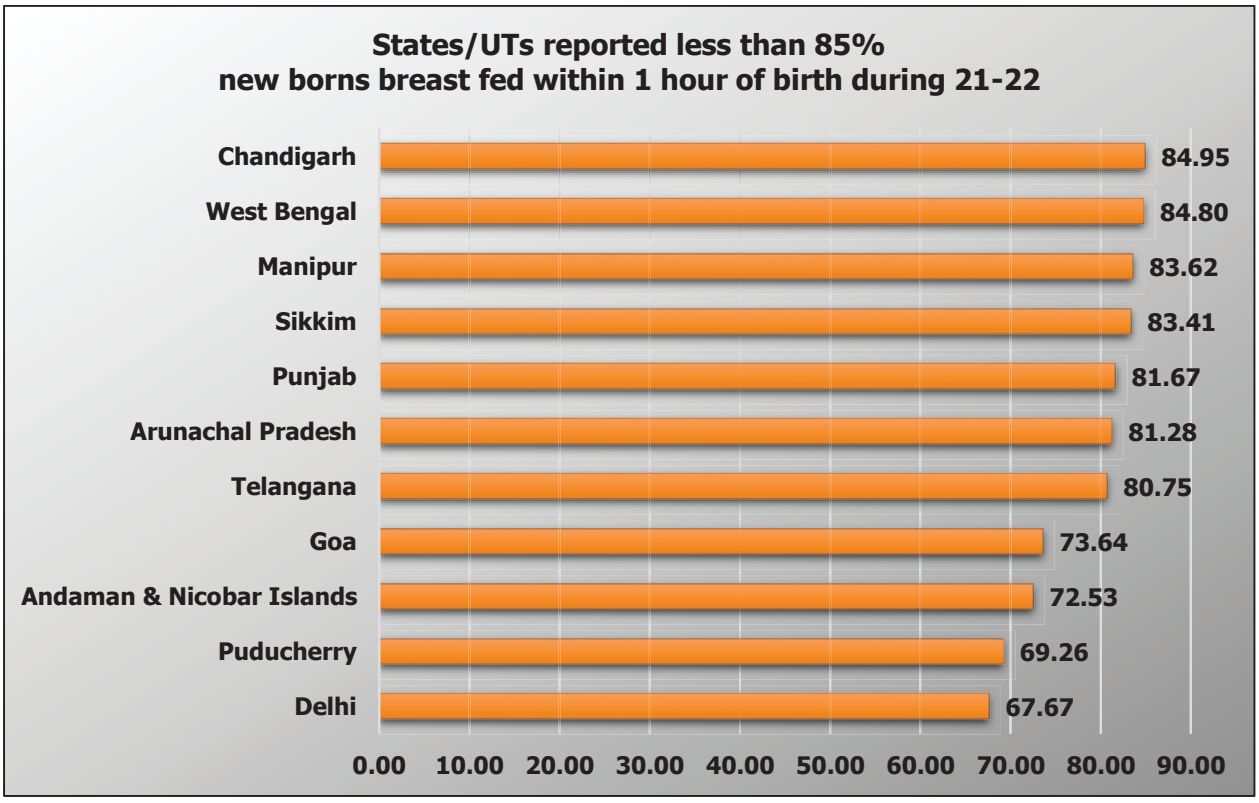
States/UTs wise total live births, Total admission SNCU, SNCU Admissions - referred by ASHA & SNCU deaths as reported in HMIS 2021-22 is provided at **Annexure 3.3**

3.4 Neo Natal and Infant Health:

3.4.1 Early Initiation of Breast feeding: Whether delivery takes place in an institution or at home initiating breastfeeding in the first hour of life where the newborn is significantly more likely to survive. The practice of early initiation can decrease the newborn mortality and morbidity, which should be an integral part of safe delivery procedure. Children who are exclusively breastfed are less likely to die from life threatening diseases.

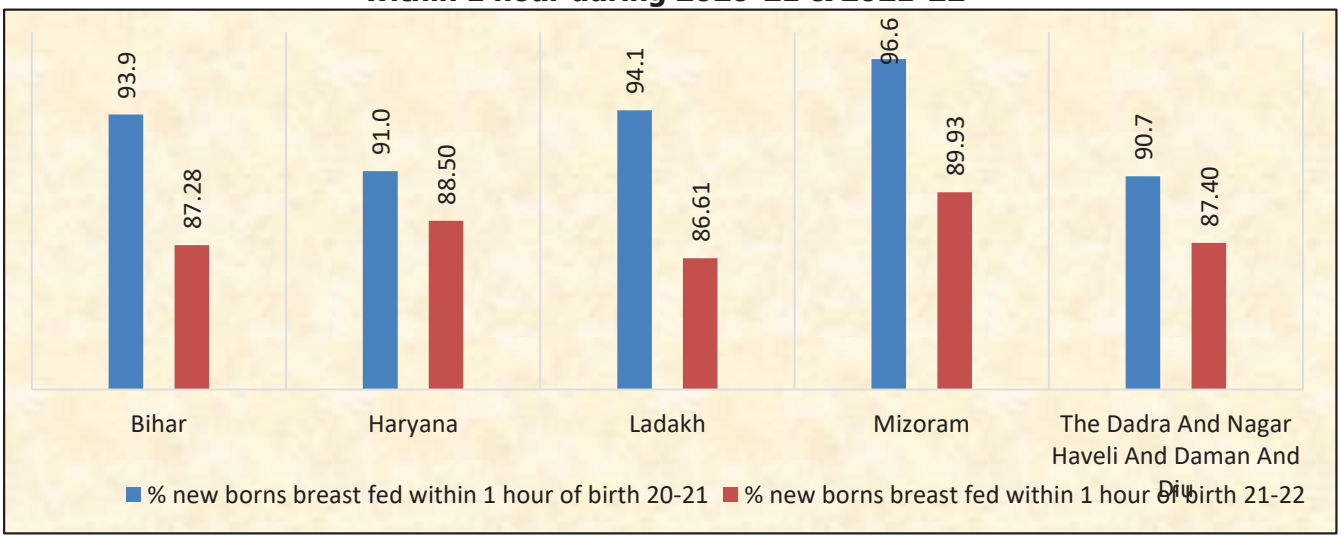
In FY 2020-21 and FY 21-22 percentage of new born breast fed within 1 hr of delivery is more than 90% at All India Level including most of the States/UTs. However, few of the States/UTs have still shown percentages less than 85%, which is presented in figure 3.11.

Figure 3.11 States/UTs wise new borns breast fed within 1 hour of birth during 21-22 (reported less than 85%)



In addition to this, there are five States/UTs, which have shown decline in percentage of breast-feeding in FY 2021-22 in comparison to the 2020-21. In FY 2020-21, these States/UTs reported more than 90% of initiation of breastfeeding within 1 hr of delivery. However, in FY 2021-22 the States/UTs as shown in the figure, percentage declined below 90% presented in figure.

Figure 3.12 States/UTs showing decline in breastfed within 1 hour during 2020-21 & 2021-22



3.4.2 Low Birth Weight Infant (<2.5 Kg)

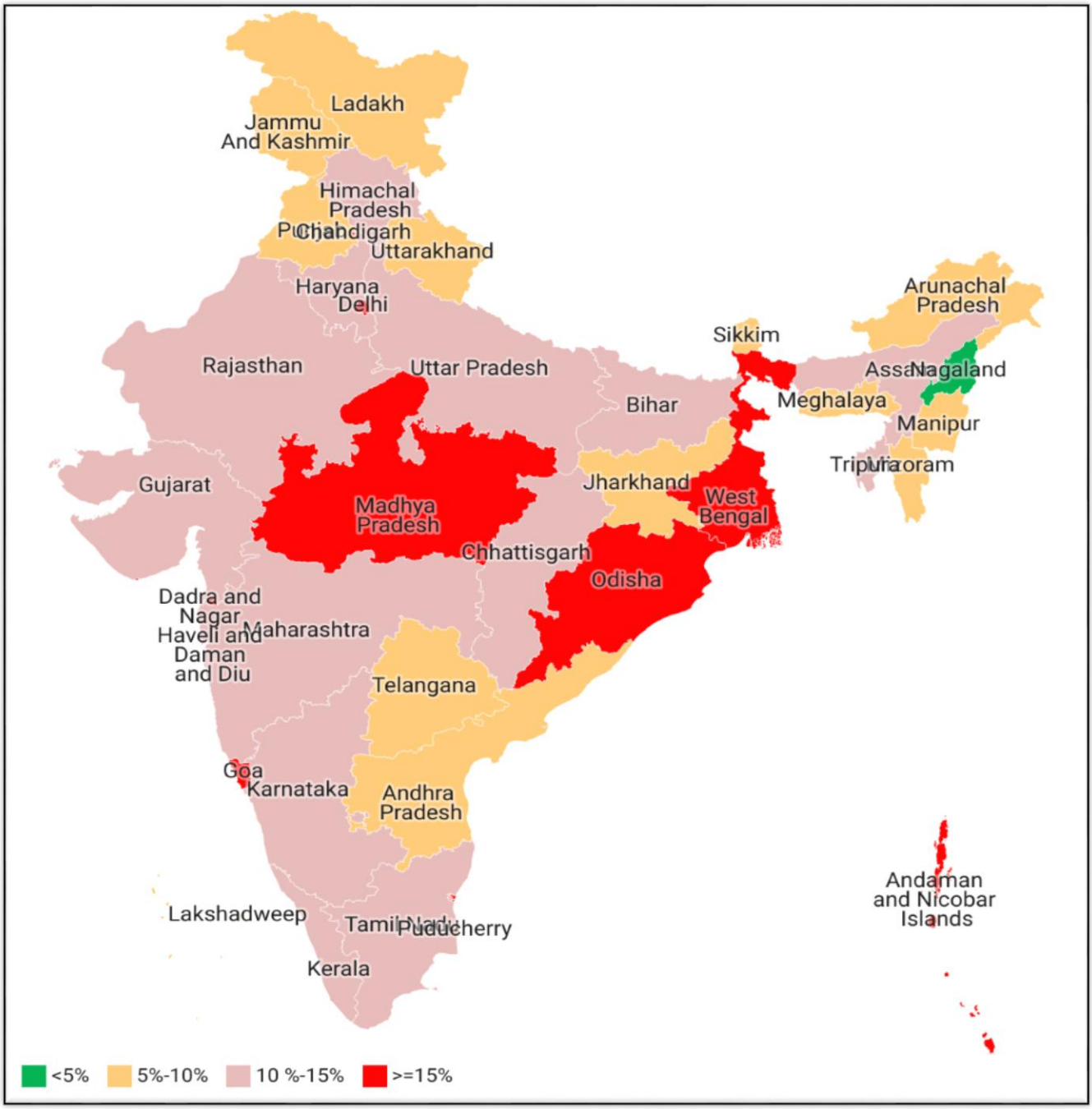
The weight of the newborn depends on the health of the mother during the pregnancy period. *A birth is considered as of low birth weight when the weight of the infant at birth is less than 2500 g (WHO).* Born with a low weight may elevate subsequent adverse health consequence for the infant. The immediate consequence of low birth weight is infant mortality, particularly in the first month of life. Some low-birthweight babies are healthy, but others have serious health problems that need treatment. Premature birth (before 37 weeks of pregnancy) and fetal growth restriction are the most common causes of low birthweight.

Women who went for more than four ANC visit has lesser chance of having low birth weight babies. The ANC visit for the women implies that they are being provided with necessary care during pregnancy, thus reducing chances of adverse pregnancy outcomes.

In India, 12.49 percent infants were found to be of low weight against those infants weighed at birth. However, State/UT wise representation on the geographical map is represented in figure 3.13 in the four ranges as provided below:

1. < 5% Low birth weight infants
2. >=5 to <10% Low birth weight infants
3. >=10 to <15% Low birth weight infants
4. >=15% Low birth weight infants

Figure 3.13 States/UTs wise Low Birth Weight Infants (<2.5 kg) during FY 2021-22



States/UTs wise total live births, Total New born weighed at birth, Newborns having weight less than 2.5 kg and newborns breast fed within 1 hour of birth as reported in HMIS 2021-22 is provided at **Annexure 3.4.**

3.4.3 Pre-term (High Risk) babies

Preterm birth (premature birth) is a significant public health problem across the world because of associated neonatal (first 28 days of life) mortality and short- and long-term morbidity and disability in later life. World Health Organization (WHO) defines preterm as babies born alive before 37 completed weeks of gestation or fewer than 259 days of gestation since the first day of a woman's last menstrual period (LMP).

In India, out of 27 million babies born every year (2010 data), 3.5 million babies born were premature. Newborn deaths (those in the first month of life) account for 40 percent of all deaths among children under five years of age. Preterm birth is the world's number one cause of newborn deaths.

More than three-quarters of preterm babies can be saved with inexpensive care such as essential care during child birth, antenatal steroid injections and postnatal care like kangaroo mother and basic care for infections and breathing difficulties.

Identification of risk factors in women with improved care before, between and during pregnancies; better access to contraceptives and increased empowerment/ education can further decrease the preterm birth rate (the number of preterm births divided by the number of live births).

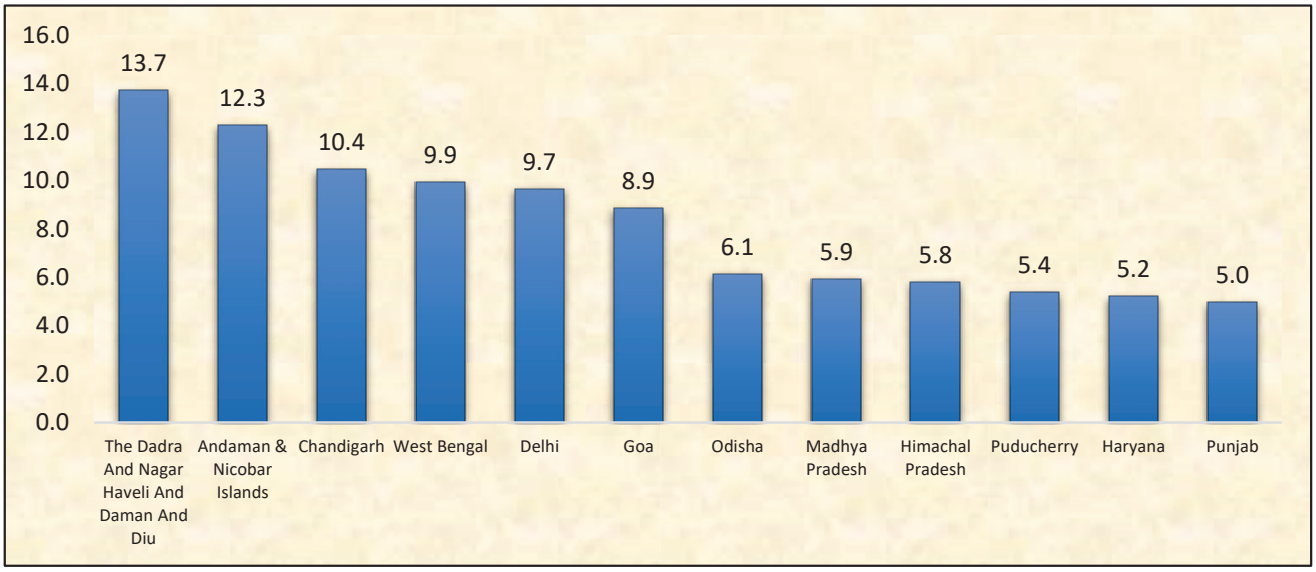
Preterm newborns are classified based on completed gestation period as:

- Extremely Preterm – Less than 28 weeks
- Very Preterm – 28 to <32 weeks
- Late and Moderate Preterm – 32 to <37 weeks

Extremely preterm babies require neonatal intensive care for survival. Most of the other preterm babies have a good chance of healthy survival with special newborn care envisaged at sub district, district and medical college hospitals, coupled with facility based kangaroo mother care and home based newborn care.

Figure 3.14 shows 12 States/UTs, which have reported preterm to total live births more than equal to 5%. However, all remaining States/UT's reported less than 5% of preterm delivered during 2021-22.

Figure 3.14 States/UTs wise percentage reported (=>5%) Pre term to total livebirths FY 2021-22



3.4.4 Still Birth Rate

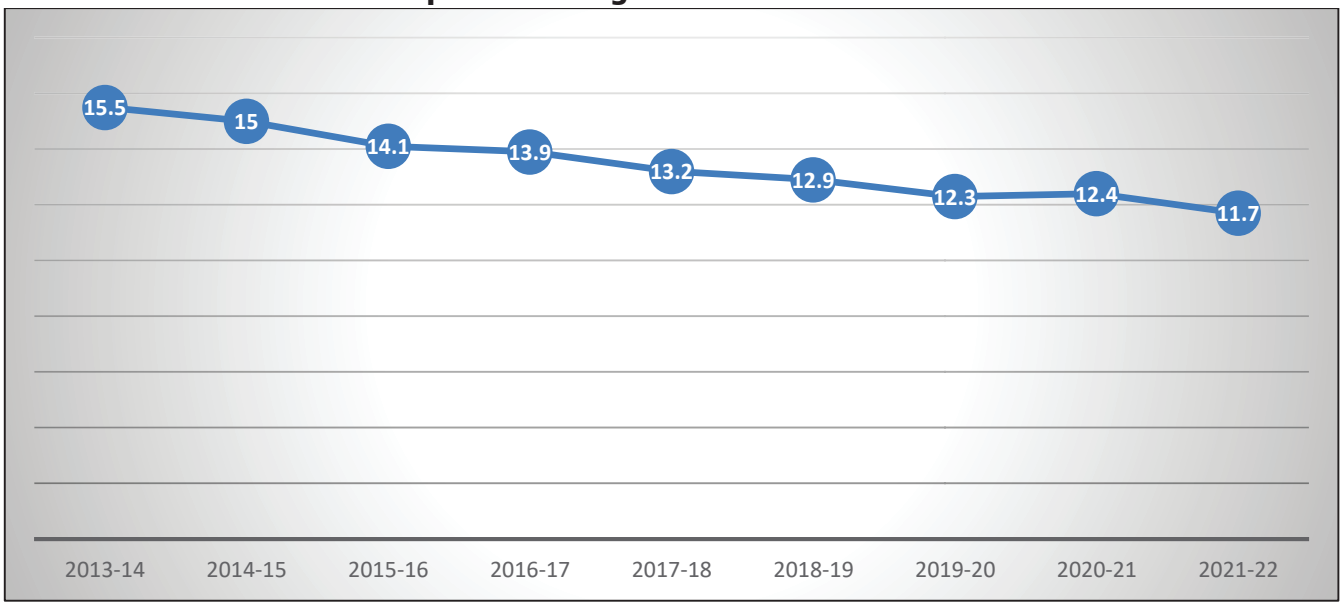
A baby, who dies after 28 weeks of pregnancy, but before or during birth, is classified as a stillbirth. *The Still Birth Rate (SBR) is defined as the number of still births per 1000 total births (live birth + still birth)*. As per WHO, there are nearly **2 million stillbirths** every year, one each 16 seconds. Over 40 per cent of all stillbirths occur during labour – a loss that could be avoided with improved quality during childbirth including routine monitoring and timely access to emergency obstetric care.

Experiencing a stillbirth during pregnancy or childbirth is a tragedy, there are psychological costs to women, especially women, and their families, such as maternal depression, financial consequences and economic percussions, as well as stigma and taboo.

The stillbirth rate is a key indicator of quality of care during pregnancy and childbirth India's Newborn Action Plan has articulated MOHFW vision and goal of "Ending preventable stillbirths to achieve "Single Digit SBR" by 2030, with all the states to individually achieve this target by 2030 with 4.4% average annual reduction rate (ARR) of Still Birth Rate.

Data reported in HMIS by States/UTs shows that the stillbirth-declining rate per 1000 births i.e. 11.79 during 2021-22, which was 15.5 in 2013-14 in India. Figure 3.15 presents the trend in the Still Birth rate declined around 24 percent at All India level.

Figure 3.15 Trend -Still birth rate based on HMIS data reported during 2013-14 to 2021-22



In 2021-22, at all India level, still birth rate *(Still births/Livebirths + Still Births)* is 11.79 percent , however it is observed that there are 15 States/UTs which have reported lower than the national average. The details of the States/UTs –wise percentage of Still Births as reported in 2021-22 is provided in Figure 3.16.

Figure 3.16 States/UTs wise Still Birth Rate 2021-22

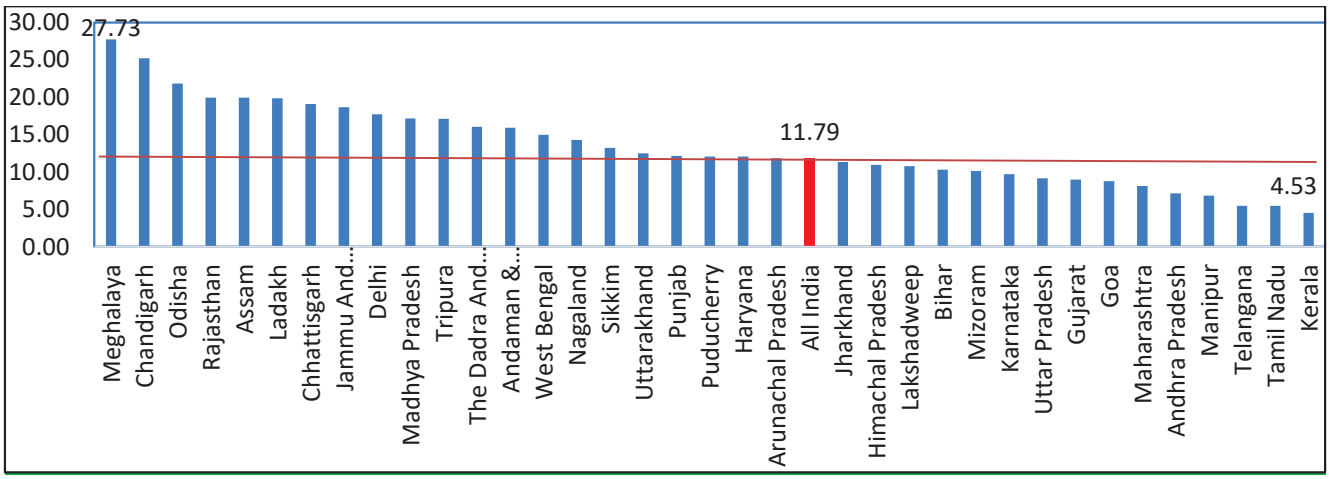
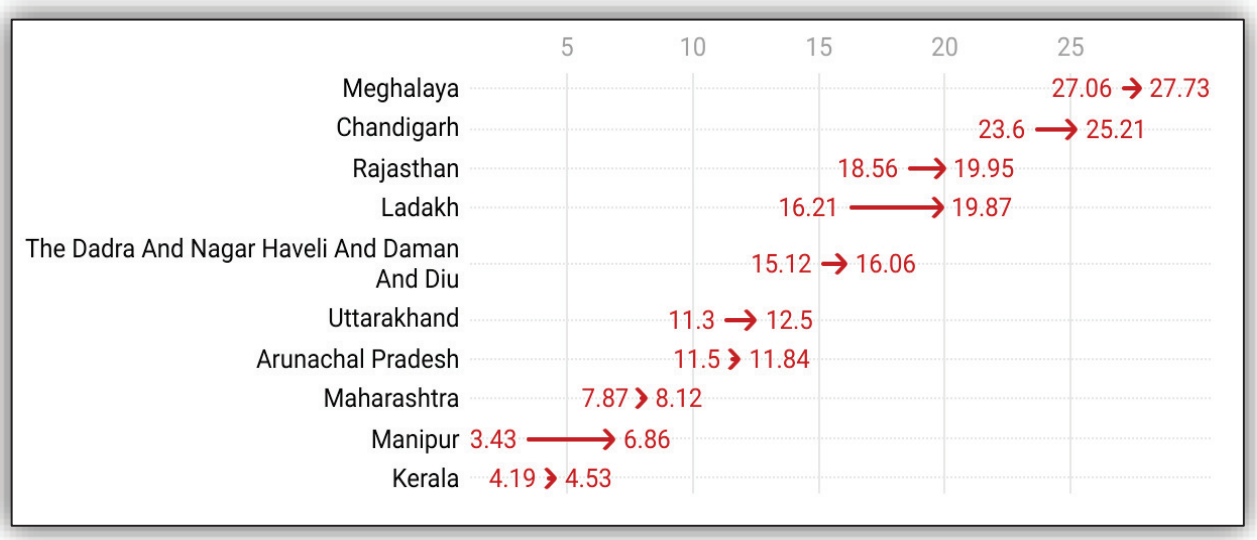


Figure 3.17 representing 10 States/UTs, which have reported high still birth rate during 2021-22 when compared to 2020-21.

Figure 3.17 States/UTs reported an increase in Still Birth Rate during 2020-21 & 2021-22



States/UTs wise total live births, Total Still Births, and Total Births (Live plus Stillbirth) as reported in HMIS 2021-22 is provided at **Annexure 3.5**

3.5 Sex Ratio at Birth

This natural sex ratio at birth was the balance for decades before prenatal sex detection technology was introduced in the 1970s. When the natural sex ratio at birth prevails, about 48.8% of all children born were girls.

Sex ratio at Birth is defined as the number of females per 1000 males in the population and is an important social indicator to measure the extent of prevailing equity between males and females in a society at a given point of time. Child Sex Ratio is a very vital indicator to check the abnormalities, which are leading to imbalanced sex ratio. If the sex ratio is improved only at birth, then it would surely lead to increase in overall sex ratio in each age group up to 6 years of age. As per data reported on HMIS by States/UTs, wise Sex Ratio at birth is shown in figure 3.18.

Figure 3.18 Sex ratio at Birth during 2021-22

Sex ratio is more accurate and refined indicator of the extent of prenatal sex selection. Ministry of health & Family Welfare had passed an act 1994 as Pre-Conception and Pre-Natal Diagnostic Techniques **(PCPNDT) Act,** which emphasized to stop female feticides and arrest the

declining sex ratio in India. The act banned prenatal sex determination to promote the gender equality.

Sex ratio at Birth at all India level has increased by around 2 percent only from 918 (2013-14) to 934 (2021-22). Figure 3.19 presents the trend of Sex ratio at Birth at National level reported in HMIS during 2013-14 to 2021-22.

Figure 3.19 Trend- Sex ratio at Birth at All India Level

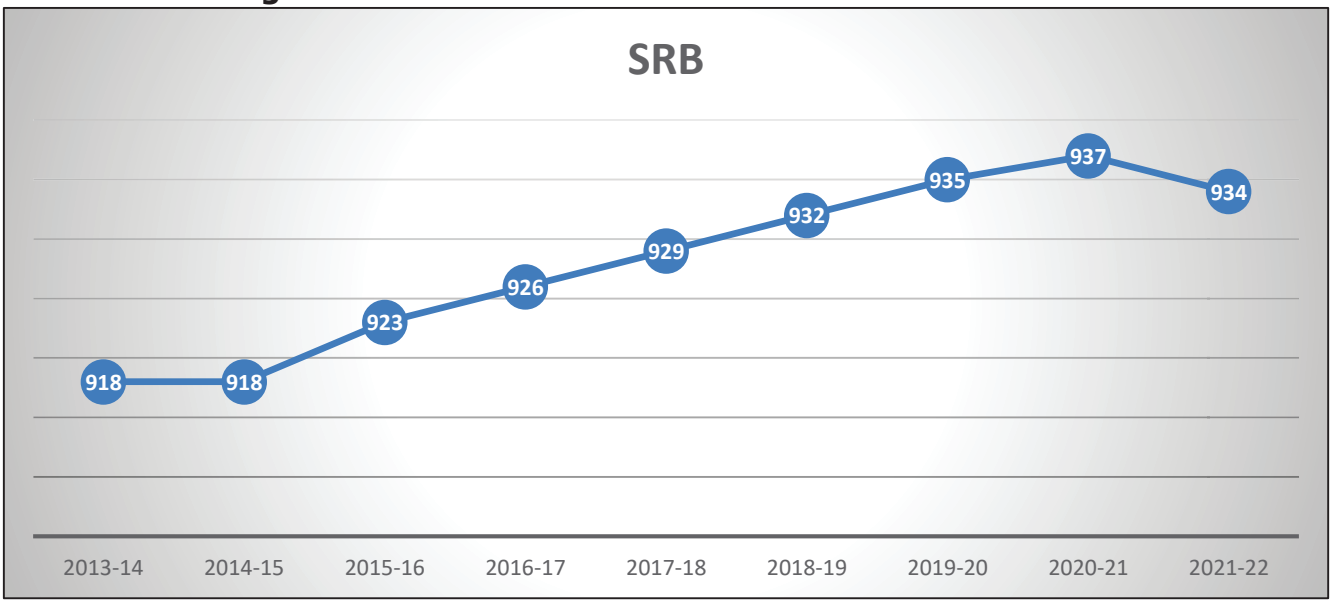
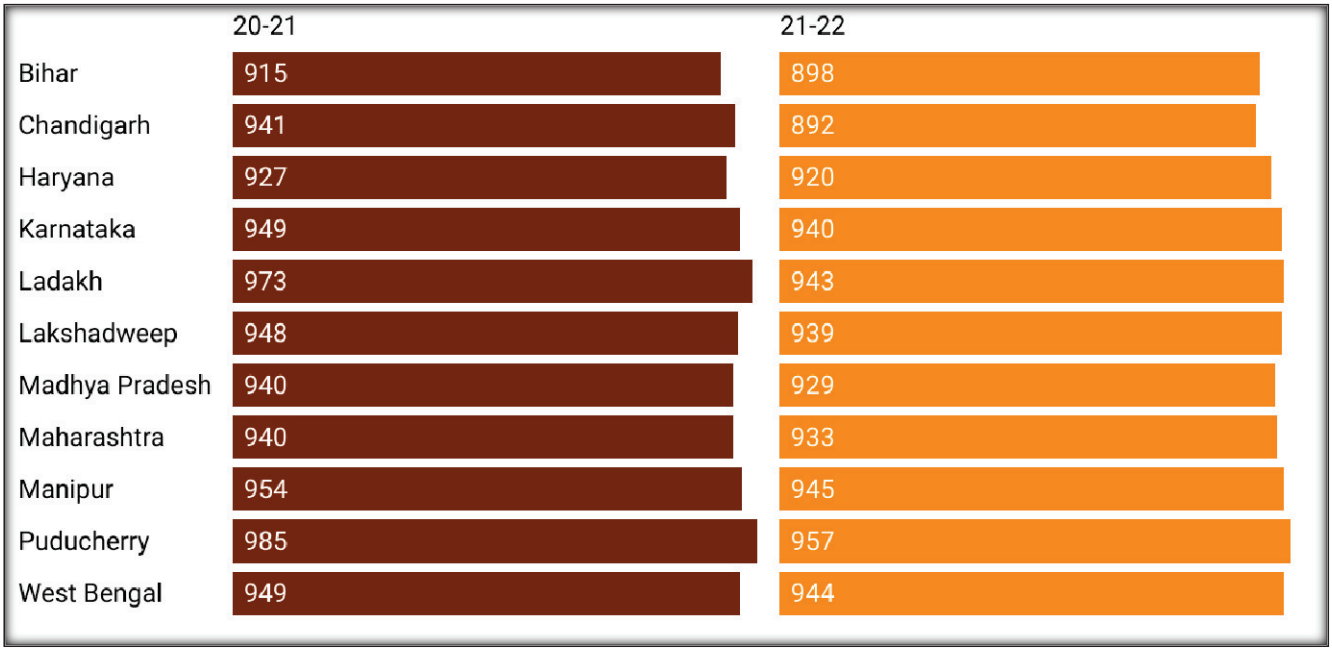


Figure 3.20 depicts those 11 States/UTs, contributing in decline trend of SRB during 2021-22 when compared to 2020-21.

Figure 3.20 States/UTs with declining SRB in 2020-21 w.r.t. 2021-22



State/UT-wise number of reported Live Births – Male, Live Births-Female and Sex Ratio at Birth as reported in HMIS during 2021-22 is provided at **Annexure 3.6**

3.6 Nutrition Rehabilitation Centre (NRC)

Nutritional Rehabilitation Centres (NRCs) are being set up in the health facilities for inpatient management of severely malnourished children, with counselling of mothers for proper feeding. The NRCs are facility based care units where severely acute malnourished (SAM) children below five years are admitted with their mothers/ care givers for treatment, stabilization and rehabilitation. The Mothers/ Care Giver stays with the children at the NRCs and attend counseling sessions on how to take care of the SAM child after discharge from the NRC. Special foods, nutritional supplements, medicines are administered according to the guidelines of Ministry of Health and Family Welfare. 19.8 million children below age 6 in India are undernourished (ICDS 2015).

Severe Acute Malnutrition (SAM) is an important contributing factor for most deaths amongst children suffering from common childhood illness, such as diarrhoea and pneumonia. SAM is an important preventable and treatable cause of morbidity and mortality in children below five years of age in India. A number of state governments have taken the lead and are in the process of scaling up the establishment of Nutritional Rehabilitation Centres (NRCs) with the intention to improve the quality of care being provided to children with SAM and to reduce child mortality.

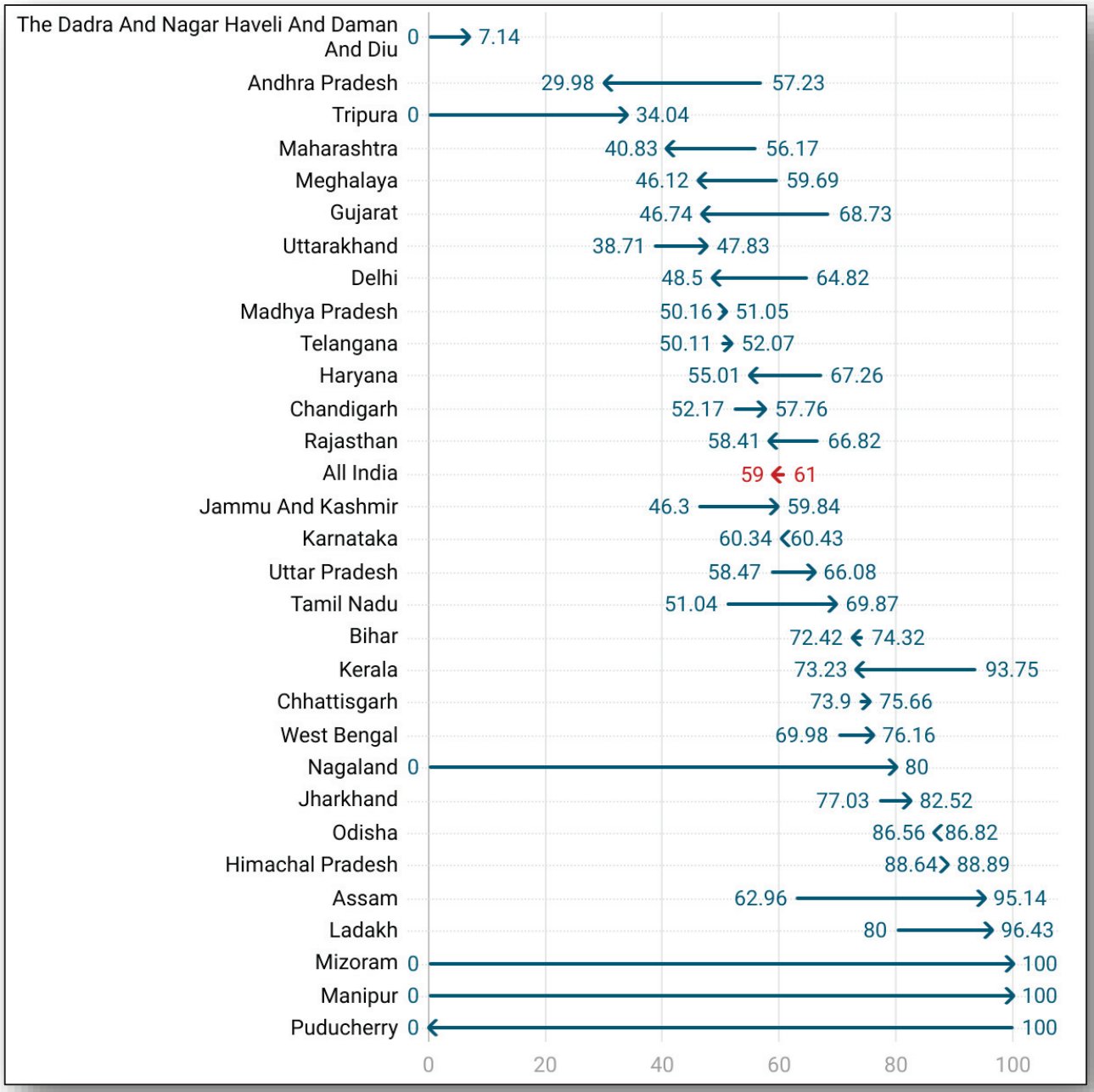
The Major objectives of the NRC are:

1. ***To provide facility based management to children with SAM***
2. ***To reduce under 5 mortality due to Severe Acute Malnutrition***

There are two elements, which are captured under HMIS related to NRC. These include Number of children admitted in NRC and Number of children discharged with target weight gain from the NRCs.

As mentioned in Figure 3.21, at national level percent of Children discharged with target weight gain (against the children admitted) from the NRCs during 2021-22 is 59% which is showing a decline from 2020-21 which was reported as 61%. There are 17 States/UTs, which are showing children discharged with target weight gain higher than the national average reported on HMIS.

Figure 3.21: Percentage of Children discharged with target weight gain from the NRCs, States/UTs – as reported in HMIS during 2020-21 & 2021-22



State/UT-wise number of reported children admitted in NRC and discharged with target weight gain from the NRCs as reported in HMIS during 2021-22 is provided at **Annexure 3.7**

3.7 Rashtriya Bal Swasthya Karyakarm (RBSK)

Rashtriya Bal Swasthya Karyakram (RBSK) is a program to improve the overall quality of life of children enabling all children achieve their full potential; and also provide comprehensive care to all the children in the community. This program involves screening of children from birth to 18 years of age for 4 Ds- Defects at birth, Diseases, Deficiencies and Development delays, spanning 32 common health conditions for early detection and free treatment and management, including surgeries at tertiary level. Children diagnosed with identified selected health conditions are provided early intervention services and follow-up care at the district level. These services are provided free of cost, thus helping their families reduce out of pocket expenditure incurred on the treatment.

According to March of Dimes (2006), out of every 100 babies born in this country annually, 6 to 7 have a birth defect. This would translate to around 17 lakhs birth defects annually in the country and accounts for 9.6% of all the newborn deaths. Various nutritional deficiencies affecting the preschool children range from 4 per cent to 70 per cent. Developmental delays are common in early childhood affecting at least 10 percent of the children. These delays if not intervened timely may lead to permanent disabilities including cognitive, hearing or vision impairment. Also, there are group of diseases common in children viz. dental caries, rheumatic heart disease, reactive airways diseases etc. Early detection and management diseases including deficiencies bring added value in preventing these conditions to progress to its more severe and debilitating form and thereby reducing hospitalization and improving implementation of Right to Education.

Realizing the importance of Birth Defects and its implications on the affected individual, family and society, Ministry of Health & Family Welfare, Government of India under Rashtriya Bal Swasthya Karyakram (RBSK) initiated Newborn screening for Birth Defects at all delivery points with special focus on visible Birth Defects. Those Newborns identified with Birth Defects will be referred to higher centres for further evaluation and management.

Under RBSK initiative 0-6 year's age group will be specifically managed at District Early Intervention Center (DEIC) level while for 6-18 years age group, management of conditions will be done through existing public health facilities. DEIC will act as referral linkages for both the age groups.

First level of screening is done at all delivery points through existing Medical Officers, Staff Nurses and ANMs. After 48 hours until 6 weeks the screening of newborns will be done by ASHA at home as a part of Home Based New-born Care (HBNC) package. Outreach screening is done by dedicated Mobile Health teams for 6 weeks to 6 years at anganwadis centres and 6-18 years children at school. Once the child is screened and referred from any of these points of identification, it would be ensured that the necessary treatment/intervention is delivered at zero cost to the family. Health screening of children was a known intervention under the School Health Programme.

In Health Management Information System (HMIS), around 12 data elements related to Rashtriya Bal Swasthya Karyakram (RBSK) are being captured regarding screening for birth defect, screening by RBSK mobile team at Aanganwadi centers and schools, identification and management of Diseases, deficiencies and development delays.

i. **Screening for Defect at Birth-**

Child Health Screening and Early Intervention Services under NHM envisage covering **30 identified health conditions** for early detection and free treatment & management. Based on the high prevalence of diseases like hypothyroidism, sickle cell, anaemia and beta thalassemia in certain geographical pockets of some States /UTs, and availability of testing and specialized support facilities, States/UTs may incorporate them as part of this initiative.

At all India level, there were 2,03,38,078 live birth, of which 81,43,177 (40%) newborn were screened for defects at birth (as per RBSK) during 2021-22 in comparison to previous year 2020-21 which was 36%. 4 percent increase was observed during two financial years to total live births reported in the respective years. Figure 3.12 shows the Number of Newborns Screened for Defects at Birth.

Figure 3.22- Number of Newborns Screened for Defect at Birth during 2020-21and 2021-22 (in Lakhs)

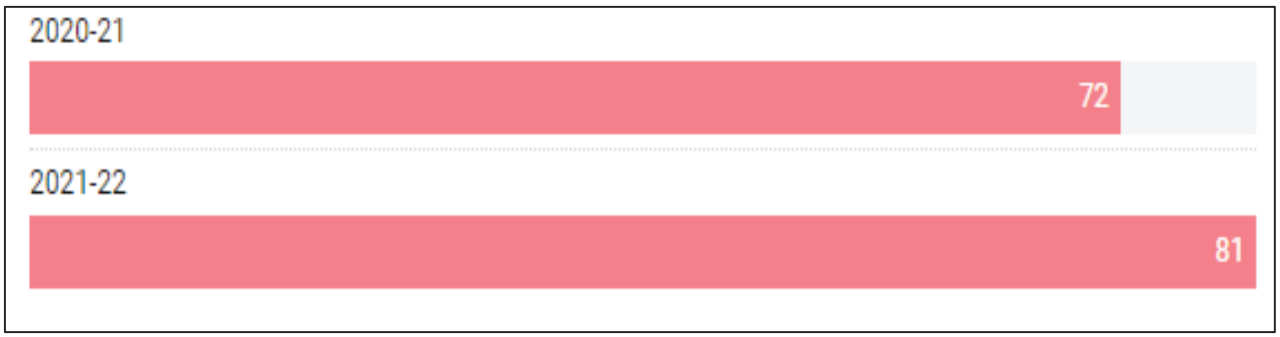


Figure 3.23 presents the percentage of newborns screened for defect at birth against total live birth as reported in HMIS during 2021-22. There are 20 States/UTs, which has reported more than national average i.e. 40%. These States includes Andhra Pradesh, Arunachal Pradesh, Assam, Chandigarh, Goa, Gujarat, Haryana, Himachal Pradesh, Jharkhand, Madhya Pradesh, Meghalaya, Odisha, Punjab, Tamil Nadu, The Dadra and Nagar Haveli and Daman and Diu, Tripura, Uttarakhand, Uttar Pradesh and West Bengal.

Figure 3.23- Percentage of Newborns Screened for Defect at Birth against Total Live Birth in India as Reported during 2021-22 (in Lakhs)

ii. Screening at Anganwadi Centers and Schools

As per RBSK Guidelines, Children aged 6 Weeks to 6 years are screened at Anganwadi Centres and children aged 6 years to 18 years are screened at Government and Government aided schools by dedicated Mobile Health Teams.

720.36 lakh children were screened in 2021-22 as reported in HMIS. The details on comparative Statement on Children Screened at Anganwadi Centers and Govt. and Govt. added Schools in India as reported during 2020-21 and 2021-22 is provided in Table 3.4.

Table 3.4 Children Screened at Anganwadi Centers and Govt. and Govt. aided Schools in India as reported during 2020-21 and 2021-22

	2020-21	2021-22
Childrens screened at Anganwadi centres (6 month to 6 years)	111.44 Lakh	280.69 lakh
Childrens screened at govt. and Govt. added schools (6 years to 18 years)	112.37 Lakh	439.67 lakh
Total children screened (6 month to 18 years)	**223.81 lakh**	**720.36 lakh**

iii. Identification of Diseases, Deficiencies and Development Delay

The 'Child Health Screening and Early Intervention Services' Programme under Rashtriya Bal Swasthya Karyakram aims at early detection and management of the 4Ds prevalent in children.

Table 3.5 presents the bifurcation of children identified under RBSK program. As mentioned in table, out of total 720.36 lakhs children screened (6 months -16 years), 62.11 lakhs have been identified with diseases, deficiency and development delay.

Table 3.5 Children Identified at Anganwadi Centers and Govt./Govt. Aided Schools in India as reported during 2020-21 and 2021-22

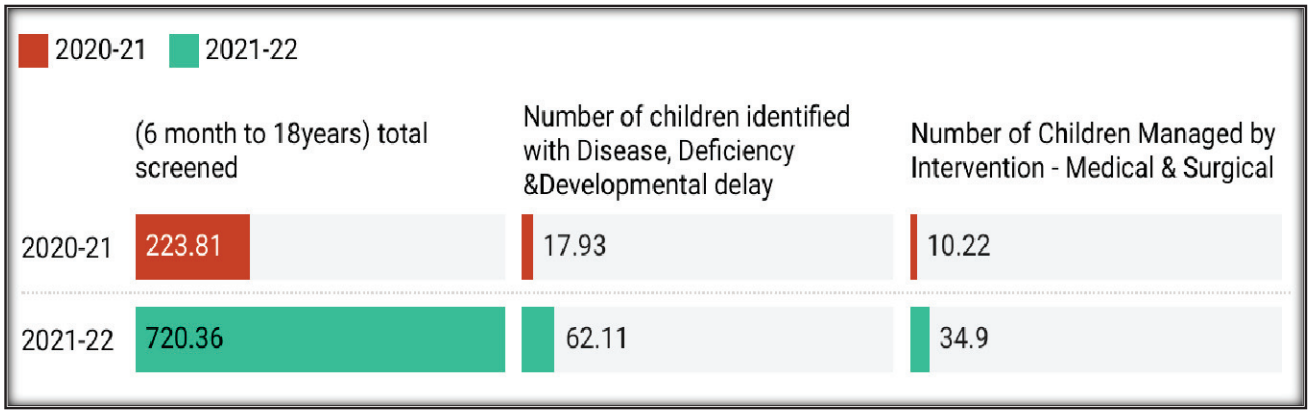
	2020-21	2021-22
Children Identified with Diseases	10.45 Lakh	37.62 lakhs
Children Identified with Deficiencies	4.43 Lakh	16.11 lakh
Children Identified with Development Delay	3.04 Lakh	8.37 lakh
Total Children identified with Diseases, Deficiencies & Development Delays	**17.93 lakh**	**62.11 lakh**

iv. Management of 4Ds

Ministry of Health and Family Welfare (MoHFW) has signed MOUs with several Medical Colleges and private hospitals in order to conduct medical and surgical procedures for children in the age group of 0-18 years who suffering from various ailments for achieving the desired objective of RBSK program.

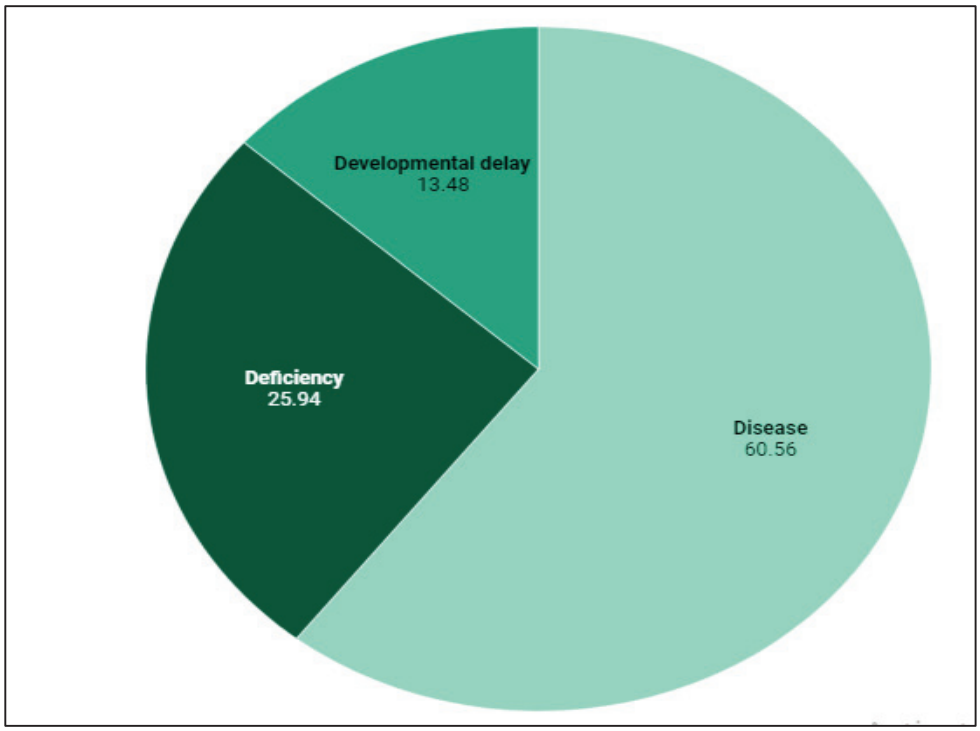
Figure 3.24 presents total Children Screened, Identified and management of 4Ds component under RBSK in India as reported in HMIS during 2020-21 & 2021-22. There are total, 62.11 lakh children identified with disease, Deficiency & Developmental delay and out of them 34.9 lakh children were managed by either medical intervention (34.34 lakh) or surgical intervention (5.64 lakh).

Figure 3.24 – Total Children Screened, Identified and Management of Disease, Deficiency & Developmental delay done under RBSK during 2021-21 and 2021-22 (in Lakhs)



Out of total 62.11 lakh children who were identified with Disease, Deficiency & Developmental delay; the bifurcations are represented in figure 3.25 which shows that 60.5 % children's are identified with diseases (37.62 Lakh), 25.9 % children's are identified with deficiencies (16.11 lakh) and 13.48 % children's are identified with deficiencies development delays (8.37 lakh).

Figure 3.25 – Percentage distribution of Children identified with Disease, Deficiency & Developmental delay



State/UT-wise number of children screened, identified and management under RBSK as reported in HMIS during 2021-22 is provided at **Annexure 3.8**

3.8 Child Morbidity & Mortality

3.8.1 Child Morbidity

Child Morbidity is any departure, subjective or objective, from a state of physiological or psychological well-being (i.e. sickness or illness) within a child. Morbidity (common illnesses): Congenital anomalies, injuries, and non-communicable diseases (chronic respiratory diseases, acquired heart diseases, childhood cancers, diabetes, and obesity) are the emerging priorities in the global child health agenda.

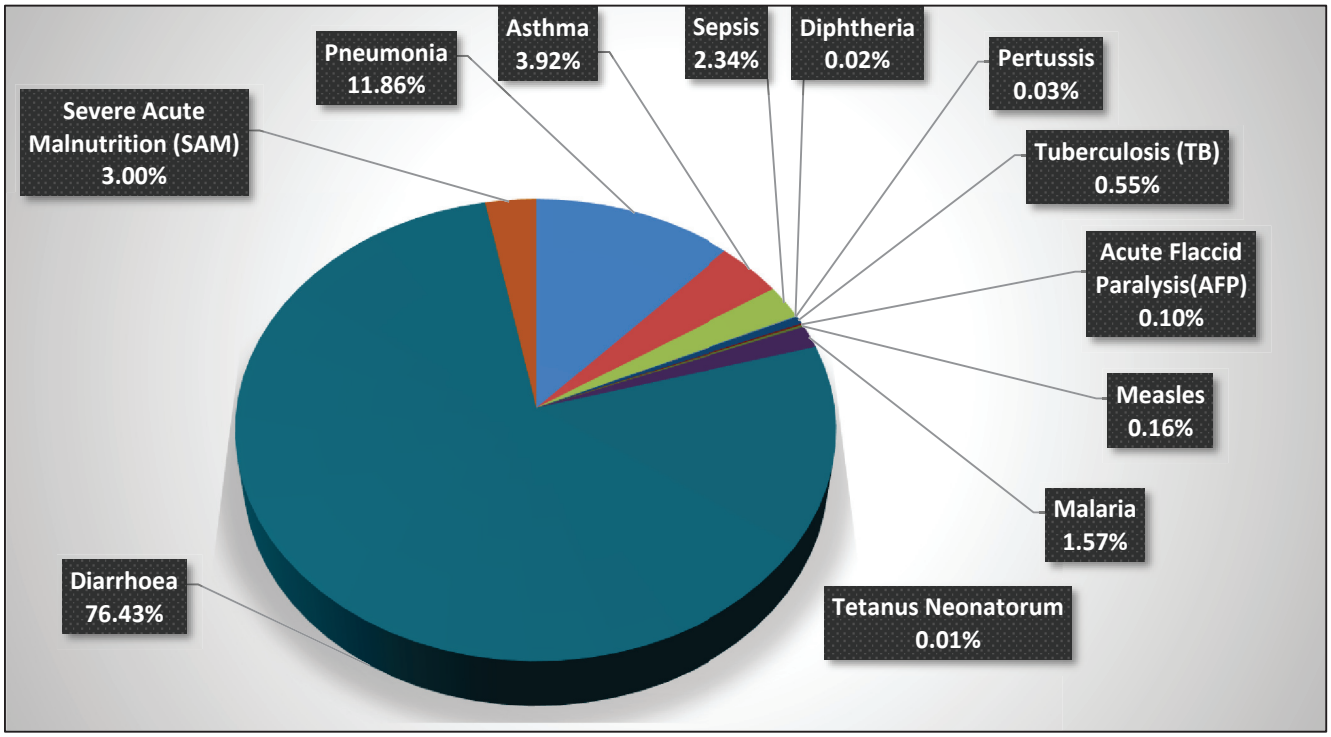
Trends in morbidity and mortality in the children are important indicators of the status of health in a country. They also help in determining goals and allocating resources to areas of which needs more importance. Childhood morbidities are a major cause of mortality of children and the burden of child mortality from preventable and treatable diseases, which are treatable with simple interventions, is an important area of concern.

Malaria, respiratory tract infection and diarrheal diseases are the leading causes of childhood morbidity and mortality. In HMIS data is being captured for 12 Childhood diseases treated in **OPD** (Pneumonia, Asthma, Sepsis, Diphtheria, Pertusis, Tetanus Neonatrum, Tuberculosis,

Acute Flaccid Paralysis(AFP), Measles, Malaria, Severe Acute Malnutrition) and 2 Childhood Diseases treated in **IPD** (ARI and Diarrhoea).

In the OPDs among childhood diseases, the footfall for the diarrhea (76%) is the highest, which is also treated in IPDs. Pneumonia (12%) occurrence is the most, followed by Asthma (4%) and SAM (3%). Percentage occurrence of rest of all diseases is less than 5% to total OPD for childhood reported on HMIS. Figure 3.26 represents the bifurcation of percentage of OPDs among childhood diseases (cause wise) as reported in HMIS during 2021-22.

Figure 3.26 Cause – wise percentage distribution of OPDs among Childhood diseases during 2021-22



3.8.2 Infant & Child Mortality

Infant mortality is the death of an infant before his or her first birthday while Child mortality or the under-five mortality rate refers to the probability of a child dying between birth and exactly 5 years of age for every 1,000 live births. Infant mortality rate is of high importance when it comes to the health of a society.

As per UNICEF, globally infectious diseases, including pneumonia, diarrhoea and malaria, remain a leading cause of under-five deaths, along with preterm birth and intrapartum-related complications. Despite this considerable progress, improving child survival remains a matter

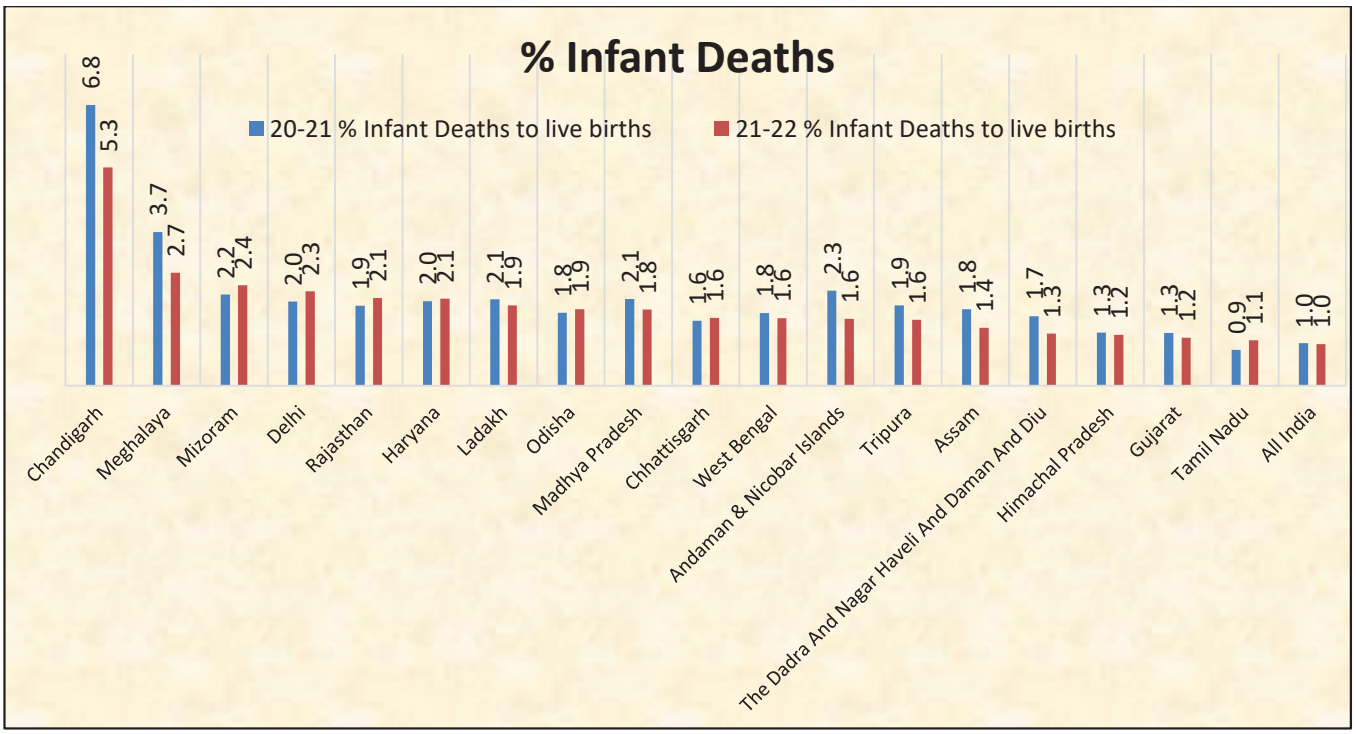
of urgent concern. In 2020 alone, roughly 13,800 under-five deaths occurred every day, an intolerably high number of largely preventable child deaths.

HMIS captures data on Mortality age wise and cause wise of child up to 5 years of age. The data captured under the following heads:

1. Infants upto 24 hours of age
2. Infant Deaths up to 4 weeks
3. Infant Deaths 1-12 months
4. Child Deaths 1-5 years

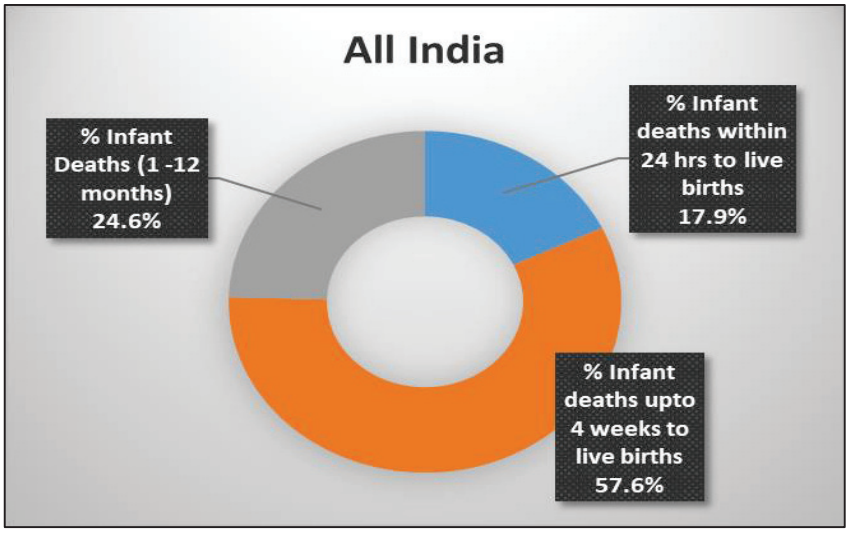
The figure 3.27 represents the States/UTs wise reported percentage total infant deaths to total live births reported above All India figure i.e., as reported on HMIS during FY 2020-21 & 2021-22.

Figure. 3.27 States/UTs wise percentage infant deaths reported during 2020-21 & 2021-22



Infant's deaths are bifurcated into three categories based on the age of the infants for data collection under HMIS. Based on the HMIS data as uploaded by Stats/UTs during the FY 2021-22 it is seen that based on the age group when the infant dies, maximum deaths (57%) are occurring during the neonatal period (within 28 days of post-partum), followed by the infant deaths (25%) occurring in post neonatal period and then infant deaths (18%) within 24 hours. Figure 3.28 represents the age wise bifurcation of the infant deaths reported during 2021-22.

Figure 3.28 Total Infant Deaths by Age group wise during FY 2021-22

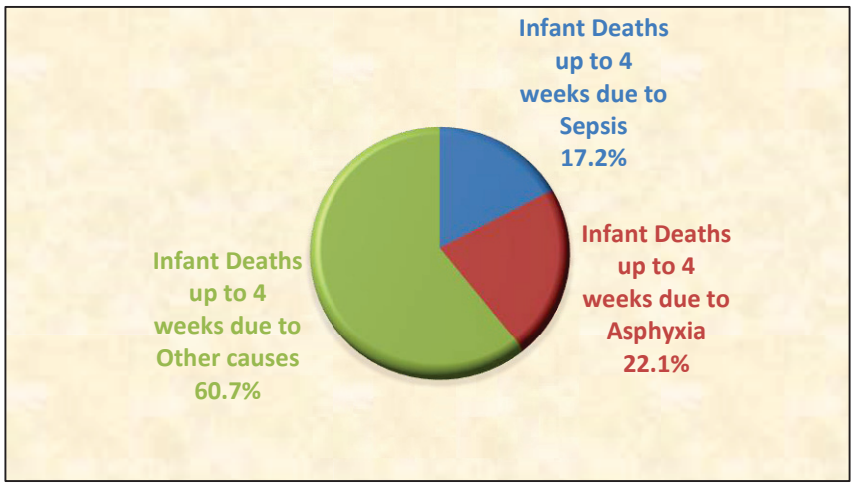


Infant deaths up to 1 month (4 weeks)

The first 28 days of life – the neonatal period – is the most vulnerable time for a child's survival. Infants are at highest risk of dying in their first month of life at an average global rate as per UNICEF- 17 deaths per 1,000 live births in 2020, down by 54 per cent from 37 deaths per 1,000 in 1990. Children who die within the first 28 days of birth suffer from conditions and diseases associated with lack of quality care at or immediately after birth and in the first days of life as the neonatal period is the most vulnerable time for a child.

As per 2021-22 HMIS data, infant deaths occurring up to 4 weeks of age excluding the deaths within 24 hrs are being reported for two main causes i.e. sepsis and asphyxia, rest all the deaths are reported under other causes. Out of two main causes which is captured by HMIS Asphyxia (22%) is the major reason for the infant deaths in this age group, followed by Sepsis (17%). However, all the other causes contribute 63% of neo-natal deaths.

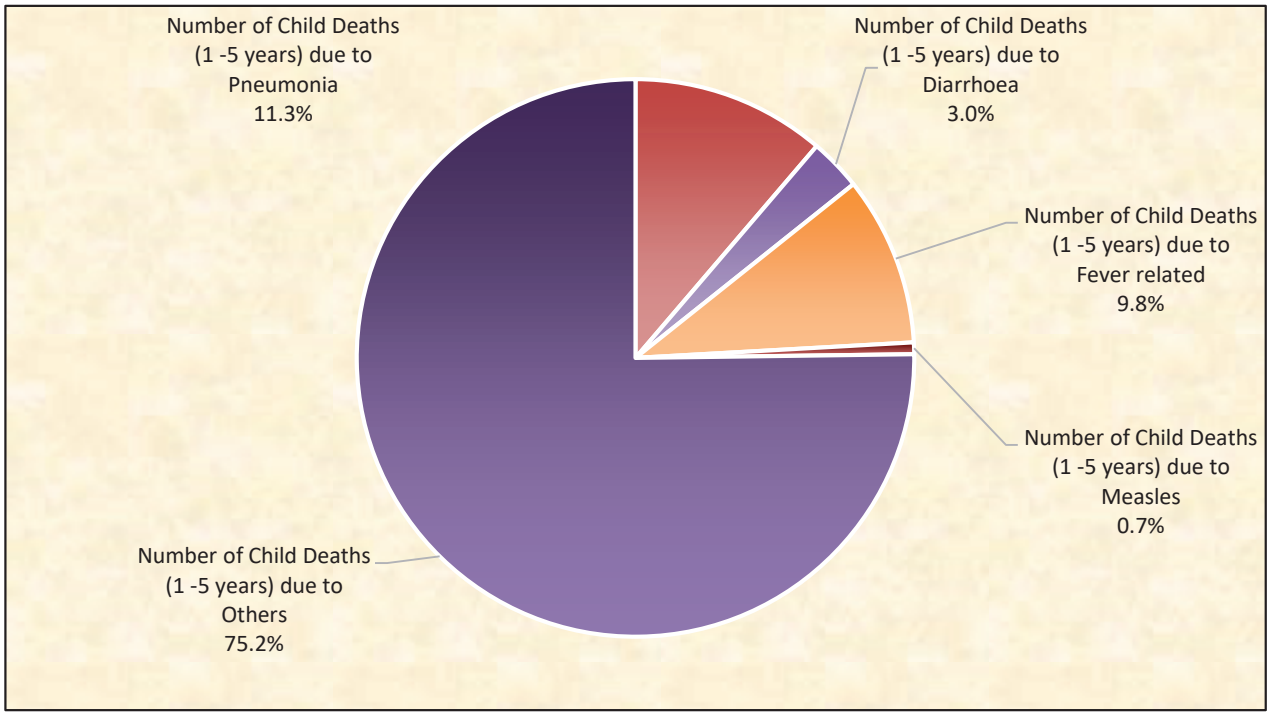
Figure.3.29 Infant deaths upto 4 weeks of age -by cause during FY 2021-22



Infant Deaths (1-12 months)

For the deaths reported in HMIS for the infants aged between 1 month and 12 months, other causes contribute 75% followed by Pneumonia (11%), fever-related (10%), Diarrhoea (3%) and Measles (1%). Figure 3.30 represents cause wise percentage of infant deaths (1-12 months) during 2021-22.

Figure 3.30 Percentage of infant deaths (1-12 months) - By Cause during FY 2021-22



State/UT-wise number of infant deaths cause -wise as reported in HMIS during 2021-22 is provided at **Annexure 3.9**

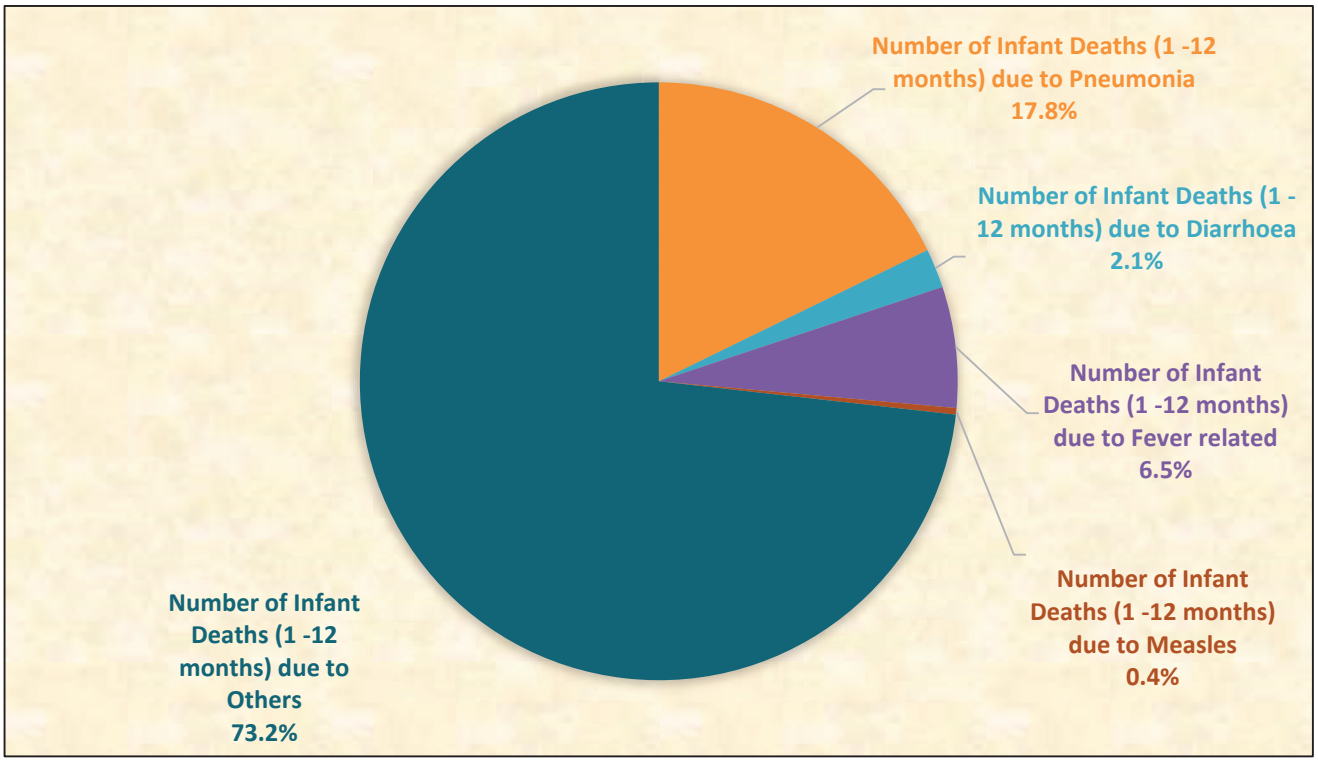
Child Deaths

Deaths of children aged 1 year to 5 years is captured in HMIS under four main causes and remaining causes are clubbed together while capturing the data from States/UTs. Various causes, which are available in HMIS, are as below:

- Pneumonia
- Diarrhoea
- Fever Related
- Measles
- Others

As per the data reported by States/UTs on HMIS for 2021-22, in the age group 1 yr to 5 yrs children maximum deaths in this age group are due to Pneumonia (18%), followed by Fever(7%), diarrhea(2%) and Measles(1%) out of the four main causes. Remaining deaths which are 80% are reported as others as a cause. Figure 3.31 represents the cause wise percentage of child (1 to 5 years of age) deaths reported.

Figure 3.31 Child Deaths (1-5 yrs of age) - By Cause during 2021-22



State/UT-wise number of infant and child deaths as reported in HMIS during 2021-22 at **Annexure 3.10**

Annexure-3.1

States/UTs wise total number of Home & Institutional Deliveries followed by 7 & 6 HBNC Visits respectively as reported in HMIS 2021-22

State/UT	Total Home Deliveries	Number of newborns received 7 Home Based Newborn Care (HBNC) visits in case of Home delivery	Number of Institutional Deliveries conducted (Including C-Sections)	Number of newborns received 6 HBNC visits after Institutional Delivery
All India	**916399**	**813885**	**19521638**	**9980357**
Andaman & Nicobar Islands	55	33	3679	2236
Andhra Pradesh	262	178	751454	552346
Arunachal Pradesh	1906	1171	18492	3179
Assam	50052	45973	523369	491249
Bihar	263035	185500	1763380	814278
Chandigarh	19	16	19705	13059
Chhattisgarh	6240	4438	472675	254690
Delhi	10681	6497	217255	112008
Goa	6	1	14504	2
Gujarat	2349	2188	1092032	785314
Haryana	17779	12562	495223	193808
Himachal Pradesh	6495	5351	82252	65107
Jammu And Kashmir	9877	7212	182620	78529
Jharkhand	21910	16926	687366	351727
Karnataka	454	659	878101	465804
Kerala	586	378	426021	139494
Ladakh	42	21	3514	946
Lakshadweep	0	0	922	446
Madhya Pradesh	52982	48095	1257110	627294
Maharashtra	10656	9079	1743016	486022
Manipur	5759	4030	23563	8266
Meghalaya	35500	25147	47508	25976
Mizoram	2463	1156	16798	7224
Nagaland	3579	2956	12985	2948
Odisha	13924	8841	619285	516020
Puducherry	4	4	31656	6251
Punjab	3653	2600	369816	202044
Rajasthan	20085	8439	1274823	213869
Sikkim	37	25	6698	3529
Tamil Nadu	47	3	920649	124445
Telangana	25	166	595765	249501
The Dadra And Nagar Haveli And Daman And Diu	44	22	10515	7793
Tripura	2750	2404	47448	34571
Uttarakhand	18195	15376	139592	102555
Uttar Pradesh	339259	385023	3518654	2369092
West Bengal	15689	11415	1253193	668735

Annexure-3.2

States/UTs wise total live births, number of preterm new borns & NBSU admissions as reported in HMIS 2021-22

State/UT	Total Live Births	Number of Pre term newborns (< 37 weeks of pregnancy)	Number of Admission in NBSU (New Born Stabilisation Unit)
All India	**20338078**	**767513**	**651097**
Andaman & Nicobar Islands	3706	455	1591
Andhra Pradesh	752843	20099	56588
Arunachal Pradesh	20201	608	309
Assam	565794	23343	7616
Bihar	1998539	32400	13258
Chandigarh	19529	2040	956
Chhattisgarh	473012	22403	22933
Delhi	226552	21867	14143
Goa	14585	1292	589
Gujarat	1092293	37290	39079
Haryana	510243	26687	16553
Himachal Pradesh	88380	5130	7855
Jammu And Kashmir	190504	6831	11137
Jharkhand	708234	13174	7445
Karnataka	876419	35775	59917
Kerala	430674	19556	53256
Ladakh	3503	112	58
Lakshadweep	919	33	276
Madhya Pradesh	1301504	77221	24093
Maharashtra	1747059	56377	51080
Manipur	29262	316	243
Meghalaya	81463	2616	2549
Mizoram	19122	392	1329
Nagaland	16367	186	3109
Odisha	623877	38340	7923
Puducherry	31497	1691	391
Punjab	370996	18434	6235
Rajasthan	1279440	49489	77652
Sikkim	6715	83	75
Tamil Nadu	920615	24206	39925
Telangana	606638	7574	38262
The Dadra And Nagar Haveli And Daman And Diu	10599	1455	2172
Tripura	49625	1994	2791
Uttarakhand	156175	4483	8511
Uttar Pradesh	3856787	89003	39331
West Bengal	1254407	124558	31867

Annexure-3.3

States/UTs wise total live births, Total admission SNCU, SNCU Admissions - referred by ASHA & SNCU deaths as reported in HMIS 2021-22

State/UT	Total Live Births	Total admission SNCU	SNCU Admissions - referred by ASHA	Number of deaths occurring at SNCU
All India	**20338078**	**1255875**	**71231**	**89770**
Andaman & Nicobar Islands	3706	2171	0	35
Andhra Pradesh	752843	71895	3118	3150
Arunachal Pradesh	20201	969	3	53
Assam	565794	53879	2996	4170
Bihar	1998539	42956	3989	5488
Chandigarh	19529	1273	0	17
Chhattisgarh	473012	24260	1445	3200
Delhi	226552	34133	6	1768
Goa	14585	1656	0	67
Gujarat	1092293	45395	2647	4393
Haryana	510243	27091	965	596
Himachal Pradesh	88380	11437	5	453
Jammu And Kashmir	190504	26134	226	1323
Jharkhand	708234	12505	1427	665
Karnataka	876419	70921	3263	5038
Kerala	430674	46003	113	663
Ladakh	3503	684	245	35
Lakshadweep	919	91	0	0
Madhya Pradesh	1301504	96889	6495	10918
Maharashtra	1747059	87251	2406	6118
Manipur	29262	505	1	41
Meghalaya	81463	4390	22	266
Mizoram	19122	1688	1	166
Nagaland	16367	1133	0	87
Odisha	623877	66379	15685	5157
Puducherry	31497	3740	0	277
Punjab	370996	18944	116	430
Rajasthan	1279440	91549	661	6403
Sikkim	6715	125	0	0
Tamil Nadu	920615	120049	1235	6824
Telangana	606638	42060	5248	1879
The Dadra And Nagar Haveli And Daman And Diu	10599	4005	0	126
Tripura	49625	4988	108	414
Uttarakhand	156175	5137	47	408
Uttar Pradesh	3856787	94091	15350	5739
West Bengal	1254407	139499	3408	13403

Annexure-3.4

States/UTs wise total live births, Total New born weighed at birth, New borns having weight less than 2.5 kg and new borns breast fed within 1 hour of birth as reported in HMIS 2021-22

State/UT	Total Live Births	Number of new borns weighed at birth	Number of new borns having weight less than 2.5 kg	Number of New borns breast fed within 1 hour of birth
All India	**20338078**	**19302147**	**2411793**	**18351173**
Andaman & Nicobar Islands	3706	3705	667	2688
Andhra Pradesh	752843	727128	44003	726646
Arunachal Pradesh	20201	19948	1073	16420
Assam	565794	556071	73974	552190
Bihar	1998539	1765330	189494	1744305
Chandigarh	19529	19535	5092	16590
Chhattisgarh	473012	459225	57510	442453
Delhi	226552	220779	56495	153309
Goa	14585	14580	2867	10740
Gujarat	1092293	1052702	121073	993535
Haryana	510243	496480	62950	451551
Himachal Pradesh	88380	87949	12170	80273
Jammu And Kashmir	190504	187986	10241	179655
Jharkhand	708234	684130	43502	669173
Karnataka	876419	849887	93417	831777
Kerala	430674	419719	52124	397819
Ladakh	3503	3480	327	3034
Lakshadweep	919	919	66	849
Madhya Pradesh	1301504	1236408	206921	1186337
Maharashtra	1747059	1729576	207494	1667878
Manipur	29262	29019	1515	24470
Meghalaya	81463	79323	6456	74993
Mizoram	19122	18341	989	17197
Nagaland	16367	16016	554	14469
Odisha	623877	622569	118073	601444
Puducherry	31497	28182	4749	21814
Punjab	370996	365485	29861	302997
Rajasthan	1279440	1226413	180031	1118100
Sikkim	6715	6402	443	5601
Tamil Nadu	920615	920615	122740	809996
Telangana	606638	515263	37792	489875
The Dadra And Nagar Haveli And Daman And Diu	10599	10382	3074	9263
Tripura	49625	49298	5538	48255
Uttarakhand	156175	150010	12129	137323
Uttar Pradesh	3856787	3552410	367305	3484441
West Bengal	1254407	1176882	279084	1063713

Annexure-3.5

States/UTs wise total live births, Total Still Births, and Total Births (Live plus Still) as reported in HMIS 2021-22

State/UT	Total Live Births	Still Birth	Total Births(Live+ Still)
All India	**20338078**	**242584**	**20580662**
Andaman & Nicobar Islands	3706	60	3766
Andhra Pradesh	752843	5418	758261
Arunachal Pradesh	20201	242	20443
Assam	565794	11511	577305
Bihar	1998539	20796	2019335
Chandigarh	19529	505	20034
Chhattisgarh	473012	9208	482220
Delhi	226552	4091	230643
Goa	14585	129	14714
Gujarat	1092293	9927	1102220
Haryana	510243	6225	516468
Himachal Pradesh	88380	979	89359
Jammu And Kashmir	190504	3620	194124
Jharkhand	708234	8132	716366
Karnataka	876419	8614	885033
Kerala	430674	1962	432636
Ladakh	3503	71	3574
Lakshadweep	919	10	929
Madhya Pradesh	1301504	22701	1324205
Maharashtra	1747059	14294	1761353
Manipur	29262	202	29464
Meghalaya	81463	2323	83786
Mizoram	19122	196	19318
Nagaland	16367	237	16604
Odisha	623877	13934	637811
Puducherry	31497	385	31882
Punjab	370996	4569	375565
Rajasthan	1279440	26041	1305481
Sikkim	6715	90	6805
Tamil Nadu	920615	5052	925667
Telangana	606638	3334	609972
The Dadra And Nagar Haveli And Daman And Diu	10599	173	10772
Tripura	49625	864	50489
Uttarakhand	156175	1977	158152
Uttar Pradesh	3856787	35637	3892424
West Bengal	1254407	19075	1273482

Annexure 3.6

State/UT-wise number of reported Live Births – Male, Live Births-Female and Sex Ratio at Birth as reported in HMIS during 2021-22

State/UT	Live Birth - Male	Live Birth - Female	Sex Ratio at Birth
All India	**10516844**	**9821234**	**934**
Andaman & Nicobar Islands	1888	1818	963
Andhra Pradesh	385985	366858	950
Arunachal Pradesh	10379	9822	946
Assam	291467	274327	941
Bihar	1053093	945446	898
Chandigarh	10320	9209	892
Chhattisgarh	241293	231719	960
Delhi	117776	108776	924
Goa	7469	7116	953
Gujarat	566748	525545	927
Haryana	265736	244507	920
Himachal Pradesh	45535	42845	941
Jammu And Kashmir	98210	92294	940
Jharkhand	365975	342259	935
Karnataka	451784	424635	940
Kerala	218844	211830	968
Ladakh	1803	1700	943
Lakshadweep	474	445	939
Madhya Pradesh	674584	626920	929
Maharashtra	903766	843293	933
Manipur	15045	14217	945
Meghalaya	41840	39623	947
Mizoram	9592	9530	994
Nagaland	8507	7860	924
Odisha	321838	302039	938
Puducherry	16091	15406	957
Punjab	192465	178531	928
Rajasthan	657343	622097	946
Sikkim	3390	3325	981
Tamil Nadu	472850	447765	947
Telangana	313081	293557	938
The Dadra And Nagar Haveli And Daman And Diu	5611	4988	889
Tripura	25449	24176	950
Uttarakhand	80555	75620	939
Uttar Pradesh	1994662	1862125	934
West Bengal	645396	609011	944

Annexure 3.7

State/UT-wise number of reported children admitted in NRC and discharged with target weight gain from the NRCs as reported in HMIS during 2021-22

State/UT	Number of children admitted in NRC	Number of children discharged with target weight gain from the NRCs
All India	**140088**	**82464**
Andaman & Nicobar Islands	0	0
Andhra Pradesh	11459	3435
Arunachal Pradesh	0	1
Assam	1894	1802
Bihar	3361	2434
Chandigarh	116	67
Chhattisgarh	12072	9134
Delhi	565	274
Goa	0	0
Gujarat	7184	3358
Haryana	1478	813
Himachal Pradesh	198	176
Jammu And Kashmir	884	529
Jharkhand	7345	6061
Karnataka	10793	6513
Kerala	198	145
Ladakh	28	27
Lakshadweep	0	0
Madhya Pradesh	42628	21763
Maharashtra	6828	2788
Manipur	3	3
Meghalaya	245	113
Mizoram	2	2
Nagaland	5	4
Odisha	7821	6770
Puducherry	0	3
Punjab	0	0
Rajasthan	7129	4164
Sikkim	0	0
Tamil Nadu	1507	1053
Telangana	1452	756
The Dadra And Nagar Haveli And Daman And Diu	28	2
Tripura	47	16
Uttarakhand	46	22
Uttar Pradesh	10062	6649
West Bengal	4710	3587

Annexure 3.8

State/UT-wise number of children screened, identified and management under RBSK as reported in HMIS during 2021-22

State/UT	Number of newborn screened for defects at birth (as per RBSK)	Total Children (6 month to 18years) screened	Number of children identified with Disease, Deficiency & Developmental delay	Number of Children Managed by Medical & Surgical Intervention
All India	**8143177**	**72036648**	**6211925**	**3490762**
Andaman & Nicobar Islands	0	2442	519	82
Andhra Pradesh	363827	22420	234768	176969
Arunachal Pradesh	8461	149682	12004	4177
Assam	366265	2846867	130373	122095
Bihar	58127	238710	3202	115
Chandigarh	17601	45421	15004	24860
Chhattisgarh	177141	1411129	164396	84311
Delhi		0	0	0
Goa	12442	0	0	0
Gujarat	773112	7294827	1455314	650312
Haryana	284643	1225968	442357	212285
Himachal Pradesh	44006	16277	1253	218
Jammu And Kashmir	56657	336878	18176	18204
Jharkhand	329983	886401	82962	30703
Karnataka	129807	6436322	475242	140801
Kerala	124771	373296	36685	13343
Ladakh	1341	11861	7	107
Lakshadweep	0	0	0	0
Madhya Pradesh	759274	6517928	668662	538418
Maharashtra	288072	18322080	709878	492942
Manipur	2533	5519	190	118
Meghalaya	74200	513962	30220	14155
Mizoram	2523	23965	1294	293
Nagaland	999	55415	14636	1739
Odisha	417588	3795817	415499	291606
Puducherry	5888	2957	420	333
Punjab	157366	706257	34340	8086
Rajasthan	31016	3451768	203397	136387
Sikkim	2105	22630	2079	57
Tamil Nadu	551467	4917596	254774	130647
Telangana	134919	1666860	86960	47475
The Dadra And Nagar Haveli And Daman And Diu	8431	104021	3073	712
Tripura	36978	424041	17521	11849
Uttarakhand	131242	1168216	68493	10020
Uttar Pradesh	1853899	6972730	336520	198956
West Bengal	936493	2066385	291707	128387

Annexure 3.9

State/UT-wise number of infant deaths cause -wise as reported in HMIS during 2021-22

State/UT	Infant deaths within 24 hours (1 to 23 hours) of birth	Infant Deaths up to 4 weeks due to Sepsis	Infant Deaths up to 4 weeks due to Asphyxia	Infant Deaths up to 4 weeks due to Other causes	Total Infant Deaths upto 4 weeks	Number of Infant Deaths (1 -12 months) due to Pneumonia	Number of Infant Deaths (1 - 12 months) due to Diarrhoea	Number of Infant Deaths (1 - 12 months) due to Fever related	Number of Infant Deaths (1 - 12 months) due to Measles	Number of Infant Deaths (1 -12 months) due to Others	Total Infant Deaths (1 - 12 months)
All India	**39019**	**18894**	**25804**	**72941**	**117639**	**7983**	**1185**	**2672**	**133**	**38492**	**50465**
Andaman & Nicobar Islands	11	10	6	53	69	2	0	1	0	9	12
Andhra Pradesh	1521	745	1050	2634	4429	304	21	90	0	1194	1609
Arunachal Pradesh	32	3	13	16	32	6	0	3	0	17	26
Assam	1688	723	2341	2897	5961	571	29	308	6	2002	2916
Bihar	1425	191	532	1964	2687	99	20	66	12	648	845
Chandigarh	195	81	52	250	383	6	3	1	2	509	521
Chhattisgarh	918	535	927	2319	3781	542	19	96	8	1960	2625
Delhi	679	801	626	1096	2523	221	52	64	0	623	960
Goa	20	26	14	37	77	3	0	1	0	19	23
Gujarat	2334	1369	1818	5816	9003	359	204	128	9	2172	2872
Haryana	2267	721	598	3463	4782	276	125	188	18	2610	3217
Himachal Pradesh	274	103	80	458	641	25	7	11	1	175	219
Jammu And Kashmir	153	194	214	693	1101	52	10	39	0	201	302
Jharkhand	1157	163	201	1403	1767	84	12	61	3	640	800
Karnataka	1098	1098	1269	2828	5195	381	42	83	22	1600	2128
Kerala	243	84	81	829	994	38	0	16	0	405	459
Ladakh	7	12	12	21	45	1	2	2	0	19	24
Lakshadweep	4	0	1	1	2	0	0	0	0	2	2
Madhya Pradesh	5599	2035	3246	11223	16504	1035	120	326	36	5049	6566
Maharashtra	2676	1808	1790	5262	8860	312	45	185	0	2754	3296
Manipur	25	4	22	27	53	12	2	1	0	19	34
Meghalaya	426	159	201	632	992	560	57	194	0	835	1646
Mizoram	71	39	21	107	167	66	5	21	1	110	203
Nagaland	31	17	12	35	64	7	0	6	0	28	41
Odisha	1621	780	1681	3596	6057	861	8	87	0	2585	3541

Puducherry	47	84	23	97	204	8	0	1	0	39	48
Punjab	361	73	72	687	832	46	28	36	2	461	573
Rajasthan	4111	2423	2240	11162	15825	568	116	309	9	5144	6146
Sikkim	16	1	2	12	15	3	0	2	0	44	49
Tamil Nadu	1251	924	1363	2450	4737	153	88	12	0	1698	1951
Telangana	410	77	165	740	982	168	21	23	0	567	779
The Dadra And Nagar Haveli And Daman And Diu	13	11	24	76	111	2	0	0	0	48	50
Tripura	188	72	131	152	355	62	1	7	0	347	417
Uttarakhand	240	27	37	468	532	43	16	17	1	202	279
Uttar Pradesh	3005	699	1556	3194	5449	216	109	154	0	927	1406
West Bengal	4902	2802	3383	6243	12428	891	23	133	3	2830	3880

Annexure 3.10
State/UT-wise number of infant and child deaths as reported in HMIS during 2021-22

State/UT	Total Infant Deaths	Total Child Deaths under 5 age group
All India	**207123**	**182352**
Andaman & Nicobar Islands	92	87
Andhra Pradesh	7559	6674
Arunachal Pradesh	90	78
Assam	10565	8469
Bihar	4957	4891
Chandigarh	1099	834
Chhattisgarh	7324	5678
Delhi	4162	3724
Goa	120	103
Gujarat	14209	12820
Haryana	10266	8386
Himachal Pradesh	1134	1047
Jammu And Kashmir	1556	1376
Jharkhand	3724	3486
Karnataka	8421	7245
Kerala	1696	1423
Ladakh	76	53
Lakshadweep	8	7
Madhya Pradesh	28669	26228
Maharashtra	14832	13652
Manipur	112	101
Meghalaya	3064	1923
Mizoram	441	301
Nagaland	136	114
Odisha	11219	9165
Puducherry	299	302
Punjab	1766	1474
Rajasthan	26082	23263
Sikkim	80	39
Tamil Nadu	7939	6696
Telangana	2171	1694
The Dadra And Nagar Haveli And Daman And Diu	174	154
Tripura	960	599
Uttarakhand	1051	916
Uttar Pradesh	9860	9484
West Bengal	21210	19866

CHAPTER 4
IMMUNIZATION

Introduction

Immunization is the process whereby a person is made immune or resistant to an infectious disease, typically by the administration of a vaccine. Vaccines are substances that stimulate the body's own immune system to protect the person against subsequent infection or disease. Ministry of Health and Family Welfare, Government of India provides several vaccines to infants, children and pregnant women through the Universal Immunization Programme.

The Ministry of Health and Family Welfare, Government of India introduced Immunization Programme in India in 1978 as 'Expanded Programme of Immunization' (EPI). It was further renamed as Universal Immunization Programme in 1985 when its reach was expanded beyond urban areas included children upto 5 years and pregnant women. In 1992, it became part of Child Survival and Safe Motherhood Programme and in 1997, it was included in the ambit of National Reproductive and Child Health Programme.

Since the launch of National Rural Health Mission in 2005, Universal Immunization Programme has been an integral part of it. Universal Immunization Programme (UIP) of India is one of the largest public health programmes of the world implemented since 1985. It targets to cover around 2.67 crore newborns and 2.9 crore pregnant women annually. It is largely responsible for reduction of vaccine preventable under-5 mortality rate and maternal mortality (Source: NHM portal). The two major milestones of UIP have been achieved, one is elimination of polio in 2014 and 2nd is elimination of maternal and neonatal tetanus in 2015.

Under UIP, immunization is providing free of cost against 12 vaccine preventable diseases:

Nationally against 11 diseases - Diphtheria, Pertussis, Tetanus, Polio, Measles, Rubella, severe form of Childhood Tuberculosis, Rotavirus, diarrhea, Hepatitis B and Meningitis & Pneumonia caused by Hemophilus Influenza type B and Pneumococcal Pneumonia.

Sub-nationally against 1 disease - Japanese Encephalitis JE vaccine is provided only in endemic districts (Source: NHM portal).

A child is said to be fully immunized if child receives all due vaccine (BCG, three doses of Oral Polio Vaccine, three doses of Pentavalent vaccine and one dose of Measles) as per national immunization schedule within 1st year age of child.

The details of National Immunization Schedule under UIP is given in Table 4.1.

Table 4.1: National Immunization Schedule

Age	Vaccination schedule after Td introduction
At birth	BCG, OPV-zero dose, Hep B-birth dose
6 weeks	OPV-1, Pentavalent-1, Rota-1, fIPV-1, PCV-1
10 weeks	OPV-2, Pentavalent-2, Rota-2
14 weeks	OPV-3, Pentavalent-3, Rota-3, fIPV-2, PCV-2
9 months	Measles-1/MR-1, Vit A, JE-1*, PCV-B
16-24 months	DPT first booster dose, OPV-booster dose, Measles-2/ MR-2, JE-2*
5-6 years	DPT second booster dose
10 & 16 years	Td
For pregnant woman	Td-1 : early in pregnancy Td-2 : 4 weeks after Td-1 Td-B: if pregnancy occur within 3 years of last pregnancy and 2 Td doses were received

Note * JE endemic States/Districts

Government of India has expanded the basket of vaccines to include six new vaccines - Tetanus and adult Diphtheria (Td), Inactivated Poliovirus Vaccine (IPV) and Measles Rubella vaccine (MR), Rotavirus vaccine and Pneumococcal Conjugate Vaccine (PCV) at the national level and; Japanese encephalitis vaccine for adults at the subnational level.

Inactivated Polio Vaccine (IPV), introduced in November 2015 as part of Global Polio end-game strategy, to mitigate the risk associated with tOPV to bOPV switch.

Rotavirus vaccine (RVV): RVV introduced in March 2016 to reduce mortality and morbidity caused by Rotavirus diarrhoea.

Measles Rubella (MR) vaccine was introduced through campaign in 2017 targeting children in the age group of 9 months to 15 years (covering ⅓ of the total population of the country) followed by 2 doses in routine immunization at 9-12 months and 16-24 months as part of goal of measles and rubella elimination by December 2023. Pneumococcal Conjugate Vaccine

(PCV): PCV launched in May 2017 for reducing Infant mortality and morbidity caused by pneumococcal pneumonia.

Tetanus & adult Diphtheria (Td) vaccine: Recommended by National Technical Advisory Group on Immunization (NTAGI) in 2016 due to epidemiological shift in age-group of diphtheria cases to school going children and adults. Thereafter, Td vaccine has replaced 2 doses of TT or single booster dose of TT given to pregnant woman and booster doses at 10 and 16 years of age.

Adult Japanese Encephalitis (JE) Vaccine: Japanese National Vector Borne Disease Control Programme (NVBDCP) had identified 38 Districts from Assam, Uttar Pradesh and West Bengal with high burden of JE in adult age group for Adult JE vaccination campaign.

With the aim to increase immunization coverage to 90%, the flagship program Mission Indradhanush (MI) was launched in December 2014, followed by the Intensified Mission Indradhanush (IMI) in October 2017 for reaching the dropout and left-out children for immunization in pockets of low immunization coverage. With special focus towards urban areas. As on May 2022, eleven phases of Mission Indradhanush have been completed covering 701 districts across the country.

In the National MIS portal of the Ministry of Health and Family Welfare, Government of India called *'Health Management Information System (HMIS)',* captures service delivery information reported primarily by public health facilities across country on monthly basis.

There are around 50 data items related to Immunization services provided by various health facilities captured in Health Management Information System (HMIS). The various vaccines received by infants 0 to 11 months includes BCG, DPT1, DPT2, DPT3, Pentavalent1, Pentavalent2, Pentavalent3, OPV-0 (Birth dose)OPV1, OPV2, OPV3, Hepatitis-B0 (Birth Dose), Hepatitis-B1, Hepatitis-B2, Hepatitis-B3, Inactivated Polio Vaccine 1 (IPV 1), Inactivated Polio Vaccine 2 (IPV 2), Rotavirus 1, Rotavirus 2, Rotavirus 3 and Pneumococcal conjugate vaccine PCV1, PCV2; Various vaccines received by Children 9 - 11 months which include Measles & Rubella (MR) – 1st Dose, Measles 1st dose, JE 1st dose and PCV Booster.

There are other vaccines related data items captured in HMIS which includes vaccines given to Children of more than 12 months- Measles & Rubella (MR) – 2nd Dose, Measles 2nd dose, JE 2nd dose, DPT 1st booster, OPV booster ; Children of more than 23 months- DPT 2nd booster, Td 10 and 16 at 10 and 16 years of age respectively; Adverse Event Following Immunization (AEFI), Number of Immunization sessions and Children received Vitamin A Doses between 9

months and 5 years, The analysis of some of the vaccines and immunizations coverage is provided in subsequent sections.

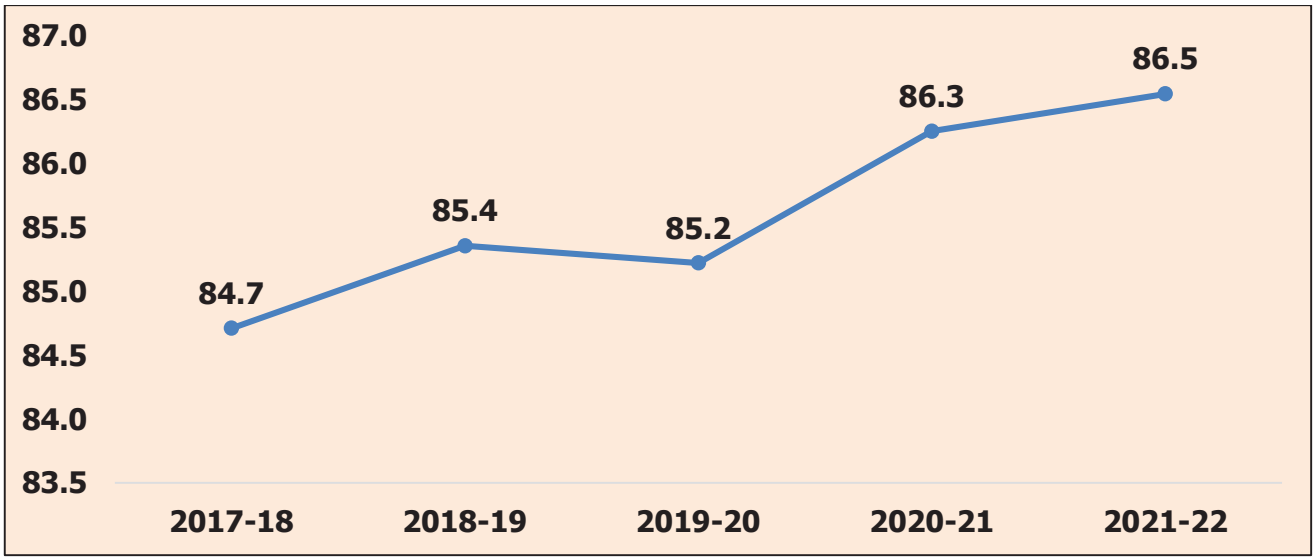
4. a. Immunization of Pregnant women/ mother against Tetanus and Diphtheria:

The use of Td is recommended during pregnancy to protect against maternal and neonatal tetanus & diphtheria during prenatal care. Vaccination during pregnancy also serves to boost immunity and increase the duration of protection to those pregnant women who had not received the full set of recommended booster doses.

Tetanus Toxoid (TT) vaccine has been replaced with Tetanus and adult diphtheria (Td) vaccine. Diseases like Tetanus and diphtheria can lead to hospitalizations or even cause death. The use of Td rather TT is recommended during pregnancy to protect against maternal and neonatal tetanus & diphtheria during prenatal care.

A pregnant woman is said to be fully immunized for Td, if she gets Td during her ANC visits (Td-1: early in pregnancy, Td-2: 4 weeks after Td-1 and Td-Booster: if pregnancy occur within 3 years). It is expected that programme should aim to achieve at least 90 percent Pregnant Women fully immunization for Td target in coming years. The details of Percentage of Pregnant Women fully immunized for T/Td at national level is given at Fig 4.1.

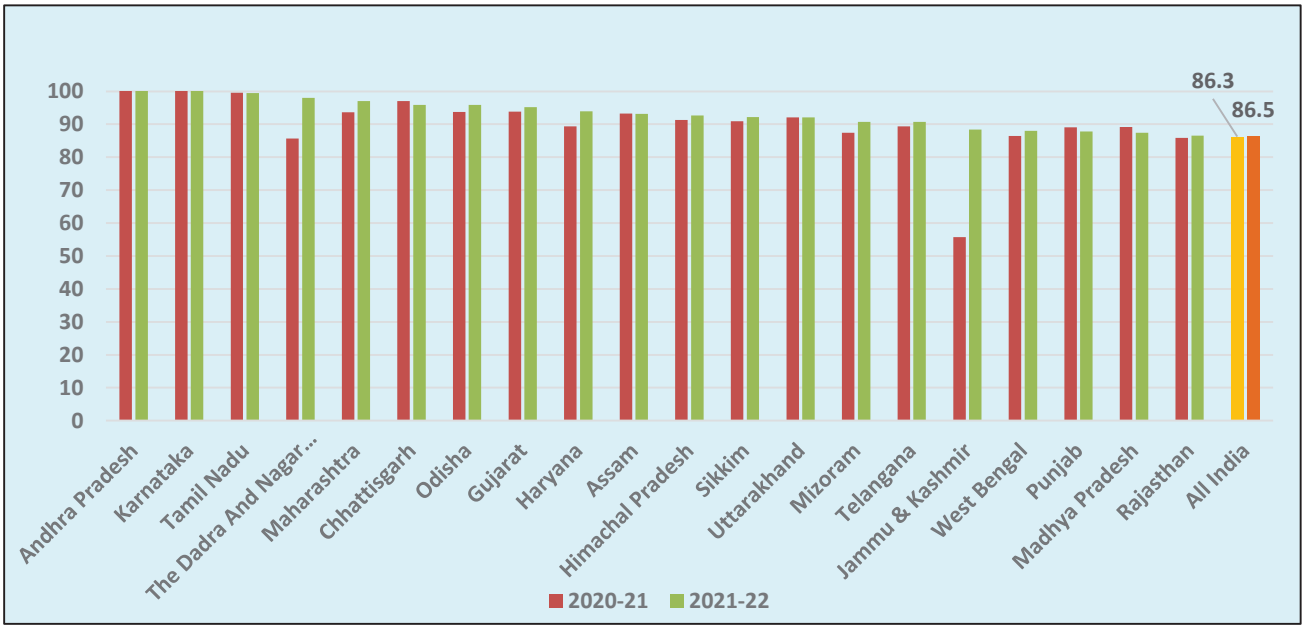
Figure 4.1: Trend of Percentage of Pregnant Women fully immunized for TT/Td at National during 2017-18 to 2021-22



At All India level, percentage pregnant women registered for ANC fully immunized for Td during 2020-21 (86.3%) and 2021-22(86.5%) was almost same (Fig 4.2). There are twenty States, which have reported above the national average during 2021-22. The top five States are following Andhra Pradesh (100%), Karnataka (100%), Tamil Nadu (99%), The Dadra and

Nagar Haveli and Daman and Diu (98%) and Maharashtra (97%). The Details of Percentage of Pregnant Women fully immunized for Td during 2020-21 to 2021-22 is provided in Fig 4.2.

Figure 4.2: Percentage Pregnant Women fully immunized for Td during 2020-21 to 2021-22 and States having greater than national average during 2021-22 (States/UTs with more than national avg. in 2021-22 considered)



States/UTs-wise number and percentage of Pregnant Women fully immunized for TT/Td during 2020-21 and 2021-22 is provided at Annexure-4.1.

4.2 Full Immunization of Children

A Child aged between 9 and 11 months is said to be fully immunized if they receive one dose of BCG, three doses of Pentavalent, three doses of Oral Polio Vaccines (OPV), and one dose of MR vaccine between 9-11 months of their birth.

The full immunization coverage is measured as proportion of number of children provided all due vaccines as per immunization schedule within 1st year of age against the estimated infants (0-1 year).

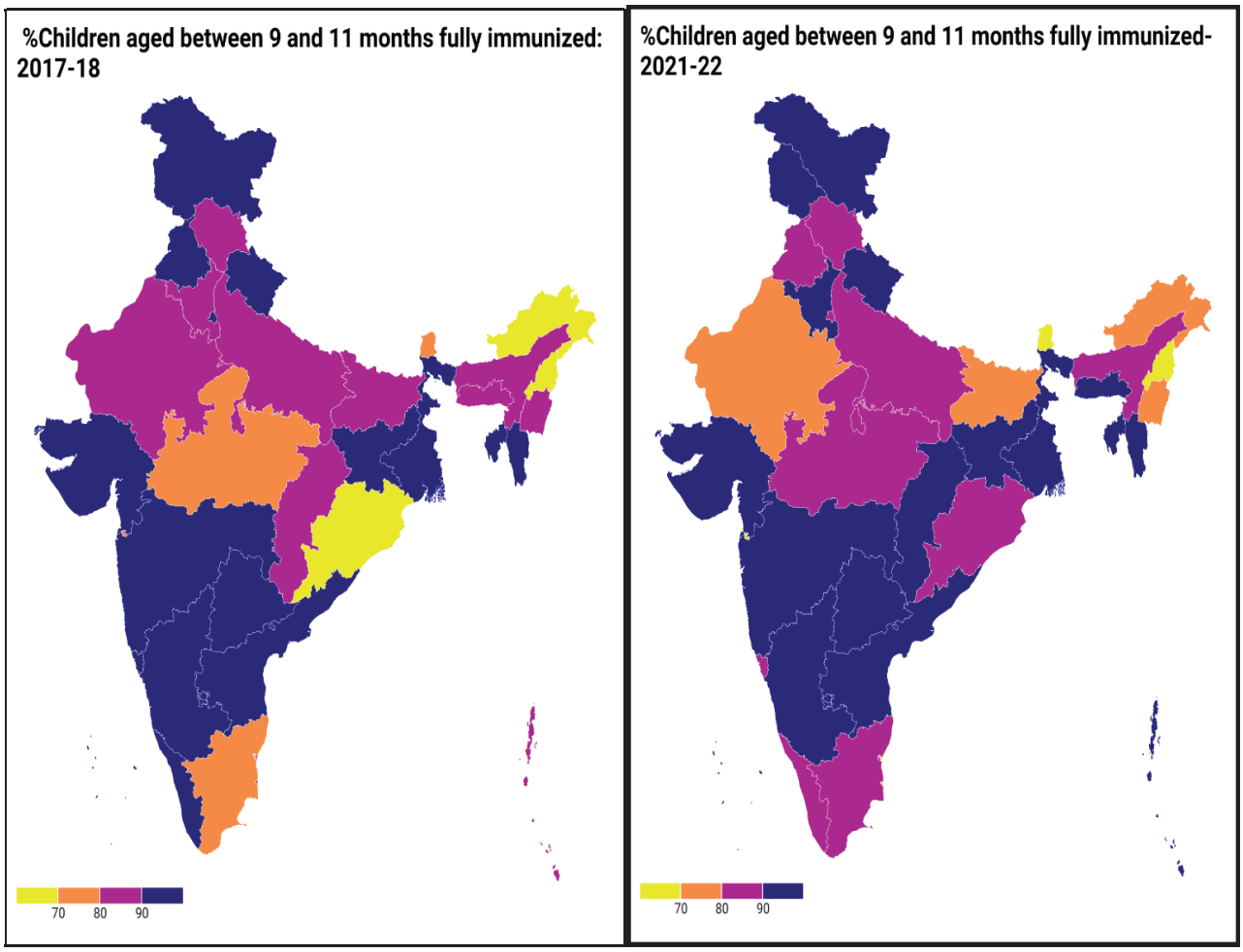
In HMIS, data element "Children aged between 9 and 11 months fully immunized- Male and Children aged between 9 and 11 months fully immunized- Female" are captured. The sum of Children aged between 9 and 11 months fully immunized- Male and Children aged between 9 and 11 months fully immunized- Female" is considered as total no. of children 9 to 11 months fully immunized.

4.2.i Full Immunization of Children (2017-18 vs. 2021-22):

While comparing the Childhood immunization in last 5 years from base year 2017-18 to 2021-22, it is observed that full immunization of children has been consolidated further and increased by around 3 percent in last five years. At the national level, Children aged between 9 and 11 months fully immunized was around 91%* in 2021-22 while same was around 88% in 2017-18. There were 17 States in 2017-18, which have reported 90%, and above with full immunization of Children. Same number of States have reported 90%, and above in 2021-22. Some of the selected five States, which have reported 90% and above in 2021-22 are Gujarat, Jammu and Kashmir, Telangana, Lakshadweep, and Andhra Pradesh.

The detail Comparative spatial analysis have been done. There are eight States/UTs, which included Bihar, Arunachal Pradesh, Rajasthan, Manipur, Sikkim, Puducherry and Nagaland and Dadra and Nagar Haveli and Daman and Diu, which have reported less than 80% full immunization of children in 2021-22 as compared to eight States/UTs (Madhya Pradesh, Tamil Nadu, Sikkim, Dadra & Nagar Haveli, Arunachal Pradesh, Odisha, Nagaland and Daman & Diu) in 2017-18. Fig. 4.3 shows Comparative maps of percentage of children aged between 9 and 11 months fully immunized during 2017-18 and 2021-22.

Figure 4.3: Comparative maps of Percentage of Children aged between 9 and 11 months fully immunized during 2017-18 and 2021-22



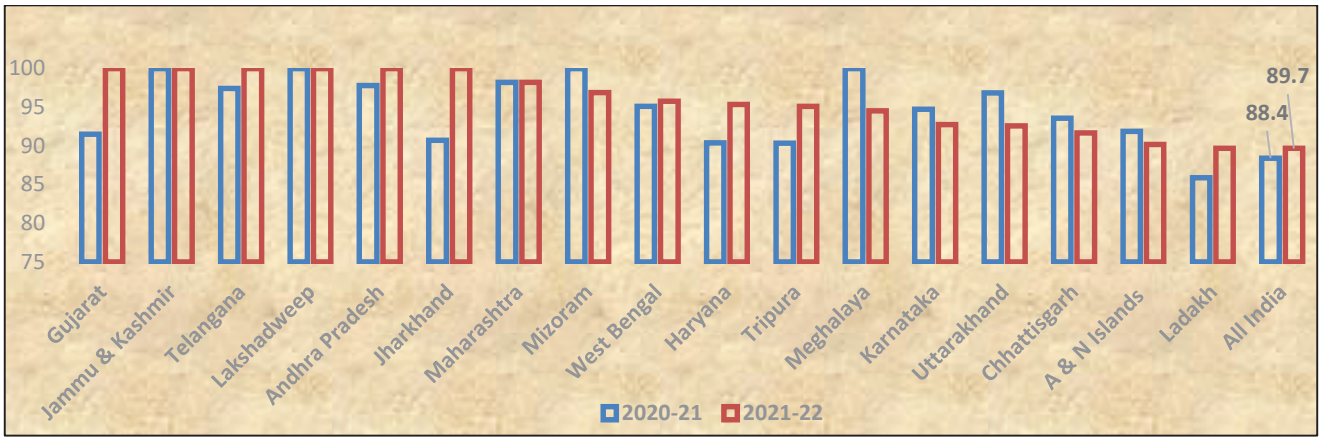
4.2. ii Full Immunization of Children (2020-21 vs. 2021-22):

While comparing the full immunization of children in 2021-22 with 2020-21, it is observed that during the Covid year (2020-21), Child Immunization at national level was 88.4%, which has increased to 91% in 2021-22.

There were nineteen States/UTs, which reported more than 90 percent Children fully immunized in 2020-21. In comparison to that in 2021-22, there are seventeen States/UTs, which have reported more than 90% full immunization of Children in 2021-22. Some of selected five States/UTs are following Andhra Pradesh, Gujarat, Jammu & Kashmir, Jharkhand, and Maharashtra.

The comparative performance of percentage full immunization of Children aged between 9 and 11 months greater than national average is presented in Fig 4.4.

Figure 4.4: States/UTs-wise Percentage of Children aged between 9 and 11 months fully immunized in 2020-21 and 2021-22 and States having greater than national average during 2021-22 (States/UTs with more than national avg. in 2021-22 considered):



States/UTs-wise number and percentage of Children 9 to 11 months fully immunized during 2020-21 and 2021-22 is provided at Annexure-4.2.

4.2.iii Measles and Rubella:

Measles is a highly infectious disease causing illness and death due to complications in the form of diarrhea, pneumonia or brain infection mostly among the children less than five years of age. Rubella is a mild disease but when infection occurs in early pregnancy, it has the potential to cause spontaneous abortions, fetal deaths, stillbirths and serious congenital defects in the child causing lifelong disabilities.

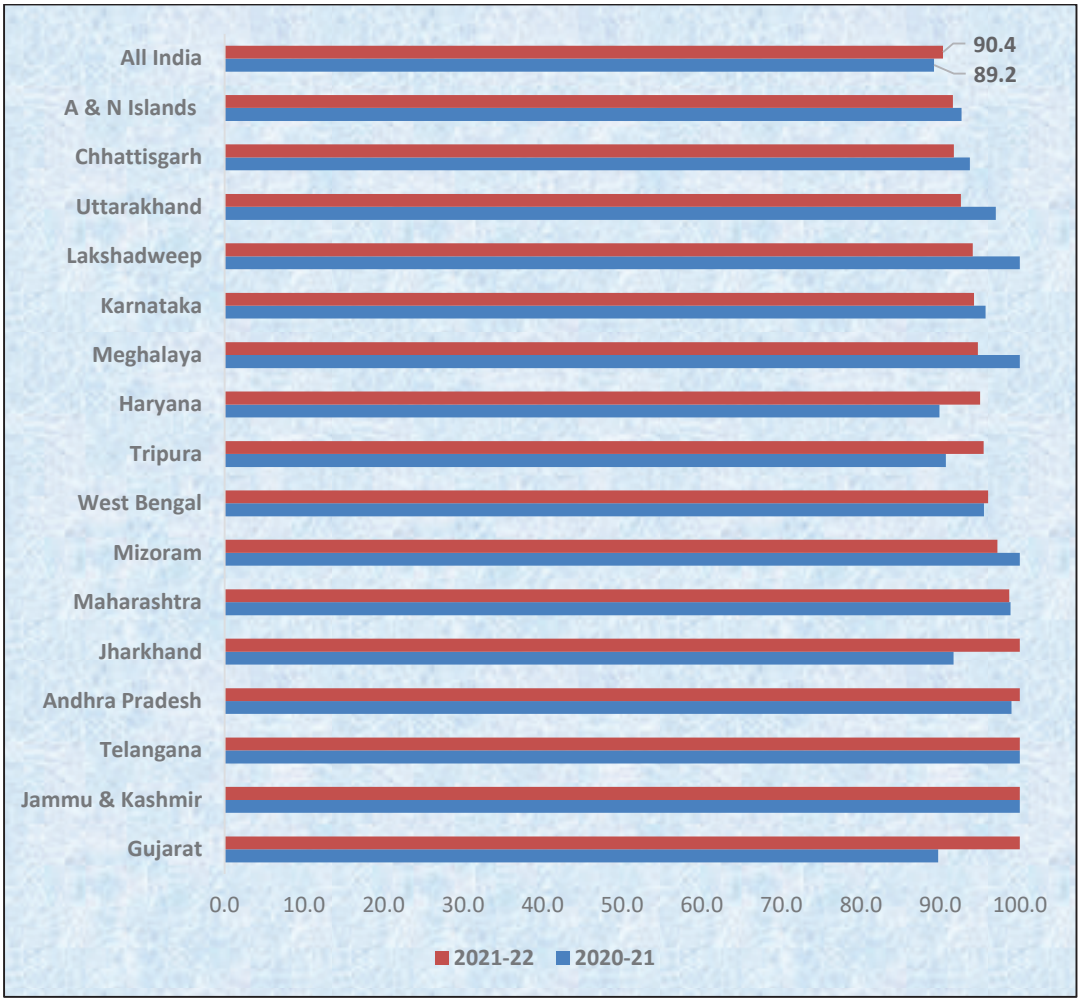
Measles Rubella vaccine is given for preventing both measles and rubella disease in the child. The first dose of Measles-Rubella vaccine needs to be administered, according to the National Immunization Schedule, after the completion of 9 months until 12 months of age while during 16-24 months the second dose shall be given.

HMIS captures children given Measles 1st dose and children given MR 1st dose (9-12 months), measles 2nd dose and MR 2nd dose (16-24 months Measles & Rubella (MR) - 1st Dose is provided between 9 to 11 months of age. As per HMIS reported data, there were 89.2% children in 2020-21 and 90.4 % children in 2021-22 were given Measles & Rubella (MR) - 1st Dose and Measles 1st dose at the national level.

There are 17 States/UTs which have reported 90% or above Child immunization (9-11months) - Measles & Rubella (MR)- 1st Dose and Measles 1st dose in 2021-22 while, there were 19 States have reported 90% or above Child immunization (9-11months) - Measles & Rubella

(MR)- 1st Dose and Measles 1st dose in 2020-21. State/ UTs wise coverage of Measles/ MR vaccination greater than national average is given in Fig 4.5.

Figure 4.5: Child immunization (9-11months) - Measles & Rubella (MR) - 1st Dose and Measles 1st dose during 2020-21 and 2021-22 and States having greater than national average during 2021-22 (States/UTs with more than national avg. in 2021-22 considered):



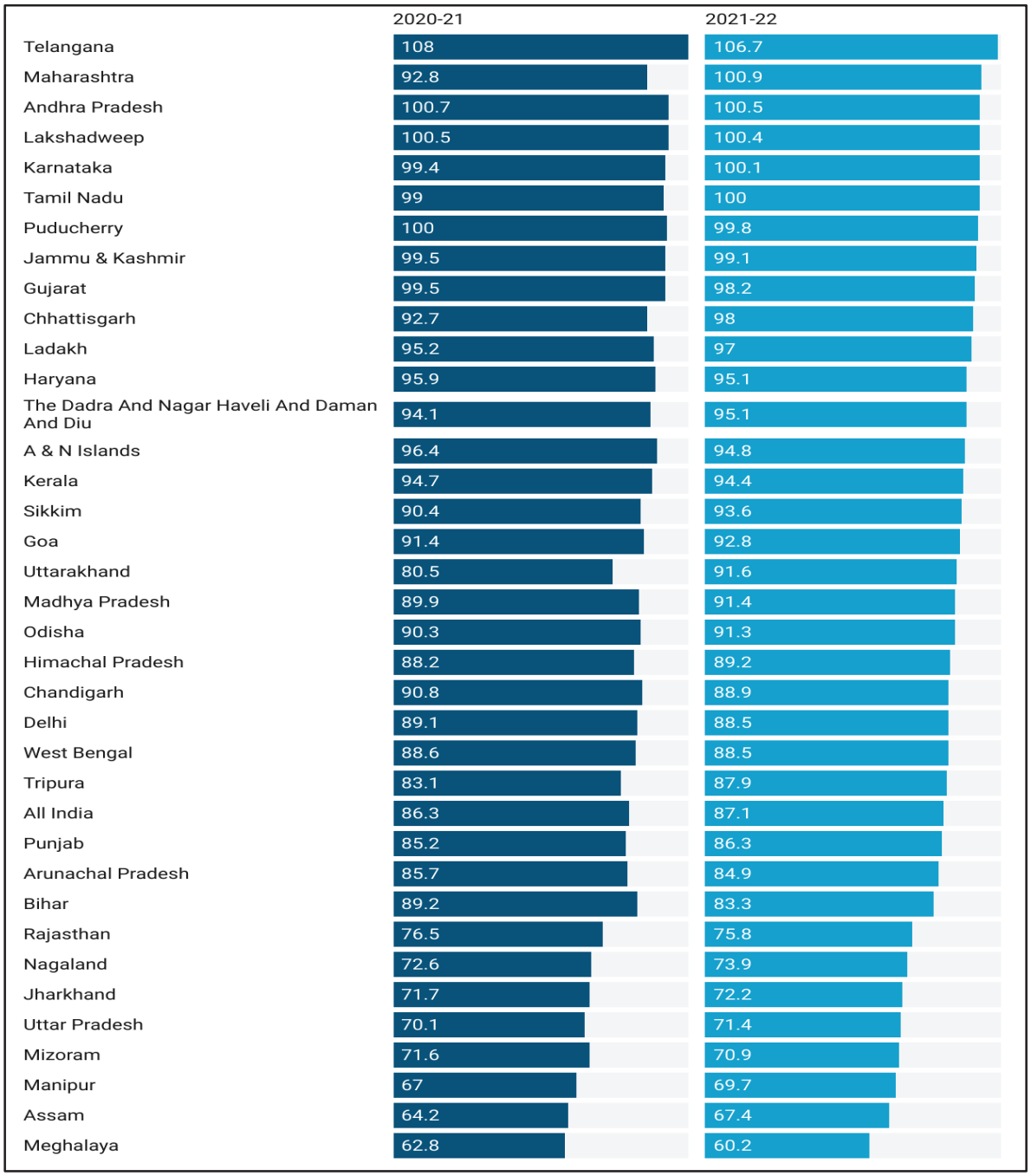
States/UTs-wise number and percentage of Children 9 to 11 months have received Measles & Rubella (MR) - 1st Dose and Measles 1st dose during 2020-21 and 2021-22 is provided at Annexure-4.3.

4.2. iv OPV-0 and Hepatitis-B Birth Dose:

Oral Polio Vaccine (OPV-0) Birth dose is made from live-attenuated Polioviruses. The vaccine is given as two drops into the child's mouth. OPV-0 gives protection against the two types of Polioviruses (types 1, and 3) that cause Poliomyelitis (Polio) — a disease of the brain and spinal cord.

At All India level, there were 87.1 percent of Oral Polio Vaccine (OPV-0) Birth dose in 2021-22 as compared to 86.3 percent of Oral Polio Vaccine (OPV-0) Birth dose given in 2020-21. There are 20 States/UTs, which have reported more than 90 percent Oral Polio Vaccine (OPV-0) Birth dose in 2021-22 while there were 19 States/UTs during 2020-21 which have reported more than 90 percent OPV-0 Birth dose. The details of States/UTs-wise Percent of Child immunization - OPV 0 (Birth Dose) is provided at Fig.4.6.

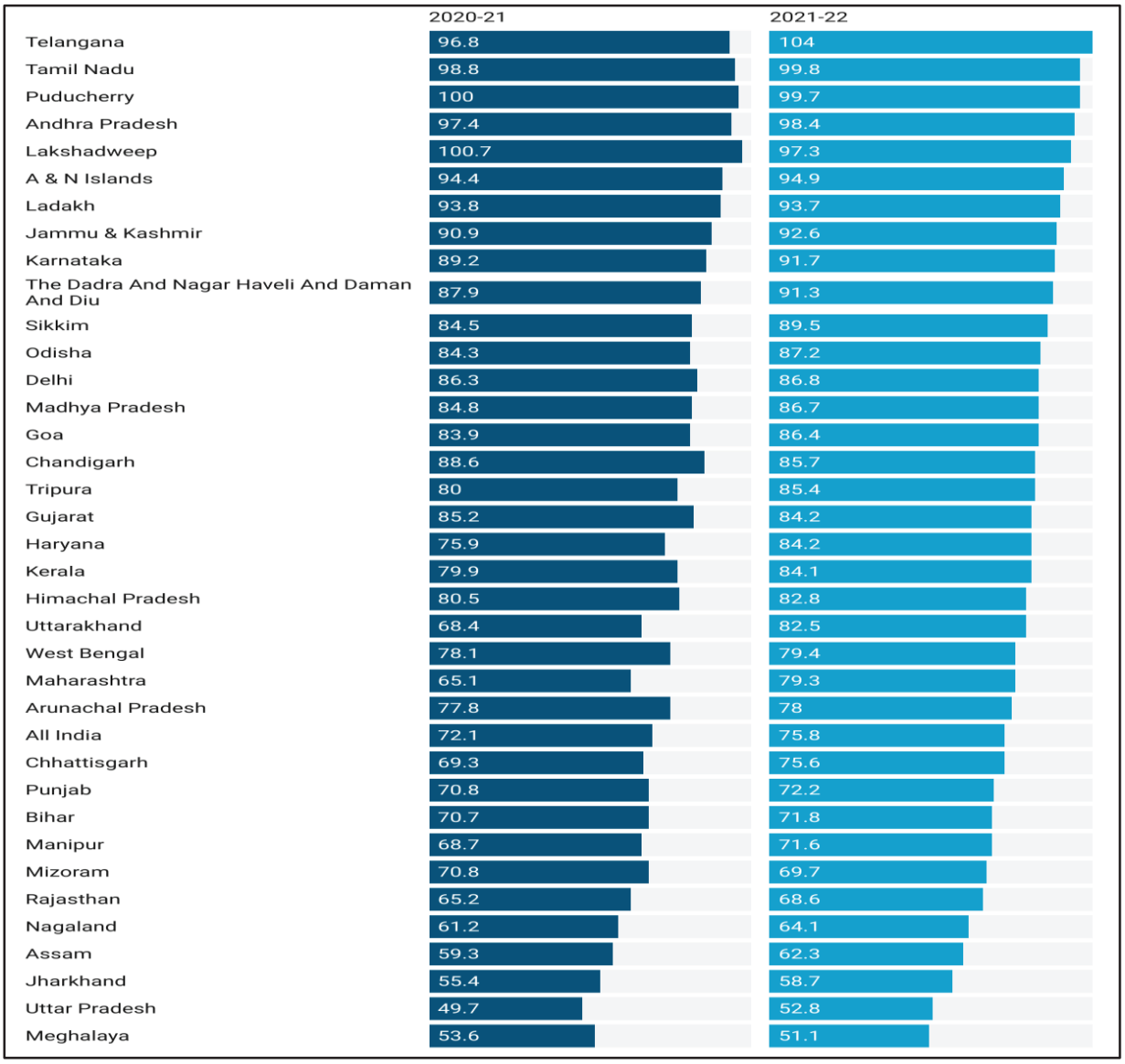
Figure 4.6: States/UT-wise Percent of Child immunization - OPV 0 (Birth Dose) during 2020-21 and 2021-22



Hepatitis-B Birth Dose refers to the dose given to the children within 24 hours of their birth. A child vaccinated with Hep-B after more than 24 hours of birth is not considered to have received the birth dose. The birth dose of Hepatitis B vaccine is effective in preventing perinatal transmission of Hepatitis B only if given within the first 24 hours.

In 2020-21, percent of children received Hepatitis-B0 (Birth Dose) was 72.1 percent while in 2021-22, it was increased to 75.6 percent. There was eight States/UTs which have reported more than 90 percent children received Hepatitis-B0 (Birth Dose). Some of the States/UTs included Lakshadweep, Puducherry, Tamil Nadu, Andhra Pradesh and Telangana in 2020-21 and 2021-22. The details of States/UTs-wise Percent of Children received Hepatitis-B0 (Birth Dose) in Fig 4.7. Hepatitis B against Institutional Delivery was reported as 77.86% as per HMIS.

Fig 4.7: States/UT-wise Percent of Child immunization - Hepatitis-B0 (Birth Dose)



States/UTs-wise number and percentage of Child Immunization - OPV 0 (Birth Dose), Hepatitis-B0 (Birth Dose) during 2020-21 and 2021-22 is provided at Annexure-4.4.

4.2. v Pentavalent vaccination

Pentavalent vaccine provides protection to a child from 5 life-threatening diseases – Diphtheria, Pertussis, Tetanus, Hepatitis B and Hib. DPT (Diphtheria + Pertussis + Tetanus) and Hep B are already part of routine immunization in India; Hib vaccine is a new addition. Together, the combination is called Pentavalent. Hib vaccine can prevent serious diseases caused by Haemophilus influenzae type b like pneumonia, meningitis, bacteremia, epiglottitis, septic arthritis etc. Giving pentavalent vaccine reduces the number of pricks to a child, and provides protection from all five diseases.

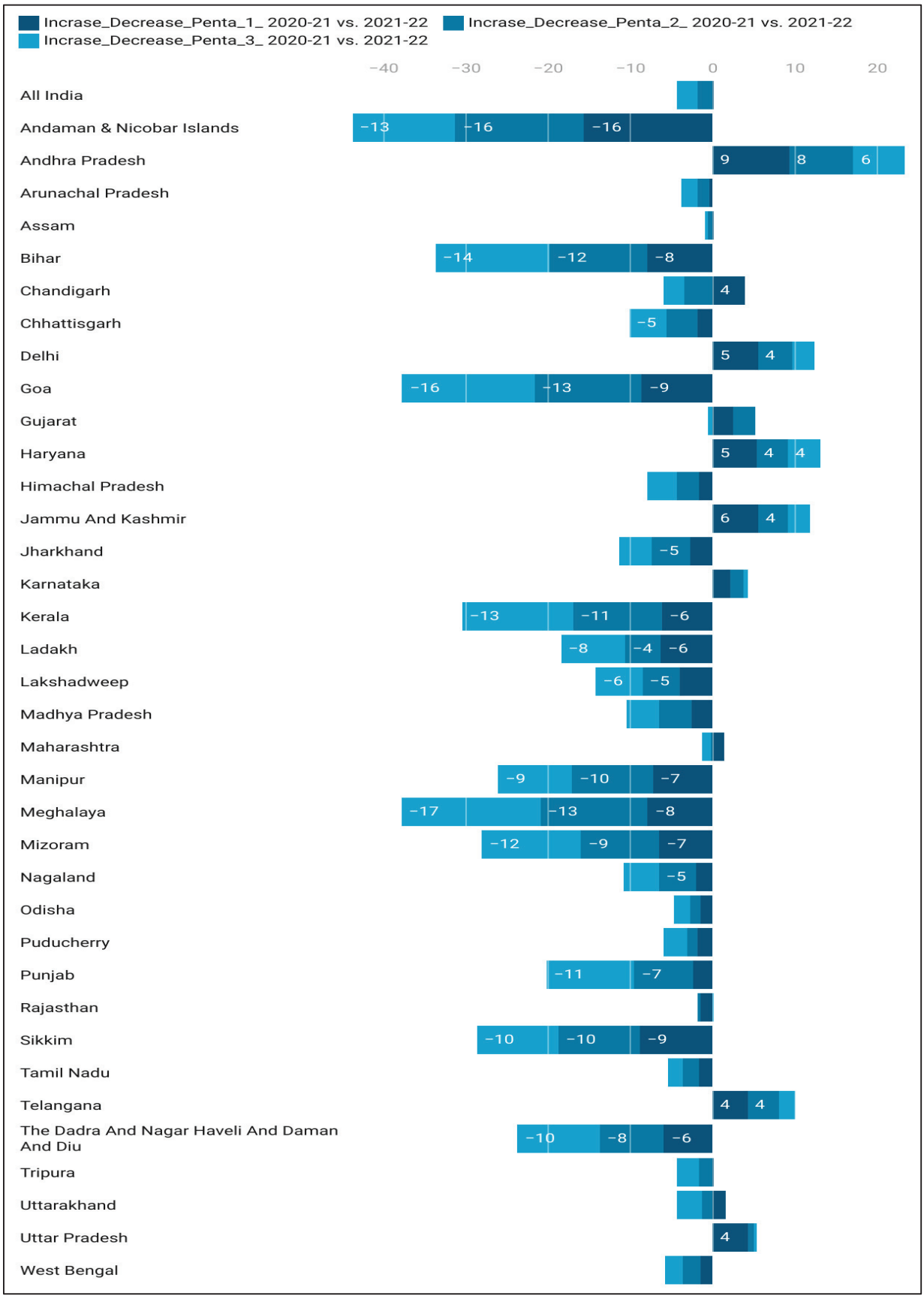
Globally, Haemophilus influenza type b (Hib) bacteria kills more than 370,000 children under five every year. Nearly 20% of these children may die as well. Hib vaccine can prevent over a third of pneumonia cases and 90% of Hib meningitis cases.

India introduced pentavalent vaccine initially in two states viz. Kerala and Tamil Nadu in December 2011.Gradually it was expanded to all States/UTs. At present, it has been expanded to all States/UTs.

HMIS Captures pentavalent 1, pentavalent 2 and pentavalent 3. An analysis of Increase or decrease in pentavalent respective dose comparison from 2020-21 w.r.t 2021-22 is done. Same is provided below:

It can be observed that during 2020-21 to 2021-22, there is an increase (0.07%) in Pentavalent 1 doses administration, while there is decrease (-1.17%) in Pentavalent 2 doses administration and there is decrease (-2.54%) in Pentavalent 3 doses administration. There are eight States/UTs which has shown increase in administration of respective doses of pentavalent vaccines. States/UTs-wise number and percentage of Child immunization – pentavalent 1, 2 and 3 doses during 2020-21 and 2021-22 is provided at Annexure-4.5

Figure 4.8: States/UT-wise percent increase/decline in Pentavalent 1, Pentavalent 2 and Pentavalent 3 doses from 2020-21 to 2021-22.



4.2. vi Rotavirus

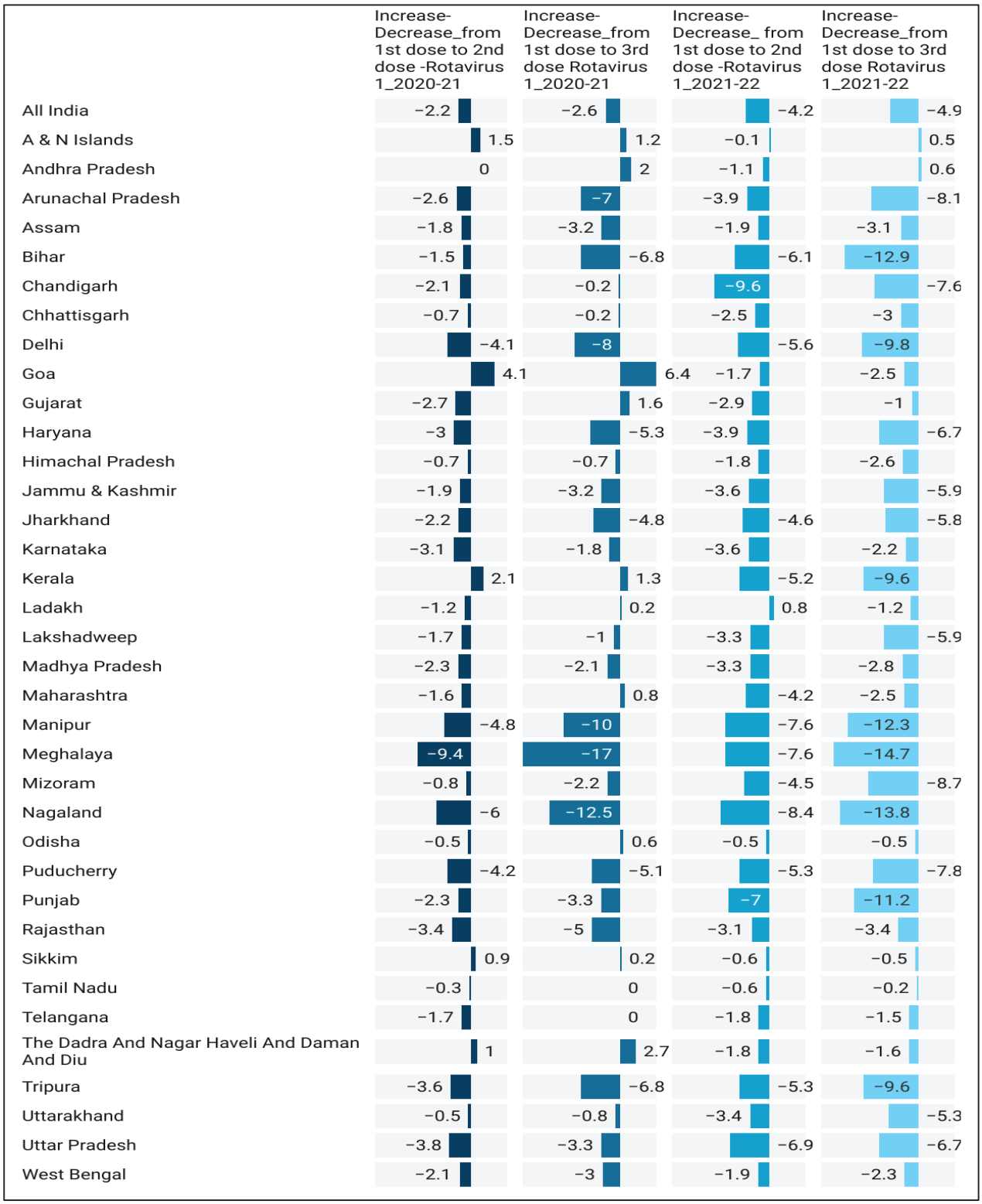
Rotaviruses are the most common cause of severe diarrhoeal disease in infants and young children worldwide. Rotaviruses is primarily transmitted by the faecal-oral route, rotaviruses affect the vast majority of children worldwide before the age of 3 years, and in most developing countries before the first birthday.

It is well known that diarrhoeal diseases are one of the most common causes for morbidity and mortality in children under 5 years of age. Among the diarrhoeal diseases, rotavirus infection is one of the most common causes for moderate to severe diarrhoea in children. The protection from Rotavirus infection is vaccination. In India, the Government of India has launched Rotavirus Vaccine (RVV) in 2016. In phased in manner it was rolled out across the country.

To see the dropout in administration of rotavirus 1 to rotavirus 2 and rotavirus 1 to rotavirus 3, during 2020-21 and 2021-22, a comparative analysis with charts is made. Based on the Fig 4.9, it is observed that highest drop out in Rota 1 to Rota 2, was observed in 3 northeastern States Manipur (-4.8%), Nagaland (-6%), Meghalaya (-9.4%). Similarly, highest dropout was observed in Rota 1 to Rota 3 in same three northeastern States Manipur (-10%), Nagaland (-12.5%), Meghalaya (-17%) in 2020-21.

During 2021-22, Rota 1 to Rota 2, highest dropout was observed in four States, Chandigarh (-9.6%), Manipur (-7.6%) and Nagaland (-8.4%). Rota 1 to Rota 3, these three States showed highest dropout, Bihar (-12.9%), Nagaland (-13.8%), Meghalaya (-14.7%) in 2021-22. The Comparative Decline from 1st dose to 2nd dose -Rotavirus and 1st dose to 3rd Dose during 2020-21 and 2021-22 is provided in Fig. 4.9.

Figure 4.9: States/UT-wise Comparative Decline from 1st dose to 2nd dose - Rotavirus and 1st dose to 3rd Dose during 2020-21 and 2021-22:



States/UTs-wise number and percentage of Child Immunization - OPV 0 (Birth Dose), Hepatitis-B0 (Birth Dose) during 2020-21 and 2021-22 is provided at Annexure-4.6.

4.3 AEFI

Adverse Events Following Immunization (AEFI) defined as any untoward medical occurrence following immunization and which does not necessarily have a causal relationship with the usage of vaccines. These events may include one or more unfavorable or unintended sign, symptoms or laboratory findings which raises concern among immunization program managers, policy makers, family of beneficiary and the community.

AEFIs can be common and minor (like fever, local pain and swelling), severe (like pain and swelling which spreads beyond the nearest joint or high-grade fever) and serious AEFIs (conditions requiring hospitalization or leading to death or disability).

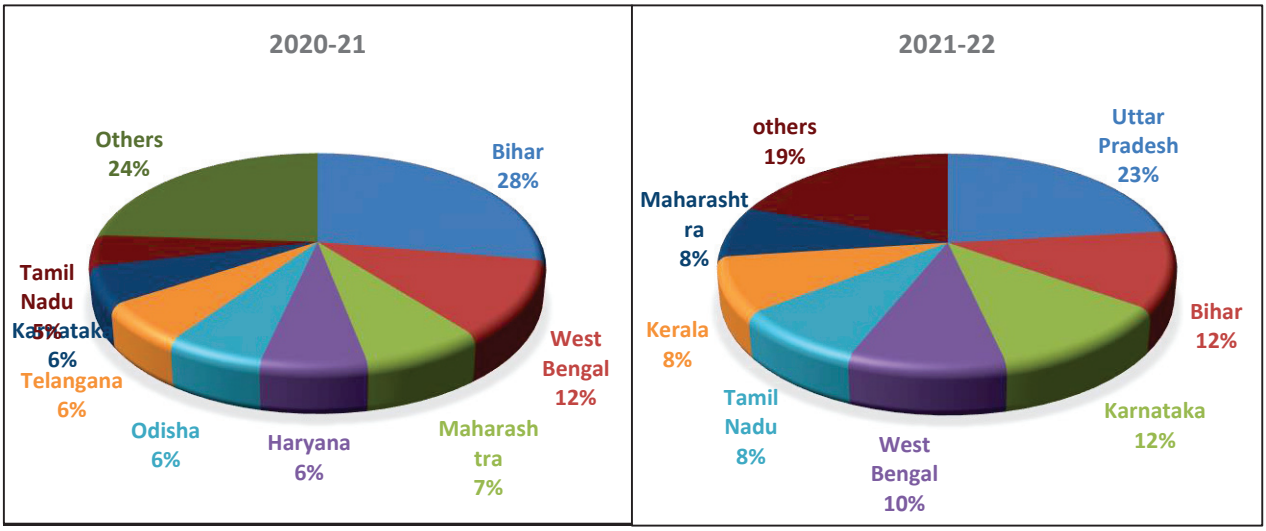
In HMIS, at present, three data items are captured for AEFI, Number of cases of AEFI – Abscess, Number of cases of AEFI – Death and Number of cases of AEFI – Others.

As per reported data in HMIS, there were 213 and 155 AEFI deaths were reported across India respectively in 2020-21 and 2021-22. There are 13 States that have reported nil AEFI deaths in 2020-21, while there are 19 State/UTs in 2021-22, which have reported nil in 2021-22.

Bihar 59(28%), West Bengal 25(12%), Maharashtra 16(7%) and other States/UTs which have reported at least one AEFI deaths was 51(24%) were highest AEFI deaths reported States/UTs in 2020-21 and while Uttar Pradesh 36(23%), Bihar and Karnataka 18(12%) each, West Bengal 15(10%) and other States/UTs which have reported at least one AEFI deaths was 30(19%) were highest AEFI deaths reported States/UTs during 2021-22.

The State/UT-wise distribution of AEFI deaths for those who have reported AEFI deaths in HMIS during 2020-21 and 2021-22 is provided in Fig.4.10

Figure 4.10: State/UT-wise Distribution of AEFI Deaths Reported in HMIS during 2020-21 and 2021-22.



States/UTs-wise number Distribution of AEFI Abscess, Deaths and Others Reported in HMIS during 2020-21 and 2021-22 is provided at Annexure-4.7.

Conclusion:

Based on the analysis of programme data of Immunization reported through HMIS, it can be said that, although, during the pandemic year 2020-21, there was slight dip; however, it has increased again during 2021-22. Over the last five-year period, Coverage of immunization in Children and Pregnant women has increased substantially from 2017-18 to 2021-22. AEFI related deaths due to Immunization has also declined in 2021-22 w.r.t 2020-21.

Annexure 4.1

States/UTs-wise number and percentage of Pregnant Women fully immunized for TT/Td during 2020-21 and 2021-22

States/UT's	Total number of pregnant women registered for ANC	TT2+TT BOOSTER	Total number of pregnant women registered for ANC	TT2+TT BOOSTER	%Pregnant Women fully immunized for TT/Td	
	2020-21	2020-21	2021-22	2021-22	2020-21	2021-22
All India	27591287	23798752	27642485	23924815	86.3	86.6
A & N Islands	4661	3875	4854	3764	83.1	77.5
Andhra Pradesh	898478	914660	869719	914644	101.8	105.2
Arunachal Pradesh	31633	17989	32301	19302	56.9	59.8
Assam	658145	613921	655116	610468	93.3	93.2
Bihar	3147963	2626403	3020869	2425851	83.4	80.3
Chandigarh	21179	16917	26004	17373	79.9	66.8
Chhattisgarh	613979	595962	641197	614870	97.1	95.9
Delhi	531298	191497	462620	232466	36.0	50.2
Goa	21949	10724	26017	12016	48.9	46.2
Gujarat	1275709	1197308	1315690	1252622	93.9	95.2
Haryana	558728	499090	551577	518340	89.3	94.0
Himachal Pradesh	112254	102441	106340	98530	91.3	92.7
Jammu & Kashmir	381587	212603	250766	221640	55.7	88.4
Jharkhand	946963	753413	972325	790758	79.6	81.3
Karnataka	1132856	1150123	1179184	1211359	101.5	102.7
Kerala	427749	354888	449205	370093	83.0	82.4
Ladakh	4083	3187	4470	3268	78.1	73.1
Lakshadweep	1288	1099	1184	984	85.3	83.1
Madhya Pradesh	1906200	1699476	1853873	1621428	89.2	87.5
Maharashtra	2048040	1917965	2057545	1996558	93.6	97.0
Manipur	45641	24151	46451	24533	52.9	52.8
Meghalaya	110762	74470	109015	71715	67.2	65.8
Mizoram	23887	20891	21485	19494	87.5	90.7
Nagaland	33105	13493	34272	15216	40.8	44.4
Odisha	714791	670263	703280	674283	93.8	95.9
Puducherry	70355	17836	70456	18257	25.4	25.9
Punjab	438766	390695	431241	378739	89.0	87.8
Rajasthan	1697020	1457822	1684215	1458237	85.9	86.6
Sikkim	7880	7166	7678	7081	90.9	92.2
Tamil Nadu	1005569	1000896	1009091	1003706	99.5	99.5
Telangana	711150	635647	746786	677525	89.4	90.7
The Dadra And Nagar Haveli And Daman And Diu	13068	11193	12650	12394	85.7	98.0
Tripura	63626	49313	60110	51151	77.5	85.1
Uttarakhand	203021	186990	192825	177596	92.1	92.1
Uttar Pradesh	6131032	4973815	6428813	4987723	81.1	77.6
West Bengal	1596872	1380570	1603261	1410831	86.5	88.0

Annexure 4.2

States/UTs-wise number and percentage of Children 9 to 11 months fully immunized during 2020-21 and 2021-22

States/UT's	Estimated no. of Children	Children aged between 9 and 11 months fully immunized	Estimated no. of Children	Children aged between 9 and 11 months fully immunized	%Children aged between 9 and 11 months fully immunized	
	2020-21	2020-21	2021-22	2021-22	2020-21	2021-22
All India	26451880	23389853	26024160	23342778	88.4	89.7
A & N Islands	4440	4081	4380	3950	91.9	90.2
Andhra Pradesh	818260	800368	820000	842404	97.8	102.7
Arunachal Pradesh	26310	19361	26310	19685	73.6	74.8
Assam	705940	598627	710420	606444	84.8	85.4
Bihar	3102760	2572523	3110280	2460943	82.9	79.1
Chandigarh	15780	13903	15590	13290	88.1	85.2
Chhattisgarh	632930	592432	632810	580206	93.6	91.7
Delhi	296190	249087	296240	254976	84.1	86.1
Goa	19150	18195	19070	16046	95.0	84.1
Gujarat	1328940	1216042	1001030	1208297	91.5	120.7
Haryana	577220	521717	564570	538351	90.4	95.4
Himachal Pradesh	113570	99721	112020	99013	87.8	88.4
Jammu & Kashmir	201290	218222	196620	220201	100.0	112.0
Jharkhand	838500	760841	758080	768636	90.7	101.4
Karnataka	1119620	1061061	1110040	1029581	94.8	92.8
Kerala	488790	459134	477360	403514	93.9	84.5
Ladakh	4460	3830	4350	3902	85.9	89.7
Lakshadweep	1030	1131	1000	1035	100.0	103.5
Madhya Pradesh	1968150	1738091	1989460	1761634	88.3	88.5
Maharashtra	1897050	1863620	1880070	1846806	98.2	98.2
Manipur	44530	33616	42800	31228	75.5	73.0
Meghalaya	69920	78353	74100	70050	112.1	94.5
Mizoram	17820	18746	17650	17101	100.0	96.9
Nagaland	28040	15897	27900	16019	56.7	57.4
Odisha	795890	685657	794200	696511	86.1	87.7
Puducherry	21100	13646	21000	13333	64.7	63.5
Punjab	438590	401642	433180	373157	91.6	86.1
Rajasthan	1822630	1339891	1824830	1362595	73.5	74.7
Sikkim	10890	7305	11160	7145	67.1	64.0
Tamil Nadu	1104140	916328	1070510	917197	83.0	85.7
Telangana	618260	602488	617000	643425	97.4	104.3
The Dadra And Nagar Haveli And Daman And Diu	22290	11511	22640	11457	51.6	50.6
Tripura	51240	46307	51250	48754	90.4	95.1
Uttarakhand	183610	177843	190810	176713	96.9	92.6
Uttar Pradesh	5626780	4862749	5658530	4902895	86.4	86.6
West Bengal	1435770	1365887	1436900	1376284	95.1	95.8

Annexure-4.3

States/UTs-wise number and percentage of Children 9 to 11 months have received Measles & Rubella (MR) - 1st Dose and Measles 1st dose during 2020-21 and 2021-22

States/UT's	Estimated no. of Children	Child immunization (9-11months) - Measles & Rubella (MR)- 1st Dose and Measles 1st dose	Estimated no. of Children	Child immunization (9-11months) - Measles & Rubella (MR)- 1st Dose and Measles 1st dose	% Child immunization (9-11months) - Measles & Rubella (MR)- 1st Dose and Measles 1st dose	
	2020-21	2020-21	2021-22	2021-22	2020-21	2021-22
All India	26451880	23600682	26024160	23517038	89.2	90.4
A & N Islands	4440	4116	4380	4012	92.7	91.6
Andhra Pradesh	818260	809718	820000	855088	99.0	104.3
Arunachal Pradesh	26310	19543	26310	19660	74.3	74.7
Assam	705940	607215	710420	607788	86.0	85.6
Bihar	3102760	2572599	3110280	2476286	82.9	79.6
Chandigarh	15780	13954	15590	13527	88.4	86.8
Chhattisgarh	632930	593215	632810	579880	93.7	91.6
Delhi	296190	247726	296240	257610	83.6	87.0
Goa	19150	18284	19070	16170	95.5	84.8
Gujarat	1328940	1192483	1001030	1191475	89.7	119.0
Haryana	577220	518917	564570	536426	89.9	95.0
Himachal Pradesh	113570	99894	112020	99014	88.0	88.4
Jammu & Kashmir	201290	219347	196620	221692	109.0	112.8
Jharkhand	838500	768644	758080	777493	91.7	102.6
Karnataka	1119620	1071741	1110040	1046227	95.7	94.3
Kerala	488790	462173	477360	406883	94.6	85.2
Ladakh	4460	3829	4350	3902	85.9	89.7
Lakshadweep	1030	1097	1000	941	106.5	94.1
Madhya Pradesh	1968150	1732100	1989460	1757418	88.0	88.3
Maharashtra	1897050	1874813	1880070	1855309	98.8	98.7
Manipur	44530	34091	42800	32368	76.6	75.6
Meghalaya	69920	78779	74100	70206	112.7	94.7
Mizoram	17820	18796	17650	17156	105.5	97.2
Nagaland	28040	16942	27900	16593	60.4	59.5
Odisha	795890	685899	794200	696769	86.2	87.7
Puducherry	21100	13786	21000	13375	65.3	63.7
Punjab	438590	401853	433180	374320	91.6	86.4
Rajasthan	1822630	1354161	1824830	1369661	74.3	75.1
Sikkim	10890	7265	11160	7108	66.7	63.7
Tamil Nadu	1104140	908137	1070510	922461	82.2	86.2
Telangana	618260	628722	617000	669035	101.7	108.4
The Dadra And Nagar Haveli And Daman And Diu	22290	11633	22640	11593	52.2	51.2
Tripura	51240	46474	51250	48927	90.7	95.5
Uttarakhand	183610	178091	190810	176715	97.0	92.6
Uttar Pradesh	5626780	5013277	5658530	4983972	89.1	88.1
West Bengal	1435770	1371368	1436900	1379978	95.5	96.0

Annexure-4.4
States/UTs-wise number and percentage of Child Immunization - OPV 0 (Birth Dose), Hepatitis-B0 (Birth Dose) during 2020-21 and 2021-22

States/UT	Live births		Child immunization - OPV 0 (Birth Dose)		Child immunization - Hepatitis-B0 (Birth Dose)		%Child immunization - OPV 0 (Birth Dose)		%Child immunization - Hepatitis-B0 (Birth Dose)	
	2020-21	2021-22	2020-21	2021-22	2020-21	2021-22	2020-21	2021-22	2020-21	2021-22
All India	**20196514**	**20328553**	**17427847**	**17706901**	**14553688**	**15400988**	**86.3**	**87.1**	**72.1**	**75.8**
A & N Islands	4014	3706	3871	3515	3789	3516	96.4	94.8	94.4	94.9
Andhra Pradesh	709321	752724	714134	756128	691232	740735	100.7	100.5	97.4	98.4
Arunachal Pradesh	19861	20201	17020	17145	15455	15750	85.7	84.9	77.8	78.0
Assam	571882	565794	366989	381311	339389	352638	64.2	67.4	59.3	62.3
Bihar	1981444	1998535	1768143	1664456	1401774	1435816	89.2	83.3	70.7	71.8
Chandigarh	16217	19529	14727	17368	14363	16737	90.8	88.9	88.6	85.7
Chhattisgarh	466674	472963	432802	463572	323586	357343	92.7	98.0	69.3	75.6
Delhi	204951	226552	182671	200562	176969	196627	89.1	88.5	86.3	86.8
Goa	15762	14585	14410	13534	13228	12602	91.4	92.8	83.9	86.4
Gujarat	1111914	1092195	1106830	1072910	947762	919190	99.5	98.2	85.2	84.2
Haryana	502244	510243	481506	485204	381113	429626	95.9	95.1	75.9	84.2
Himachal Pradesh	88332	88380	77932	78832	71071	73215	88.2	89.2	80.5	82.8
Jammu & Kashmir	176767	190504	175901	188829	160718	176341	99.5	99.1	90.9	92.6
Jharkhand	721854	708234	517236	511167	400246	415959	71.7	72.2	55.4	58.7
Karnataka	853892	876419	848972	877617	761625	803589	99.4	100.1	89.2	91.7
Kerala	425176	430674	402573	406763	339605	362374	94.7	94.4	79.9	84.1
Ladakh	3642	3503	3467	3398	3418	3282	95.2	97.0	93.8	93.7
Lakshadweep	1153	919	1159	923	1161	894	100.5	100.4	100.7	97.3
Madhya Pradesh	1367975	1300715	1230319	1189192	1159888	1127812	89.9	91.4	84.8	86.7
Maharashtra	1766935	1747064	1639762	1763308	1150574	1386267	92.8	100.9	65.1	79.3
Manipur	31125	29175	20844	20332	21393	20889	67.0	69.7	68.7	71.6
Meghalaya	82636	81463	51878	49065	44334	41627	62.8	60.2	53.6	51.1
Mizoram	20051	19122	14362	13551	14191	13332	71.6	70.9	70.8	69.7
Nagaland	16254	16367	11796	12089	9949	10488	72.6	73.9	61.2	64.1
Odisha	636143	623877	574240	569818	536364	544110	90.3	91.3	84.3	87.2
Puducherry	26151	31497	26142	31421	26141	31393	100.0	99.8	100.0	99.7
Punjab	357583	370996	304491	320285	253165	267781	85.2	86.3	70.8	72.2
Rajasthan	1348768	1279431	1032088	969610	879977	878194	76.5	75.8	65.2	68.6
Sikkim	7205	6715	6511	6288	6091	6012	90.4	93.6	84.5	89.5
Tamil Nadu	915967	920615	906558	920439	905364	918981	99.0	100.0	98.8	99.8
Telangana	538318	606638	581450	647371	521135	630865	108.0	106.7	96.8	104.0
The Dadra And Nagar Haveli And Daman And Diu	10358	10599	9748	10078	9105	9674	94.1	95.1	87.9	91.3
Tripura	49479	49625	41122	43618	39570	42388	83.1	87.9	80.0	85.4

States/UT	Live births		Child immunization - OPV 0 (Birth Dose)		Child immunization - Hepatitis-B0 (Birth Dose)		%Child immunization - OPV 0 (Birth Dose)		%Child immunization - Hepatitis-B0 (Birth Dose)	
	2020-21	2021-22	2020-21	2021-22	2020-21	2021-22	2020-21	2021-22	2020-21	2021-22
Uttarakhand	153545	156175	123625	143006	105014	128823	80.5	91.6	68.4	82.5
Uttar Pradesh	3785233	3858834	2652538	2753842	1882085	2038468	70.1	71.4	49.7	52.8
West Bengal	1207688	1243985	1070030	1100354	942844	987650	88.6	88.5	78.1	79.4

Annexure 4.5

States/UTs-wise number of Child immunization – pentavalent 1, 2 and 3 doses during 2020-21 and 2021-22

States/UTs	Child Immunization - Pentavalent 1	Child Immunization - Pentavalent 2	Child Immunization - Pentavalent 3	Child Immunization - Pentavalent 1	Child Immunization - Pentavalent 2	Child Immunization - Pentavalent 3
	2020-21			2021-22		
All India	23266454	22782291	22816009	23283607	22379076	22235713
Andaman & Nicobar Islands	4174	4199	4257	3523	3544	3723
Andhra Pradesh	786673	788414	813936	859604	849979	864571
Arunachal Pradesh	21810	21209	20398	21743	20893	19977
Assam	605299	596583	587761	604872	593218	586008
Bihar	2710837	2666405	2525623	2494430	2351019	2175790
Chandigarh	13959	13650	13869	14508	13189	13510
Chhattisgarh	559313	555605	559371	549262	534962	533413
Delhi	247634	238606	231316	261168	248542	237678
Goa	16184	16788	17107	14790	14601	14369
Gujarat	1104132	1075199	1129473	1132274	1102824	1123923
Haryana	533001	519829	507526	561322	539672	527848
Himachal Pradesh	101952	101233	101121	100239	98457	97637
Jammu And Kashmir	220160	216075	214719	232311	223886	220302
Jharkhand	778391	758547	743721	756750	723277	714388
Karnataka	1058387	1030255	1050711	1081340	1046560	1055640
Kerala	462761	464609	463719	434268	414493	401284
Ladakh	3911	3864	3920	3664	3697	3615
Lakshadweep	1107	1071	1077	1063	1022	1016
Madhya Pradesh	1689660	1655128	1663029	1645673	1590584	1598155
Maharashtra	1871298	1847318	1902052	1896529	1844662	1881029
Manipur	39605	37646	35605	36726	33955	32416
Meghalaya	79790	78365	76669	73494	68153	63750
Mizoram	20372	20165	19860	19048	18253	17475
Nagaland	21380	20036	18623	20958	19116	17847
Odisha	666004	662483	667703	656664	654092	654167
Puducherry	15532	14736	14568	15251	14560	14137
Punjab	395753	387752	385882	386508	359874	344798
Rajasthan	1367754	1322772	1300470	1348106	1318319	1303270
Sikkim	7436	7454	7497	6778	6718	6754
Tamil Nadu	929488	926806	929174	913601	909494	912436
Telangana	626219	615766	629713	652693	639627	641866
The Dadra And Nagar Haveli And Daman And Diu	11101	11191	11440	10445	10318	10299

States/UTs	Child Immunization - Pentavalent 1	Child Immunization - Pentavalent 2	Child Immunization - Pentavalent 3	Child Immunization - Pentavalent 1	Child Immunization - Pentavalent 2	Child Immunization - Pentavalent 3
	2020-21			2021-22		
Tripura	51414	49556	47867	51427	48744	46562
Uttarakhand	173558	172670	172309	176224	170514	167123
Uttar Pradesh	4665281	4492503	4560966	4862335	4530214	4574728
West Bengal	1405124	1387803	1382957	1384016	1358044	1354209

Annexure 4.6

States/UTs-wise number and percentage of Child Immunization - Rotavirus 1, Rotavirus 2 and Rotavirus 3 during 2020-21 and 2021-22

States/UTs	Child Immunization - Rotavirus 1	Child Immunization - Rotavirus 2	Child Immunization - Rotavirus 3	Child Immunization - Rotavirus 1	Child Immunization - Rotavirus 2	Child Immunization - Rotavirus 3
	2020-21			2021-22		
All India	**22700401**	**22194966**	**22116269**	**22782982**	**21832730**	**21658934**
A & N Islands	4120	4181	4170	3519	3517	3535
Andhra Pradesh	779126	779170	794602	854946	845936	860386
Arunachal Pradesh	21455	20894	19943	21484	20638	19746
Assam	600678	590111	581375	600369	589036	581709
Bihar	2666232	2626312	2484394	2474759	2322944	2156234
Chandigarh	13945	13655	13913	14530	13132	13432
Chhattisgarh	517233	513793	516381	533329	520015	517127
Delhi	246833	236788	227179	263318	248539	237621
Goa	15877	16523	16886	14676	14422	14308
Gujarat	1064669	1036028	1082192	1088748	1057067	1078249
Haryana	504446	489284	477568	539103	518150	503010
Himachal Pradesh	101949	101213	101204	100210	98413	97617
Jammu & Kashmir	218752	214665	211732	232053	223740	218458
Jharkhand	752757	735836	716314	725278	692045	683535
Karnataka	1023138	991010	1004956	1054593	1016880	1030891
Kerala	442406	451635	448059	401999	380905	363584
Ladakh	3910	3862	3919	3664	3695	3620
Lakshadweep	1090	1072	1079	1072	1037	1009
Madhya Pradesh	1648090	1610298	1613042	1636183	1581740	1589878
Maharashtra	1839651	1810105	1854567	1761160	1687461	1717592
Manipur	37645	35843	33893	35647	32932	31249
Meghalaya	63908	57872	53032	72181	66686	61569
Mizoram	20158	19990	19716	19060	18204	17396
Nagaland	19335	18169	16921	19825	18157	17095
Odisha	662889	659810	666780	655565	652416	652340
Puducherry	15177	14540	14398	15291	14480	14100
Punjab	383987	375122	371422	381425	354535	338817
Rajasthan	1350822	1305306	1283930	1326379	1285138	1281279
Sikkim	7322	7386	7336	6750	6708	6715
Tamil Nadu	891262	888388	891183	904519	899153	902603
Telangana	618953	608302	619006	648492	636591	638865
The Dadra And Nagar Haveli And Daman And Diu	10720	10828	11010	10138	9954	9979
Tripura	51774	49931	48262	51725	48983	46775
Uttarakhand	172219	171358	170844	174808	168800	165514
Uttar Pradesh	4557550	4383777	4406390	4773260	4443435	4451960
West Bengal	1370323	1341909	1328671	1362924	1337246	1331137

Annexure-4.7

States/UTs-wise number of cases of AEFI – Abscess, deaths and Abscess during 2020-21 and 2021-22

States/UTs	Number of cases of AEFI - Abscess	Number of cases of AEFI - Death	Number of cases of AEFI - Others	Number of cases of AEFI - Abscess	Number of cases of AEFI - Death	Number of cases of AEFI - Others
	2020-21			2021-22		
All India	16513	213	390317	11434	155	398443
A & N Islands	3	0	199	2	0	177
Andhra Pradesh	27	0	222	3	0	72
Arunachal Pradesh	8	0	1395	9	1	1020
Assam	141	6	10948	72	0	9996
Bihar	1479	59	11308	846	18	6388
Chandigarh	11	2	36	19	0	48
Chhattisgarh	330	3	4439	263	0	2552
Delhi	43	4	185	43	1	114
Goa	9	0	86	6	0	87
Gujarat	969	4	6420	624	4	6526
Haryana	954	14	9528	1068	4	12290
Himachal Pradesh	43	0	5162	28	0	3591
Jammu & Kashmir	145	0	4147	63	0	4043
Jharkhand	1105	4	8117	1584	1	7585
Karnataka	441	12	5949	549	18	3836
Kerala	220	9	2164	135	13	1432
Ladakh	0	1	28	0	0	68
Lakshadweep	0	0	112	0	0	29
Madhya Pradesh	1217	6	16320	564	5	8953
Maharashtra	51	16	379	55	12	264
Manipur	18	0	447	14	0	257
Meghalaya	58	3	2181	65	4	1560
Mizoram	57	0	1573	102	0	1668
Nagaland	1	0	8	7	0	2
Odisha	1873	13	160019	1566	7	169393
Puducherry	8	0	2499	14	0	2618
Punjab	33	3	3595	18	0	3115
Rajasthan	530	0	6513	676	0	5617
Sikkim	7	1	681	4	0	688
Tamil Nadu	301	10	1544	105	13	1337
Telangana	1237	13	3391	358	2	1504
The Dadra And Nagar Haveli And Daman And Diu	38	0	6202	17	0	6288
Tripura	102	1	222	76	0	254
Uttarakhand	463	1	31250	571	1	32425
Uttar Pradesh	3157	3	13849	718	36	8487
West Bengal	1434	25	69199	1190	15	94159

CHAPTER 5

FAMILY PLANNING

5.1 Introduction

There are several definitions of family planning. An Expert Committee (1971) of the WHO defined family planning as "a way of thinking and living that is adopted voluntarily, upon the basis of knowledge, attitudes and responsible decisions by individuals and couples, in order to promote the health and welfare of the family group and thus contribute effectively to the social development of a country".

Another Expert Committee defined and described family planning as follows: "Family planning refers to practices that help individuals or couples to attain certain objectives:

(a) to *avoid unwanted* births;

(b) to *bring about wanted* births;

(c) to *regulate the intervals* between pregnancies;

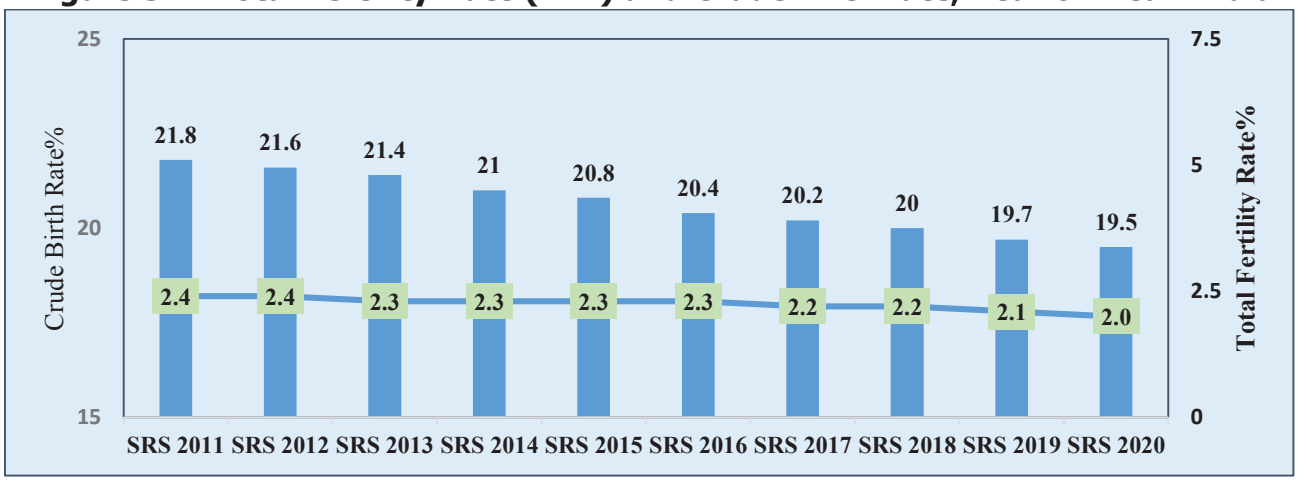
(d) to *control the time at which births occur* in relation to the ages of the parent

(e) to determine the *number of children* in the family

In 1952, India became the first nation in the world to introduce a National Programme for Family Planning. The Family Planning Programme has transformed in terms of policy and actual programme execution from its historic start in 1952. The National Population Policy (NPP), introduced in 2000, brought a holistic and target-free approach that helped in the reduction of fertility to not only achieve population stabilization goals but also promote reproductive health, leading to reduction in maternal, infant, and child mortality and morbidity. There was a gradual transition from the clinical approach to the reproductive child health approach.

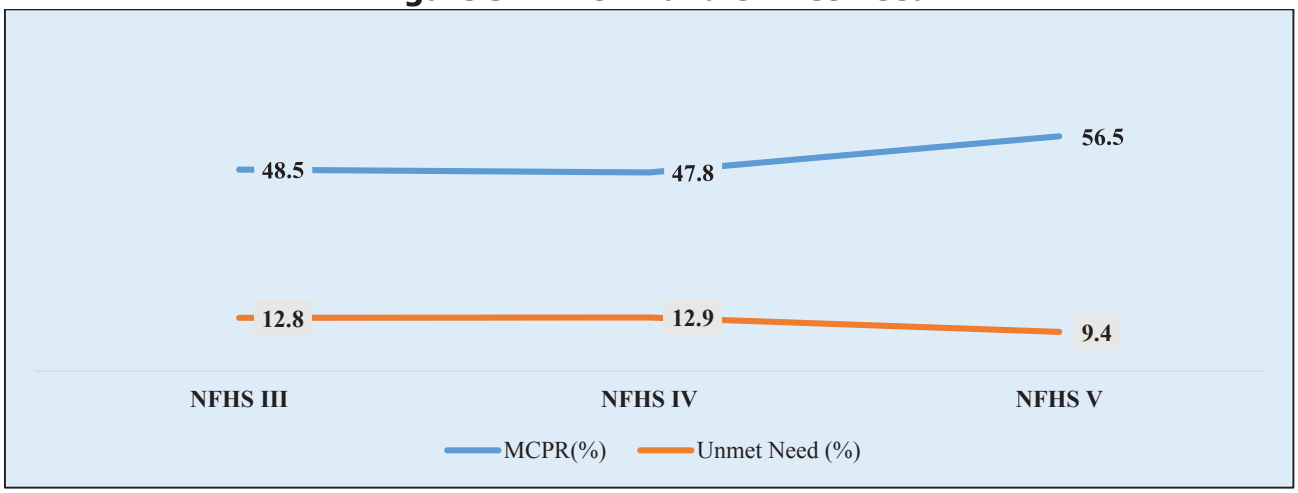
Family Planning is a major pillar of the RMNCAH+N strategy. The program has come a long way since its inception with introduction of many new schemes and initiatives like "Mission Parivar Vikas" in 13 States (Seven high focus states and Six North Eastern States).Inclusion of new contraceptive methods (Injectable MPAand Centchroman pills), operationalization of FPLMIS for logistic and supply chain management of contraceptives, focus on post pregnancy contraception and many more. As a result,TFR and CBR have fallen significantly and FP indicators have improved substantially.

Figure 5.1: Total Fertility Rate (TFR) and Crude Birth rate, Year on Year-India



Source: Sample Registration Survey

Figure 5.2: MCPR and Unmet Need



Source: NFHS III, IV, V

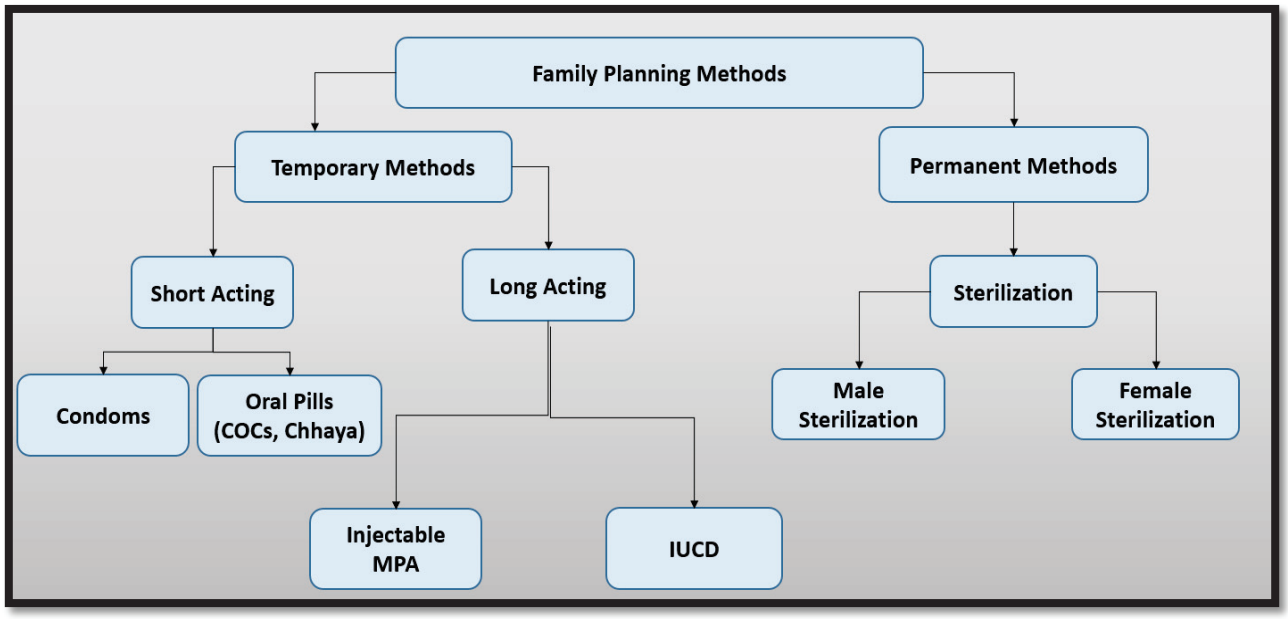
From the figure 5.2 it may be identified that MCPR (Modern Contraceptive Prevalence Rate) is increasing and Unmet need is continuously decreasing**.**

5.2 Contraceptive Methods under National Family Planning Program

Contraceptive methods are, by definition, preventive methods to help women avoid unwanted pregnancies. They include all temporary and permanent measures to prevent pregnancy resulting from coitus.

The Department of Health and Family Welfare is responsible for implementation of the National Family Welfare Programme by interalia, encouraging the utilization of contraceptives and distribution of the same to the States/UTs under Free Supply Scheme and through Public Private Partnership (PPP) under Social Marketing Scheme. Family planning allows people to have desired number of children and determine the spacing of pregnancies which is achieved through use of contraceptive methods. Different method of contraceptives available under National Family Planning as mentioned in figure 5.3.

Figure 5.3: Contraceptive Methods



5.3 Key Data Elements for Family Planning under HMIS

HMIS captures 25 data elements corresponding to family planning programme. These are as follows:

- Male Sterilizations -Non Scalpel Vasectomy (NSV) / Conventional Vasectomy conducted
- Female Sterilizations –
    - Number of Laparoscopic sterilizations (excluding post abortion) conducted
    - Number of Interval Mini-lap (other than post-partum and post abortion) sterilizations conducted
    - Number of Postpartum sterilizations (within 7 days of delivery by mini-lap or concurrent with caesarean section) conducted
    - Number of Post Abortion sterilizations (within 7 days of spontaneous or surgical abortion) conducted
- IUCD-
    - Number of Interval IUCD Insertions (excluding PPIUCD and PAIUCD)
    - Number of Postpartum (within 48 hours of delivery) IUCD insertions
    - Number of Post Abortion (within 12 days of spontaneous or surgical abortion) IUCD insertions
    - Number of IUCD Removals
    - Number of complications following IUCD Insertion
- Injectable Contraceptive-Antara Program-
    - First Dose
    - Second Dose
    - Third Dose
    - Fourth or more than fourth
- Number of Combined Oral Pill cycles distributed
- Number of Condom pieces distributed

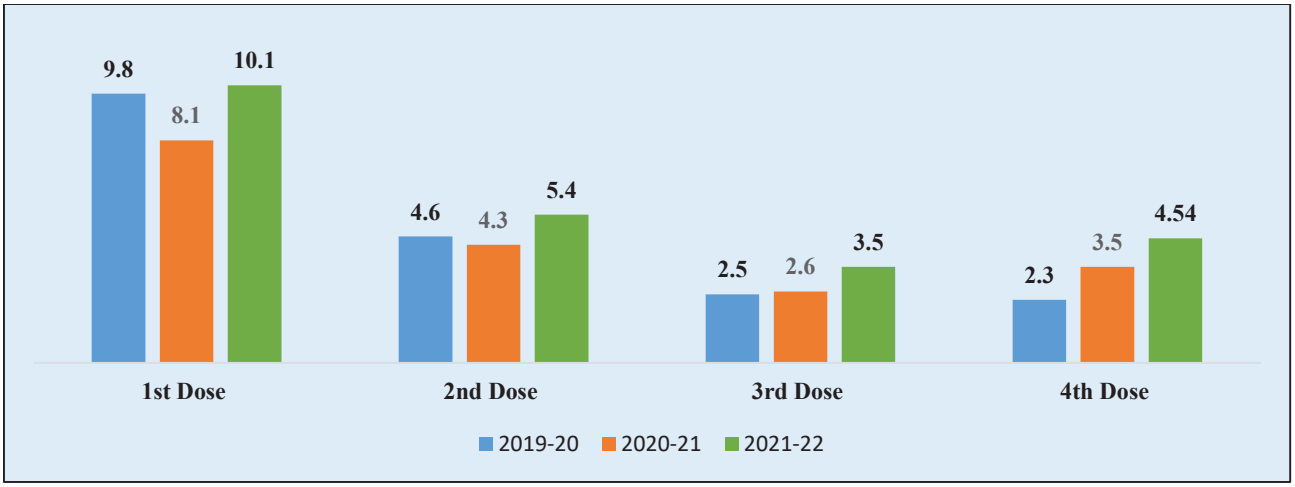
- Number of Centchroman (weekly) pill strips distributed
- Number of Emergency Contraceptive Pills (ECP) given
- Number of Pregnancy Test Kits (PTK) used
- Complications following-
    - Male sterilization
    - Female sterilization
- Failures following-
    - Male sterilization
    - Female sterilization
- Deaths following-
    - Male sterilization
    - Female sterilization

5.4. Antara Programme- Injectable MPA Services

Injectable Contraceptive MPA (Antara Programme) was introduced in the National Family Planning program in 2016. More than **71.73 lakh** doses of Injectable Contraceptive MPA (Antara Programme) have been reported till 2021-22 from the time of its inception into the Family Planning Programme.

In the Year 2021-22, Injectable MPA 23.74 lakh doses were provided, which has improved by 22% when compared to 19.40 lakh doses provided in the Year 2019 -20.

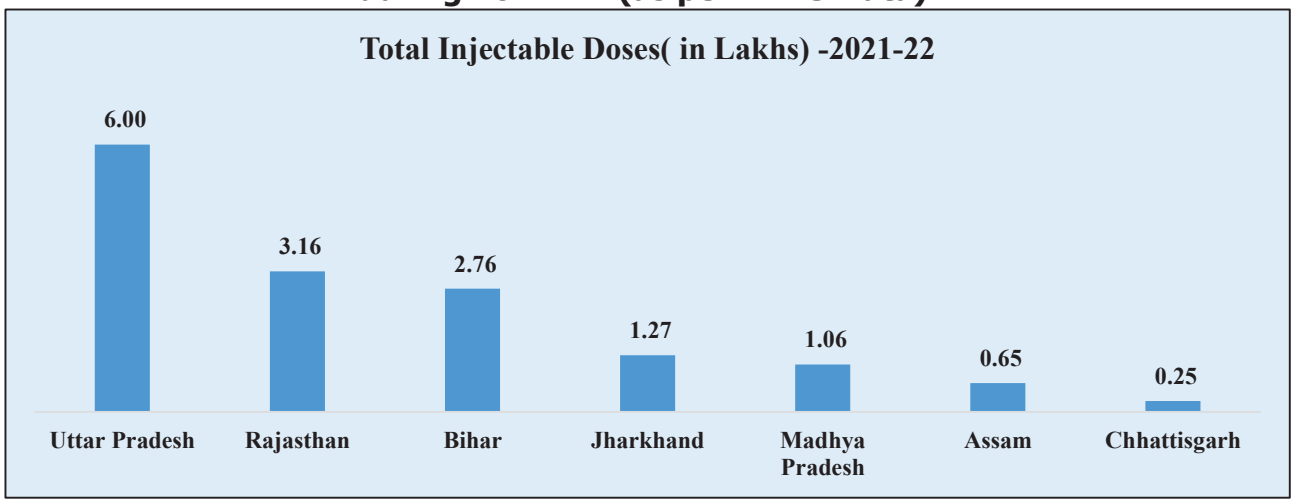
Figure 5.4: Improvement in uptake of continuous doses of Injectable MPA in HMIS (2019-2022)



Maximum number of Injectable MPA doses in 2021-22 were reported by Uttar Pradesh (5.9 lakh) followed by West Bengal (4.01 lakh) and Rajasthan (3.15 lakh). States/UTs wise Injectable MPA doses is provided at Annexure-5.1.

The seven high focus States under Mission Parivar Vikas have contributed to 64% of the total Injectable MPA doses in 2021-22.

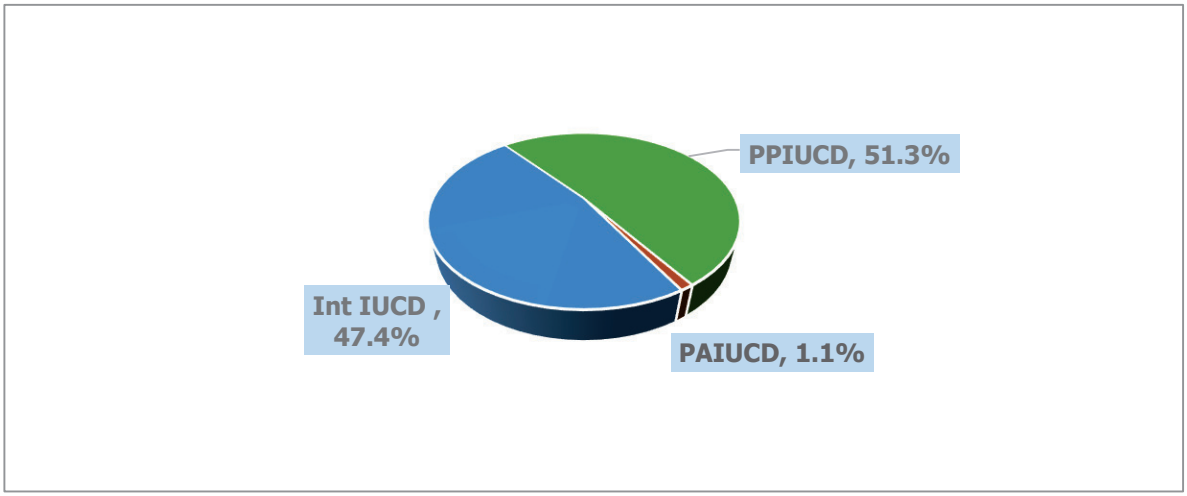
Figure 5.5: Total No. of Doses of Injectable MPA in Seven High Focus States during 2021-22 (as per HMIS Data).



5.5. IUCD Services

In the Year 2021-22, a total of 60.55 Lakh IUCDs were inserted including in comparison to the Year 2019-20(57 Lakhs) IUCD performance improved by 5% in 2021-22. States/UTs wise IUCD insertions is provided at Annexure-5.2.

Figure 5.6: Percentage Share of Interval IUCD, PPIUCD and PAIUCD in Total IUCD



5.5.a PPIUCD Services

- Overall share of PPIUCD in total IUCD in the year 2021-22 improved to 51%(increased from 43% in 2019-20) while PAIUCD share was 1% of total IUCD insertions.

- The PPIUCD acceptance rate has been steadily increasing in the country and more than tripled in last five years with PPIUCD acceptance rate of 24.4% in 2021-22 against 8.1% in 2015-16. More than 1.3 Crore PPIUCD insertions have been done in the country since the inception. This shows that more women are now accepting PPIUCD as a contraceptive choice post-delivery.

Figure 5.7: The share of PPIUCDs in total IUCD -HMIS (2018-2022)

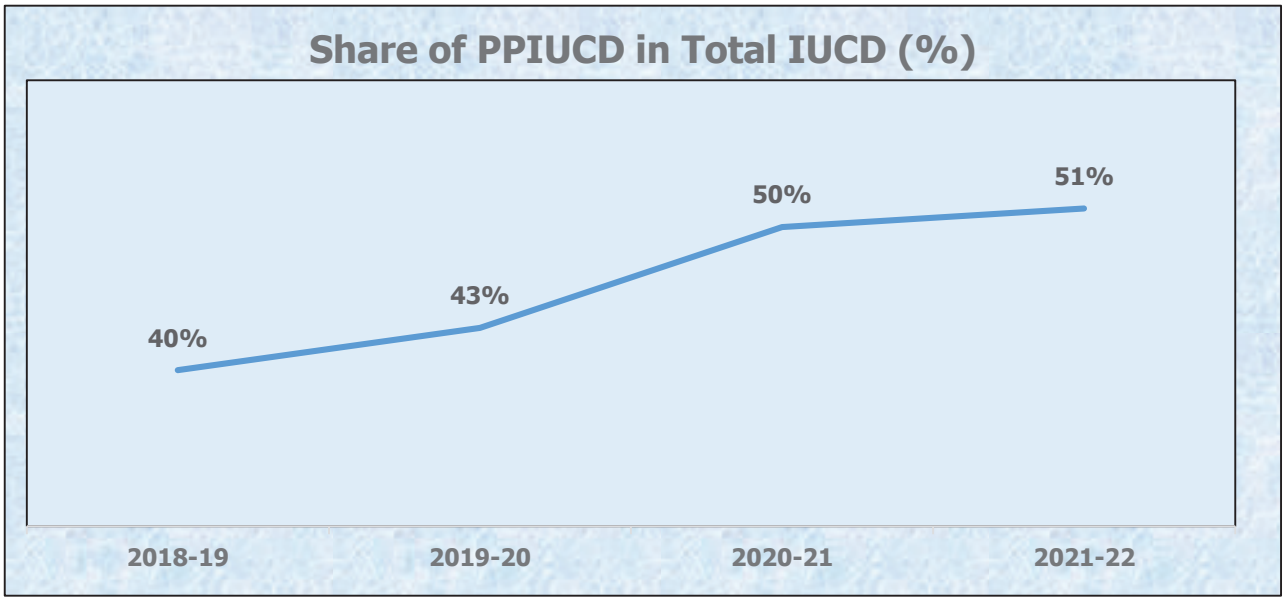


Figure 5.8: Comparison of PPIUCD Performance in Lakh and PPIUCD Acceptance in percentage-HMIS (2015-22)

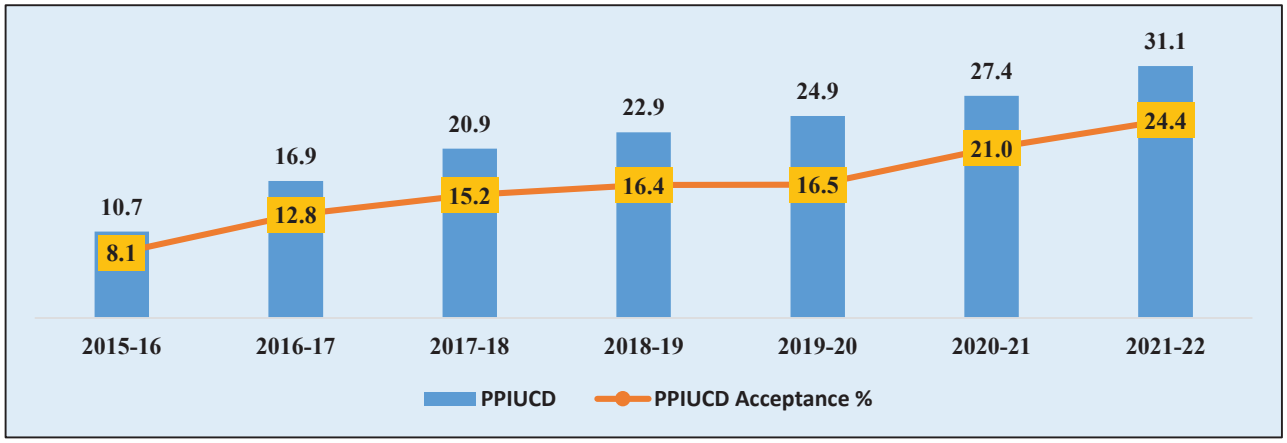
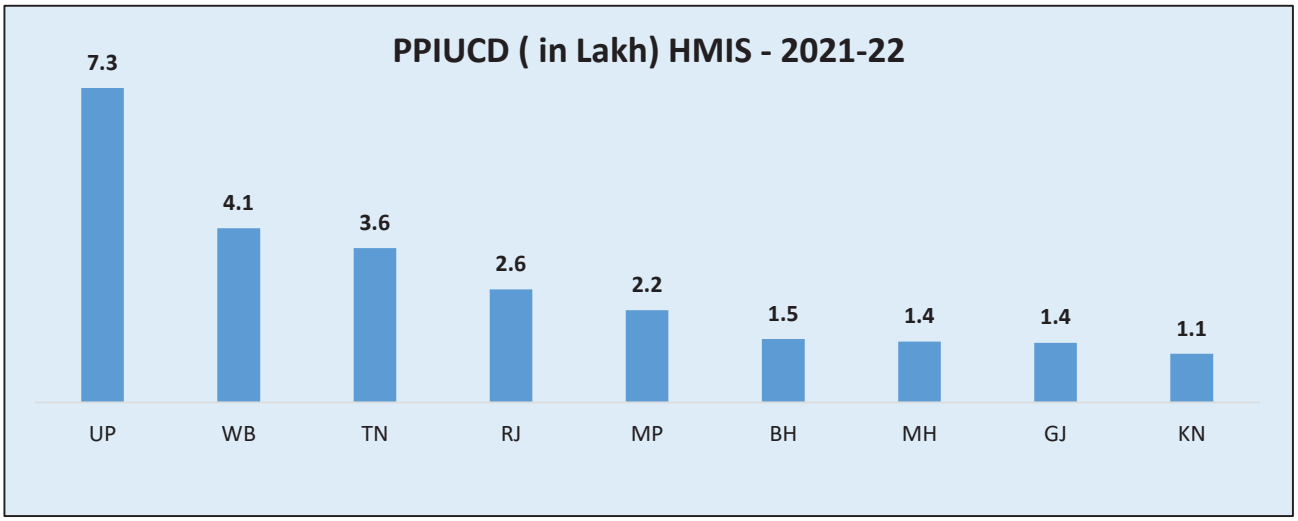


Figure 5.8 shows the year-on-year improvement in the insertion of PPIUCD and Increase in PPIUCD acceptance from the Year 2015-16 to 2021-22**.** States/UTs wise PPIUCD insertions is provided at Annexure-5.3.

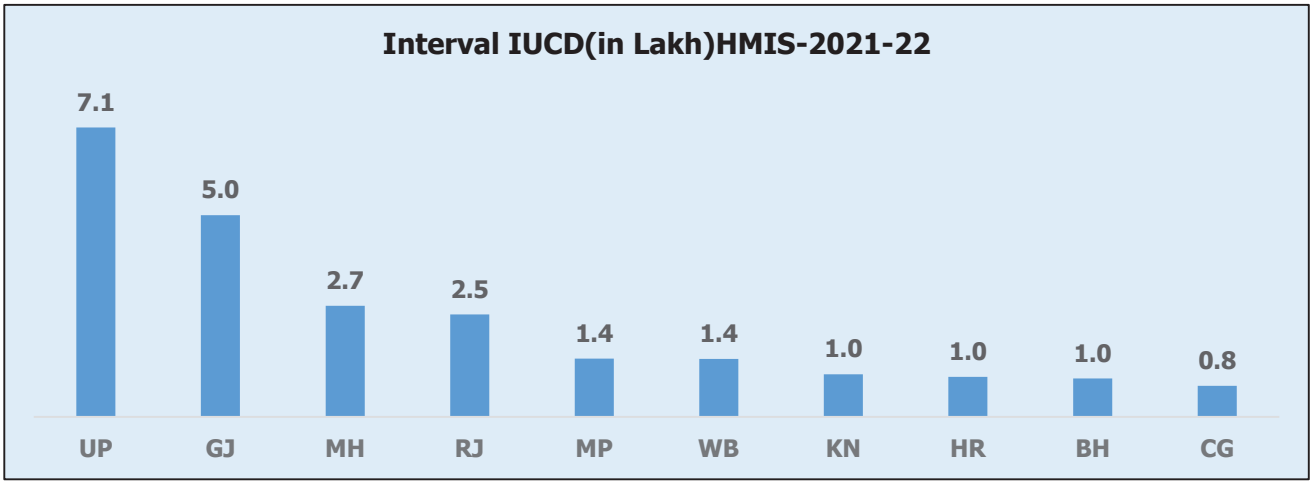
Figure 5.9: Top 10 performing states in PPIUCD -2021-22



5.5.b Interval IUCD Services:

In the Year 2021-22, 28.75 lakh Interval IUCD insertions were reported. Although Interval IUCD has declined by 9% from 2019-20(31.68 lakhs) it has improved by 8% from 2020-21(26.63 lakh). States/UTs wise Interval IUCD is attached at Annexure-5.4.

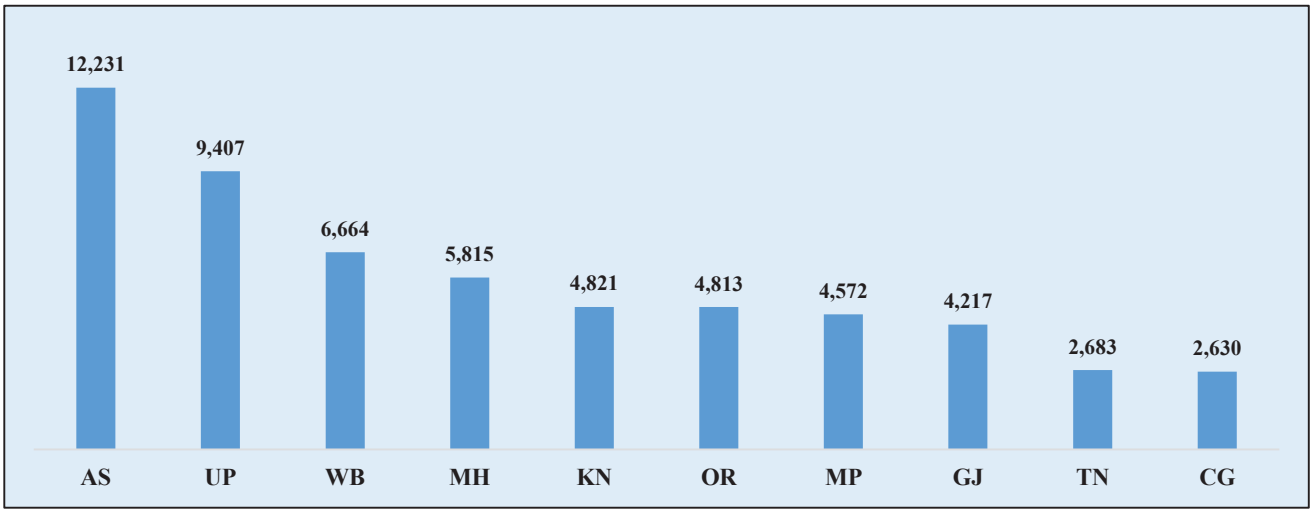
Figure 5.10: As per HMIS Data-Top 10 States reported maximum numbers of Interval IUCD during 2021-22



5.5.c PAIUCD Services:

PAIUCD insertions improved by 6.5% from 65,737 in 2020-21 to 69,980 in 2021-22. PAIUCD acceptance rate for India in 2021-22 was 6.1% (out of the total abortions reported). States/UTs wise number of PAIUCD insertions is provided at Annexure-5.5.

Figure 5.11: Top 10 states reported maximum number of PAIUCD (HMIS) -2021-22

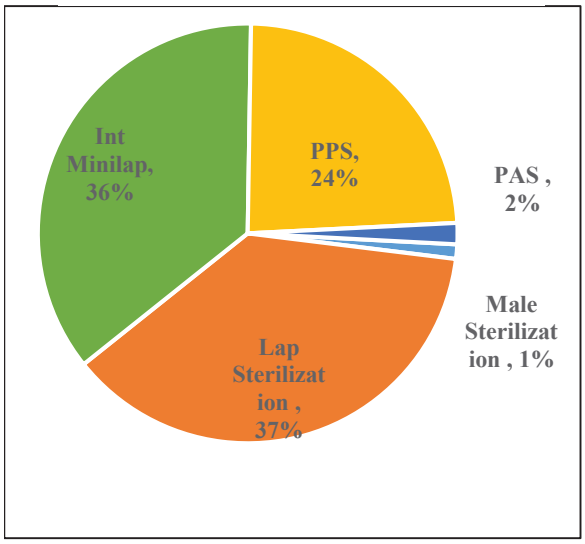


5.6 Sterilization Services

Due to the mobility restrictions as a result of Nationwide lockdown, sterilizations faced the maximum impact and the number of sterilizations saw a decline of 25.7%, from 33,52,979 in 2019-20 to 26,97,810 in 2020-2021.

In the year 2021-22, this decline was compensated to an extent and Sterilization improved by 11.6% from 26,97,810 in 2020-21 to 30,08,751 in 2021-22. States/UTs wise sterilization is provided at Annexure-5.6.

Figure 5.12: % Contribution in Total Sterilization 2021-22 (HMIS)

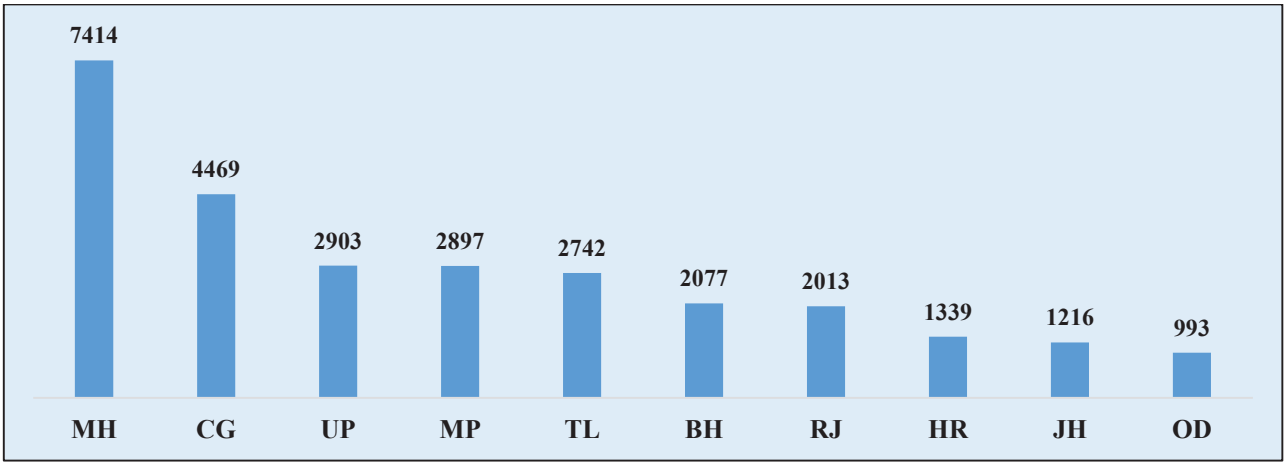


% of Method wise female sterilization is attached at Annexure-5.9

5.6.a Male Sterilization Services

In the Year 2021-22 Male Sterilization, 33,635contributing to 1% of the total sterilization services provided in India. Although it has improved by 27% from 2020-21(26,424) it has declined by 38% when compared to 2019-20(54,239). States/UTs wise male sterilization is provided at Annexure-5.7.

Figure 5.13: Top 10 states reported maximum number of Male Sterilization (HMIS) -2021-22



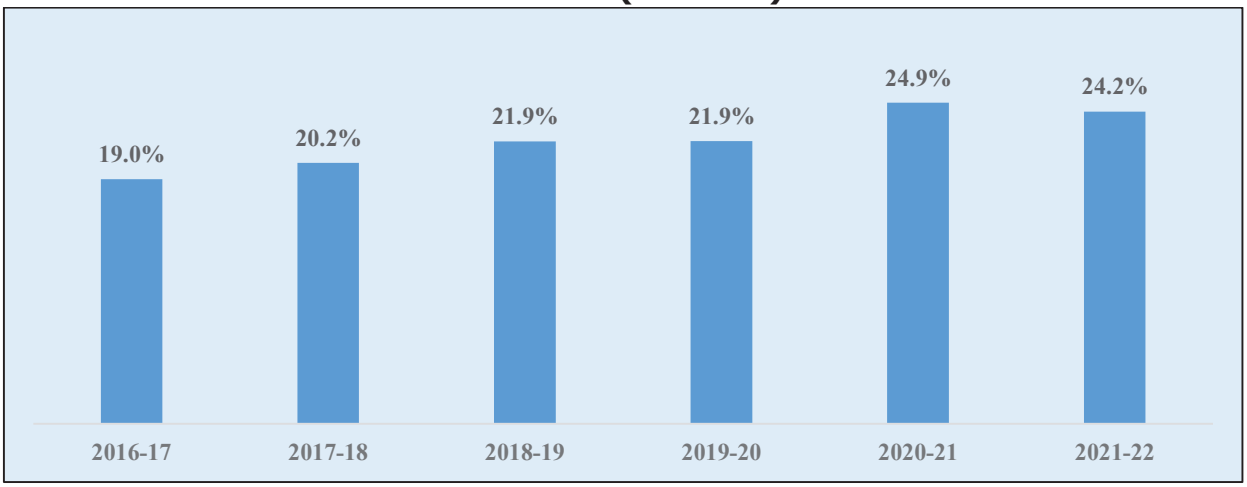
5.6.b Female Sterilization Services

Female Sterilization improved by 11.4%, from 26.71 lakh in 2020-21 to 29.75 lakh in 2021-22. However, it is yet to reach to its pre pandemic level of 32.98 lakh in 2019-20. The Interval Sterilization contributed to 71% of the Female Sterilization followed by PPS which contributed to 24%. States/UTs wise female sterilization is provided at Annexure-5.8.

5.6.b.1 Post-Partum Sterilization (PPS)

In the year 2021-22 Post-Partum Sterilization reached to 7.20 Lakh, which is aquavit to its pre-epidemic level in 2019-20(7.22 lakh). The PPS share in Female Sterilization has been increasing continuously over last 5-6 years. It has reached 24.2% in 2021-22 from 19% in 2016-17.

Figure 5.14: Comparison of Percentage share of PPS in Female Sterilization – HMIS (2016-22)



The acceptance of post-Partum sterilization out of total institutional deliveries has maintained at an average of around 3.7%. States/UTs wise PPS out of total institutional deliveries as reported in HMIS for 2020-21 & 2021-22 is provided at Annexure-5.10.

Figure 5.15: Comparison PPS acceptance out of total institutional deliveries-HMIS (2017-2022)

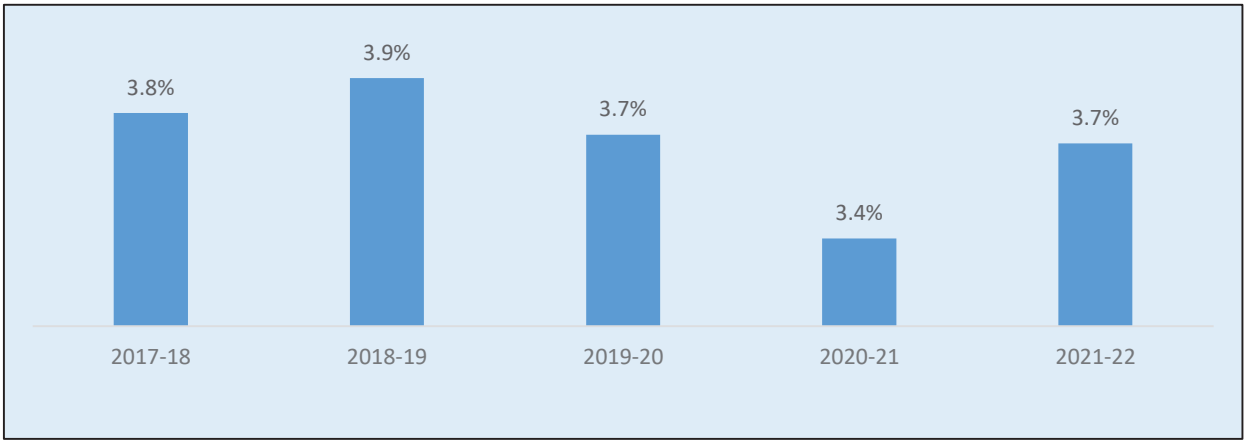
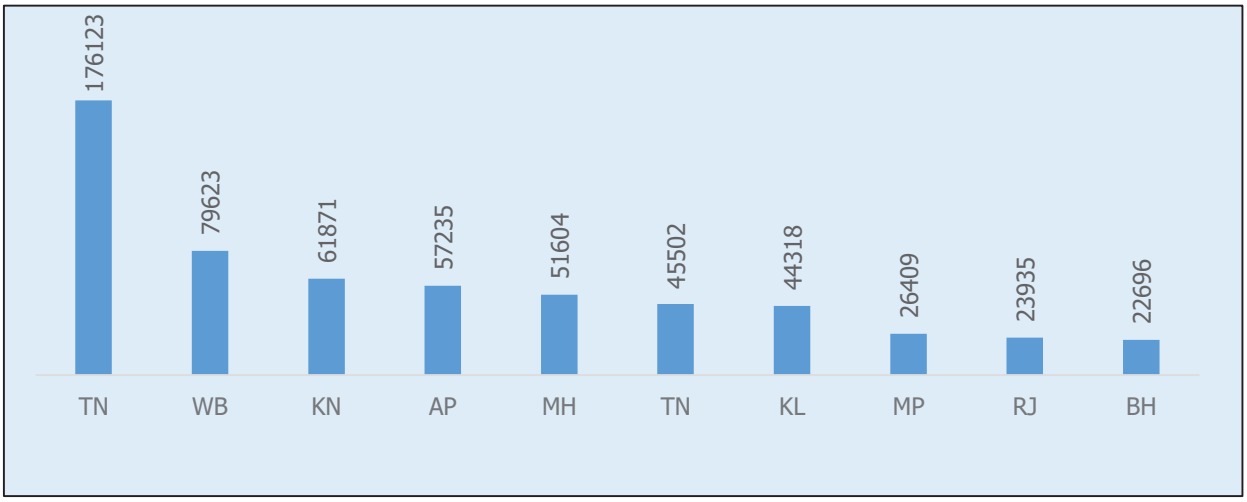


Figure 5.16: Top 10 states reported maximum numbers of PPS-2021-22(HMIS)



5.6.c Post-Abortion Sterilization

The Post Abortion Sterilization has declined by 19% from 60,796 in 2019-20 to 49, 119 in 2021-22. The PAS acceptance rate has declined from 4.8% in 2019-20 to 4.3% in 2021-22. States/UTs wise PAS is provided at Annexure-5.11.

Figure 5.17: Comparison of PAS acceptance out of total abortions – HMIS (2017-22)

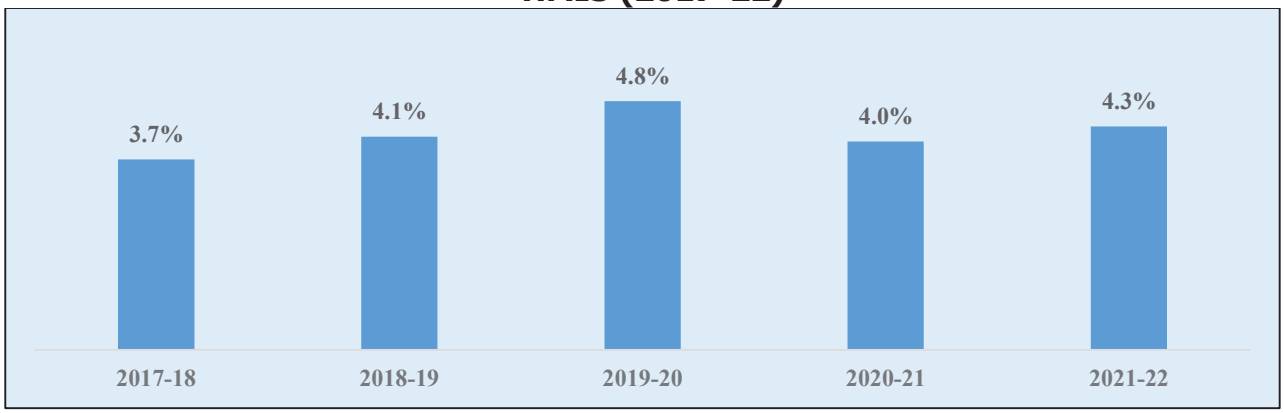
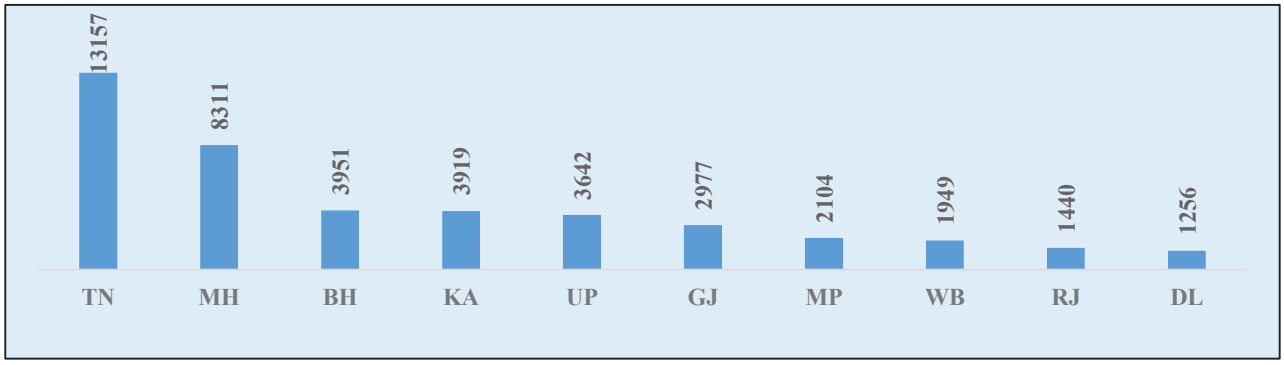


Figure 5.18: Top 10 states reported maximum number of PAS -HMIS (2021-22)

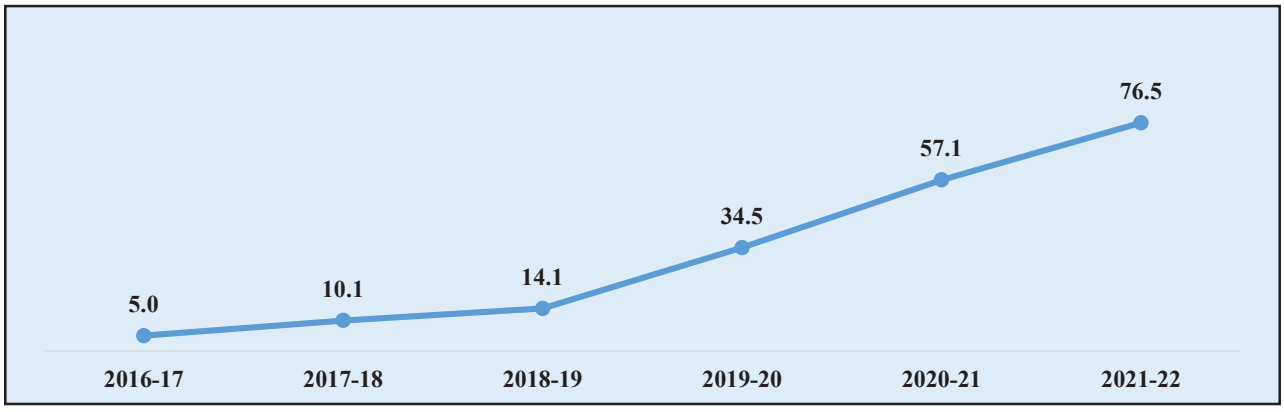


5.7 Short Acting Method

5.7 a. Centchroman (Chhaya Pills)

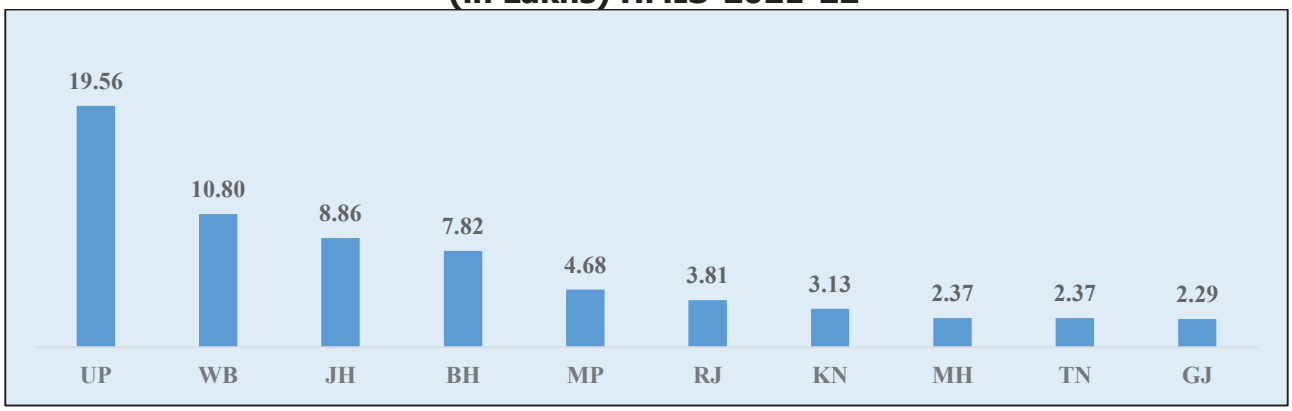
Centchroman (Chhaya pills) emerged as a popular contraceptive method of choice during the COVID-19 pandemic in almost all states. In 2021-22(76.5lakh), the number of stripes distributed doubled from 2019-20 (34.5 lakhs).

Figure 5.19: Comparison of Centchroman strips distributed (in Lakhs) – HMIS (2016-22)



The graph below highlights the top 10 states with maximum distribution of Centchroman in 2021-22. Uttar Pradesh is the leading State followed by West Bengal and Jharkhand in the distribution of Centchroman pills. It is noteworthy that southern states (like Karnataka, Tamil Nadu and Andhra Pradesh) where sterilization has remained a predominant choice also displayed substantial Centchroman distribution. States/UTs wise Centchroman is provided at Annexure-5.12.

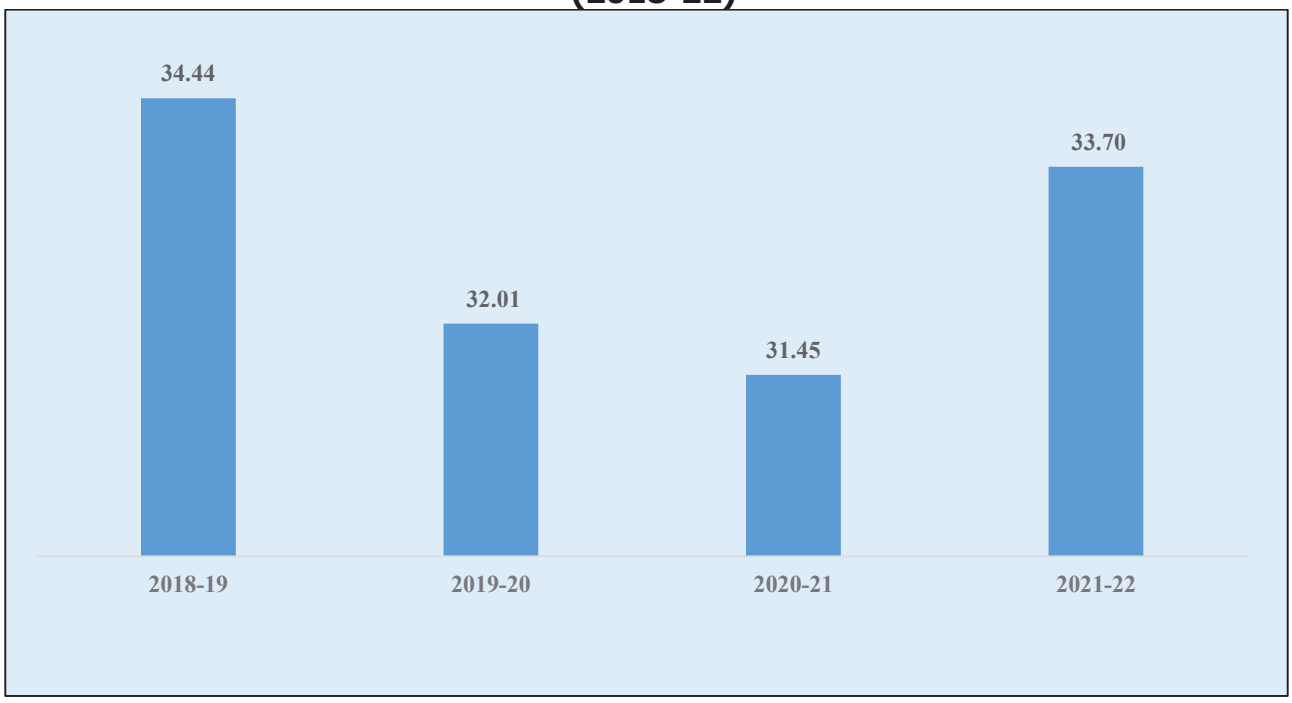
Figure 5.20: Top 10 states reported maximum Centchroman (in Lakhs) HMIS-2021-22



5.7 b. Condom

In 2021-22 as reported in HMIS, 33.70 crore pieces of condoms were distributed across the country. Despite the pandemic, condom distribution witnessed an increase of 7.2% as compared to 2020-21.

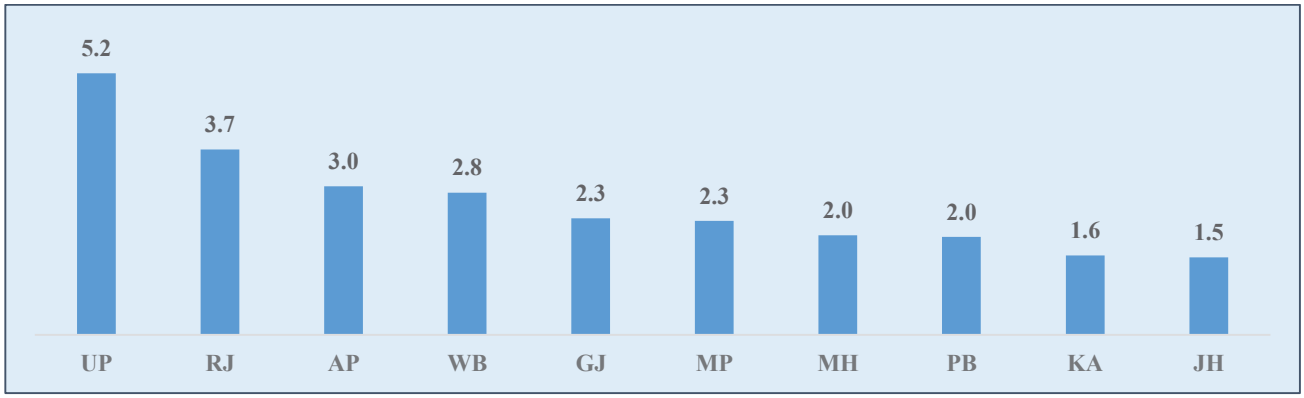
Figure 5.21: Comparison of Condom pieces distributed (in Crores) – HMIS (2018-22)



U.P. followed by Rajasthan, Andhra Pradesh and West Bengal are the leading states in the distribution of condom in 2021-22 in the country. Though, Rajasthan, West Bengal, Punjab and Gujarat have witnessed decline in the distribution of condom in 2021-22 against previous

year condom distribution. States/UTs wise condom pieces distributed (in Crores) is provided at Annexure-5.13**.**

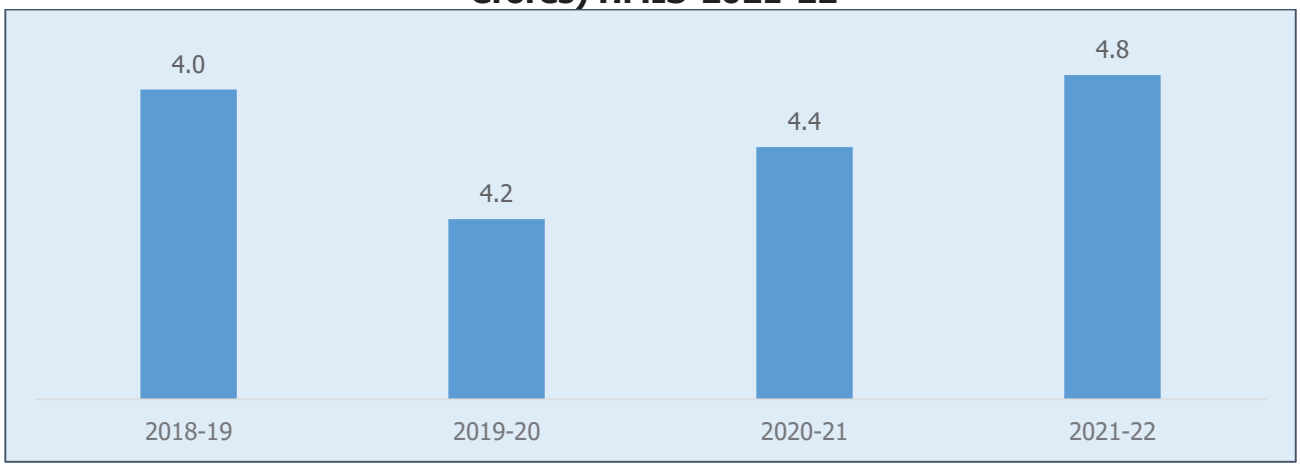
Figure 5.22: Top 10 states reported maximum Condom pieces' distribution (in Crores) HMIS-2021-22



5.7 c. Combined Oral Contraceptive Pills (COCs):

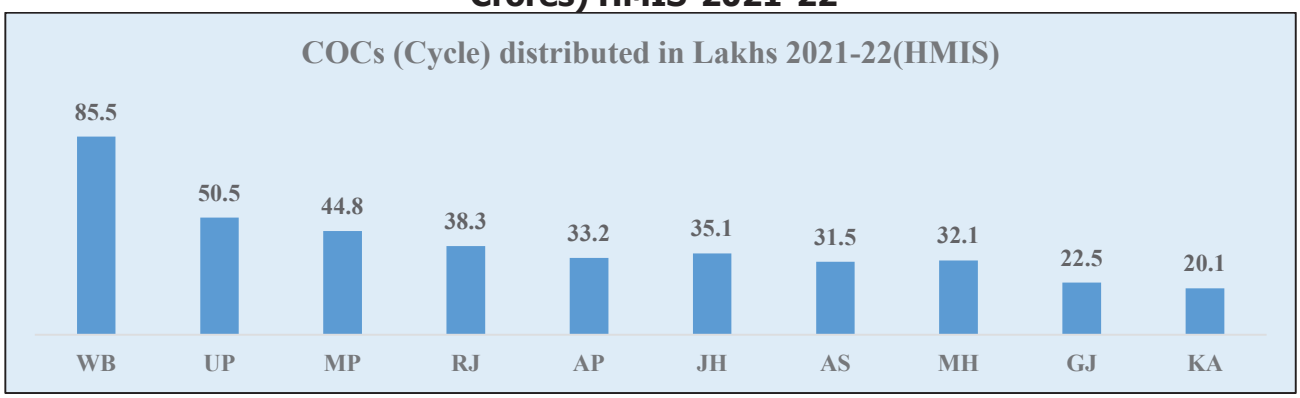
In 2021-22, 4.8 crore cycles of COCs were distributed across the country. COCs distribution witnessed an increase of 8.7% as compared to 2020- 21(4.4 crore).

Figure 5.23: Top 10 states reported maximum COCs(cycle) distribution (in Crores) HMIS-2021-22



West Bengal leads the country in COCs distribution followed by Uttar and Madhya Pradesh. Tripura, Uttarakhand, Lakshadweep and Andhra Pradesh have witnessed highest percentage increase in the distribution of COCs in 2021-22 against previous years (2020-21). States/UTs wise COCs (cycle) distribution (in Crores) is provided at Annexure-5.14.

Figure 5.24: Top 10 states reported maximum COCs(cycle) distribution (in Crores) HMIS-2021-22



5.8 Highlights of the Family Planning Programme in India

Over the years Family Planning program has been repositioned to not only achieve population stabilization goals but also reduce maternal, infant and child morbidities and mortalities. Pandemic years 2020-21 and 2021-22 were challenging years for all services including Family Planning.

The key programmatic highlights for the year 2020-21 and 2021-22 are as follows:

In spite of the huge challenges encountered on account of the pandemic, the programme was able to stand ground and barring a few expected setbacks specially in the reduction of sterilizations performed (since the OTs were closed in the initial peak period) was able to either improve or maintain its performance over the last two years in PPIUCD, Chhaya and Injectable contraceptives.

1. Growth in PPIUCDs performance was reported in 2020-21 and 2021-22. Performance of PPIUCD insertion improved on average of ~11.7%.
2. Injectable MPAs performance showed only a marginal decline of around 3% in 2020-21 but in the year 2021-22 the performance improved by ~26%.
3. Centchroman (Chhaya), the indigenously developed weekly contraceptive pill was an exemplifier across most of the states and its national performance more than doubled over the last year. In the year 2019-20 its distribution improved by 65% compared to 2019 -20 and in 2021-22, it further improved by 35% when compared with 2020-21.
4. The acceptance of PAIUCD in the Year 2020-21 declined by nearly 10% but in 2021-22, it has started improving and expected to reach to the Pre pandemic level.
5. Expectedly, due to the restrictions imposed and OTs being instructed to close for routine surgeries, sterilization services declined by ~ 20% but in 2021-22 it has started improving and reported a growth of ~11% compared to 2020-21.
6. The WPD fortnight 2020 too was observed, where there was increase in use of spacing methods both in 2020-21 and 2021-22.
7. The MPV districts performed better than their counterparts and contributed to 66% of all Injectable MPA administrations.
8. The failure and death rates following sterilization have also declined.

Annexure-5.1

States/UTs wise number of Injectable Contraceptive MPA (Antara Programme) during 2020-21 & 2021-22 as reported in HMIS

States/UTs	2020-21	2021-22
All India	1880981	2374846
Andaman & Nicobar Islands	1058	1414
Andhra Pradesh	2164	1187
Arunachal Pradesh	820	1177
Assam	61514	64843
Bihar	264200	276489
Chandigarh	2728	2212
Chhattisgarh	25463	24745
Delhi	18833	22504
Goa	840	775
Gujarat	77349	67314
Haryana	32043	20943
Himachal Pradesh	4845	6516
Jammu and Kashmir	28109	36150
Jharkhand	107162	126963
Karnataka	61871	74146
Kerala	3611	2577
Ladakh	694	795
Lakshadweep	5	0
Madhya Pradesh	100914	106365
Maharashtra	18667	45776
Manipur	119	231
Meghalaya	20401	27580
Mizoram	2241	2708
Nagaland	44	711
Odisha	31625	46759
Puducherry	1851	1720
Punjab	12748	3075
Rajasthan	269959	315522
Sikkim	2848	2987
Tamil Nadu	64274	62234
Telangana	17052	15280
DD &DNH	2364	1436
Tripura	1147	1928
Uttar Pradesh	338147	599583
Uttarakhand	4724	8834
West Bengal	298547	401367

Annexure-5.2

States/UTs wise number of total IUDC insertions as reported in HMIS

States/UTs	2020-21	2021-22
All India	5472357	6055436
Andaman & Nicobar Islands	718	575
Andhra Pradesh	82102	74320
Arunachal Pradesh	2600	2572
Assam	144765	156673
Bihar	247719	244656
Chandigarh	2780	4153
Chhattisgarh	147871	145842
Delhi	64685	80818
Goa	491	567
Gujarat	577628	641786
Haryana	187329	190354
Himachal Pradesh	11063	9216
Jammu and Kashmir	11372	15166
Jharkhand	152376	167353
Karnataka	218463	223168
Kerala	24150	25350
Ladakh	842	1010
Lakshadweep	12	17
Madhya Pradesh	358629	363729
Maharashtra	362097	422466
Manipur	1779	1899
Meghalaya	2914	2566
Mizoram	1550	1406
Nagaland	2976	3866
Odisha	184431	153698
Puducherry	3560	3297
Punjab	97541	82607
Rajasthan	512277	518803
Sikkim	672	398
Tamil Nadu	380762	428965
Telangana	28322	37064
DD and DNH	450	562
Tripura	674	1415
Uttar Pradesh	1080287	1458245
Uttarakhand	33138	34565
West Bengal	543332	556289

Annexure-5.3

States/UTs wise number of total Postpartum IUCD Insertions as reported in HMIS

States/UTs	2020-21	2021-22
All India	**2742840**	**3110067**
Andaman & Nicobar Islands	485	353
Andhra Pradesh	3057	9585
Arunachal Pradesh	647	607
Assam	87480	97709
Bihar	143074	148062
Chandigarh	1256	2073
Chhattisgarh	67107	66776
Delhi	51321	58398
Goa	108	95
Gujarat	119677	139112
Haryana	84903	90860
Himachal Pradesh	3092	1661
Jammu and Kashmir	2639	3559
Jharkhand	88181	100577
Karnataka	111190	113375
Kerala	2333	2451
Ladakh	140	37
Lakshadweep	2	10
Madhya Pradesh	206905	215239
Maharashtra	117467	142179
Manipur	195	289
Meghalaya	830	865
Mizoram	366	428
Nagaland	126	249
Odisha	126653	99057
Puducherry	2947	2639
Punjab	31320	26052
Rajasthan	268300	263410
Sikkim	416	181
Tamil Nadu	319928	360166
Telangana	4885	12861
DD and DNH	162	243
Tripura	259	956
Uttar Pradesh	478083	733902
Uttarakhand	9447	9296
West Bengal	407859	406755

Annexure-5.4

States/UTs wise number of total Interval IUCD Insertions as reported in HMIS

States/UTs	2020-21	2021-22
All India	2663780	2875389
Andaman & Nicobar Islands	183	190
Andhra Pradesh	78737	64351
Arunachal Pradesh	1839	1850
Assam	46259	46733
Bihar	102941	95037
Chandigarh	1418	1969
Chhattisgarh	78227	76436
Delhi	11326	19906
Goa	331	385
Gujarat	453669	498457
Haryana	101350	98511
Himachal Pradesh	7894	7451
Jammu and Kashmir	8601	11402
Jharkhand	63061	65230
Karnataka	101965	104972
Kerala	21508	22594
Ladakh	661	840
Lakshadweep	10	7
Madhya Pradesh	147321	143918
Maharashtra	239600	274472
Manipur	1571	1595
Meghalaya	2046	1647
Mizoram	1132	947
Nagaland	2814	3534
Odisha	51359	49828
Puducherry	569	619
Punjab	65836	56263
Rajasthan	241257	253049
Sikkim	245	217
Tamil Nadu	59348	66116
Telangana	22326	23484
DD and DNH	214	224
Tripura	319	383
Uttar Pradesh	595585	714936
Uttarakhand	23541	24966
West Bengal	128717	142870

Annexure-5.5

States/UTs wise number of total Post Abortion IUCD Insertions as reported in HMIS

States/UTs	2020-21	2021-22
All India	65737	69980
Andaman & Nicobar Islands	50	32
Andhra Pradesh	308	384
Arunachal Pradesh	114	115
Assam	11026	12231
Bihar	1704	1557
Chandigarh	106	111
Chhattisgarh	2537	2630
Delhi	2038	2514
Goa	52	87
Gujarat	4282	4217
Haryana	1076	983
Himachal Pradesh	77	104
Jammu and Kashmir	132	205
Jharkhand	1134	1546
Karnataka	5308	4821
Kerala	309	305
Ladakh	41	133
Lakshadweep	0	0
Madhya Pradesh	4403	4572
Maharashtra	5030	5815
Manipur	13	15
Meghalaya	38	54
Mizoram	52	31
Nagaland	36	83
Odisha	6419	4813
Puducherry	44	39
Punjab	385	292
Rajasthan	2720	2344
Sikkim	11	0
Tamil Nadu	1486	2683
Telangana	1111	719
DD and DNH	74	95
Tripura	96	76
Uttar Pradesh	6619	9407
Uttarakhand	150	303
West Bengal	6756	6664

Annexure-5.6

States/UTs wise number of total Sterilization as reported in HMIS

States/UTs	2020-21	2021-22
All India	2697810	3008751
Andaman & Nicobar Islands	593	600
Andhra Pradesh	114246	110287
Arunachal Pradesh	621	864
Assam	21923	24085
Bihar	332520	363183
Chandigarh	1110	1293
Chhattisgarh	30985	63908
Delhi	7884	11655
Goa	1485	1463
Gujarat	231010	283749
Haryana	46497	46088
Himachal Pradesh	2677	4450
Jammu and Kashmir	6685	9874
Jharkhand	89289	91799
Karnataka	212427	221549
Kerala	53433	54788
Ladakh	92	72
Lakshadweep	85	52
Madhya Pradesh	318420	334227
Maharashtra	211791	281612
Manipur	456	364
Meghalaya	2183	2232
Mizoram	1105	878
Nagaland	640	902
Odisha	55398	83799
Puducherry	3882	4934
Punjab	14873	16286
Rajasthan	233675	218759
Sikkim	126	89
Tamil Nadu	225711	231536
Telangana	54141	95151
DD & DNH	723	926
Tripura	2151	2874
Uttar Pradesh	296141	301707
Uttarakhand	9051	10986
West Bengal	113781	131730

Annexure-5.7

States/UTs wise number of total Male Sterilization as reported in HMIS

States/UTs	2020-21	2021-22
All India	**26424**	**33635**
Andaman & Nicobar Islands	0	2
Andhra Pradesh	515	804
Arunachal Pradesh	0	0
Assam	562	466
Bihar	1650	2077
Chandigarh	12	20
Chhattisgarh	2826	4469
Delhi	78	314
Goa	1	3
Gujarat	620	645
Haryana	1187	1339
Himachal Pradesh	328	324
Jammu and Kashmir	94	127
Jharkhand	1408	1216
Karnataka	722	590
Kerala	74	299
Ladakh	0	2
Lakshadweep	0	0
Madhya Pradesh	2778	2897
Maharashtra	5276	7414
Manipur	2	0
Meghalaya	2	5
Mizoram	0	1
Nagaland	1	2
Odisha	719	993
Puducherry	2	3
Punjab	279	240
Rajasthan	1955	2013
Sikkim	0	2
Tamil Nadu	689	863
Telangana	1669	2742
DD & DNH	4	8
Tripura	4	22
Uttar Pradesh	1932	2903
Uttarakhand	154	226
West Bengal	881	604

Annexure-5.8

States/UTs wise number of total Female Sterilization as reported in HMIS

States/UTs	2020-21	2021-22
All India	2671386	2975116
Andaman & Nicobar Islands	593	598
Andhra Pradesh	113731	109483
Arunachal Pradesh	621	864
Assam	21361	23619
Bihar	330870	361106
Chandigarh	1098	1273
Chhattisgarh	28159	59439
Delhi	7806	11341
Goa	1484	1460
Gujarat	230390	283104
Haryana	45310	44749
Himachal Pradesh	2349	4126
Jammu and Kashmir	6591	9747
Jharkhand	87881	90583
Karnataka	211705	220959
Kerala	53359	54489
Ladakh	92	70
Lakshadweep	85	52
Madhya Pradesh	315642	331330
Maharashtra	206515	274198
Manipur	454	364
Meghalaya	2181	2227
Mizoram	1105	877
Nagaland	639	900
Odisha	54679	82806
Puducherry	3880	4931
Punjab	14594	16046
Rajasthan	231720	216746
Sikkim	126	87
Tamil Nadu	225022	230673
Telangana	52472	92409
DD & DNH	719	918
Tripura	2147	2852
Uttar Pradesh	294209	298804
Uttarakhand	8897	10760
West Bengal	112900	131126

Annexure-5.9

States/UTs wise Sterilization and Method Wise -% of Female Sterilization 2021-22 as reported in HMIS

States/UTs	Female Sterilization	Laparoscopic	Mini-lap	Postpartum sterilizations	Post Abortion sterilizations	% Method Wise -Female Sterilization			
						Laparoscopic	Mini-lap	Postpartum sterilizations	Post Abortion sterilizations
All India	2975116	1123101	1082401	720495	49119	37.7	36.4	24.2	1.7
A & N Islands	598	161	138	249	50	26.9	23.1	41.6	8.4
Andhra Pradesh	109483	9090	41977	57235	1181	8.3	38.3	52.3	1.1
Arunachal Pradesh	864	218	376	262	8	25.2	43.5	30.3	0.9
Assam	23619	9775	196	13284	364	41.4	0.8	56.2	1.5
Bihar	361106	351	334108	22696	3951	0.1	92.5	6.3	1.1
Chandigarh	1273	149	65	959	100	11.7	5.1	75.3	7.9
Chhattisgarh	59439	10051	36462	12328	598	16.9	61.3	20.7	1
Delhi	11341	2368	1004	6713	1256	20.9	8.9	59.2	11.1
Goa	1460	67	96	1231	66	4.6	6.6	84.3	4.5
Gujarat	283104	173128	93429	13570	2977	61.2	33	4.8	1.1
Haryana	44749	7240	28168	9169	172	16.2	62.9	20.5	0.4
Himachal Pradesh	4126	2477	262	1362	25	60	6.3	33	0.6
Jammu and Kashmir	9747	2588	1858	5024	277	26.6	19.1	51.5	2.8
Jharkhand	90583	7372	72904	9417	890	8.1	80.5	10.4	1
Karnataka	220959	99756	55413	61871	3919	45.1	25.1	28	1.8
Kerala	54489	6445	3039	44318	687	11.8	5.6	81.3	1.3
Ladakh	70	0	25	45	0	0	35.7	64.3	0
Lakshadweep	52	1	3	48	0	1.9	5.8	92.3	0
Madhya Pradesh	331330	272711	30106	26409	2104	82.3	9.1	8	0.6
Maharashtra	274198	65842	148441	51604	8311	24	54.1	18.8	3
Manipur	364	0	2	359	3	0	0.5	98.6	0.8
Meghalaya	2227	23	635	1526	43	1	28.5	68.5	1.9
Mizoram	877	20	390	459	8	2.3	44.5	52.3	0.9
Nagaland	900	435	191	264	10	48.3	21.2	29.3	1.1
Odisha	82806	31404	30366	20666	370	37.9	36.7	25	0.4
Puducherry	4931	285	263	4013	370	5.8	5.3	81.4	7.5
Punjab	16046	3334	5919	6631	162	20.8	36.9	41.3	1
Rajasthan	216746	167726	23645	23935	1440	77.4	10.9	11	0.7
Sikkim	87	0	1	85	1	0	1.1	97.7	1.1
Tamil Nadu	230673	21066	20327	176123	13157	9.1	8.8	76.4	5.7
Telangana	92409	22949	23244	45502	714	24.8	25.2	49.2	0.8
The DNH and DD	918	162	300	281	175	17.6	32.7	30.6	19.1
Tripura	2852	817	189	1782	64	28.6	6.6	62.5	2.2
Uttarakhand	298804	6422	2109	2154	75	59.7	19.6	20	0.7
Uttar Pradesh	10760	193923	81941	19298	3642	64.9	27.4	6.5	1.2
West Bengal	131126	4745	44809	79623	1949	3.6	34.2	60.7	1.5

Annexure-5.10

States/UTs wise % of Postpartum Sterilizations to Total Institutional Deliveries as reported in HMIS

States/UTs	Number of total Institutional Deliveries		Number of total Postpartum Sterilizations		% of Postpartum Sterilizations to Total Institutional Deliveries	
	2020-21	2021-22	2020-21	2021-22	2020-21	2021-22
All India	19374124	19506071	667555	720495	3.4	3.7
A & N Islands	3989	3679	345	249	8.6	6.8
Andhra Pradesh	708333	751363	63908	57235	9.0	7.6
Arunachal Pradesh	18260	18492	238	262	1.3	1.4
Assam	519499	523369	12456	13284	2.4	2.5
Bihar	1883778	1763380	17107	22696	0.9	1.3
Chandigarh	16535	19705	882	959	5.3	4.9
Chhattisgarh	464804	472675	7436	12328	1.6	2.6
Delhi	195361	217255	5157	6713	2.6	3.1
Goa	15717	14504	1285	1231	8.2	8.5
Gujarat	1109729	1091927	11539	13570	1.0	1.2
Haryana	482768	495223	7790	9169	1.6	1.9
Himachal Pradesh	80892	82252	1374	1362	1.7	1.7
Jammu and Kashmir	167197	182620	3403	5024	2.0	2.8
Jharkhand	703155	687366	6687	9417	1.0	1.4
Karnataka	856459	878101	64417	61871	7.5	7.0
Kerala	419786	426021	45028	44318	10.7	10.4
Ladakh	3588	3514	49	45	1.4	1.3
Lakshadweep	1165	922	79	48	6.8	5.2
Madhya Pradesh	1314958	1256159	23955	26409	1.8	2.1
Maharashtra	1761485	1743021	42443	51604	2.4	3.0
Manipur	24845	23476	421	359	1.7	1.5
Meghalaya	50051	47508	1495	1526	3.0	3.2
Mizoram	17544	16798	530	459	3.0	2.7
Nagaland	12530	12985	162	264	1.3	2.0
Odisha	628521	619285	17326	20666	2.8	3.3
Puducherry	26252	31656	3425	4013	13.0	12.7
Punjab	354607	369816	7319	6631	2.1	1.8
Rajasthan	1338936	1274814	21104	23935	1.6	1.9
Sikkim	7223	6698	120	85	1.7	1.3
Tamil Nadu	918410	920649	179823	176123	19.6	19.1
Telangana	517245	595765	30438	45502	5.9	7.6
The DNH and DD	10251	10515	270	281	2.6	2.7
Tripura	46281	47448	1534	1782	3.3	3.8
Uttar Pradesh	3409843	3520709	16472	19298	0.5	0.5
Uttarakhand	134140	139592	1926	2154	1.4	1.5
West Bengal	1149987	1236809	69612	79623	6.1	6.4

Annexure-5.11
States/UTs wise number of Post Abortion Sterilizations (PAS) as reported in HMIS

States/UTs	2020-21	2021-22
All India	42572	49119
A & N Islands	43	50
Andhra Pradesh	412	1181
Arunachal Pradesh	51	8
Assam	535	364
Bihar	5370	3951
Chandigarh	45	100
Chhattisgarh	493	598
Delhi	729	1256
Goa	59	66
Gujarat	2637	2977
Haryana	164	172
Himachal Pradesh	22	25
Jammu and Kashmir	113	277
Jharkhand	890	890
Karnataka	4324	3919
Kerala	727	687
Ladakh	0	0
Lakshadweep	0	0
Madhya Pradesh	1693	2104
Maharashtra	5643	8311
Manipur	1	3
Meghalaya	23	43
Mizoram	23	8
Nagaland	33	10
Odisha	404	370
Puducherry	147	370
Punjab	155	162
Rajasthan	1054	1440
Sikkim	4	1
Tamil Nadu	9845	13157
Telangana	966	714
The DNH and DD	160	175
Tripura	16	64
Uttar Pradesh	4018	3642
Uttarakhand	33	75
West Bengal	1740	1949

Annexure-5.12

States/UTs wise number of Centchroman (weekly pills distributed) as reported in HMIS

States/UTs	2020-21	2021-22
All India	5704728	7644553
Andaman & Nicobar Islands	364	378
Andhra Pradesh	107150	125953
Arunachal Pradesh	2394	3829
Assam	83732	103979
Bihar	563502	782487
Chandigarh	1310	1254
Chhattisgarh	116746	164742
Delhi	75303	97582
Goa	2533	1817
Gujarat	185062	229085
Haryana	134864	119401
Himachal Pradesh	15193	13104
Jammu and Kashmir	46729	51401
Jharkhand	599062	886264
Karnataka	304945	313009
Kerala	11936	10085
Ladakh	453	714
Lakshadweep	248	154
Madhya Pradesh	399192	467884
Maharashtra	170976	237383
Manipur	2862	2920
Meghalaya	4697	6130
Mizoram	1248	4011
Nagaland	617	418
Odisha	68999	138519
Puducherry	4681	4468
Punjab	74300	84022
Rajasthan	297737	381088
Sikkim	773	404
Tamil Nadu	172311	237297
Telangana	82839	94863
DD & DNH	10022	10425
Tripura	3200	5391
Uttar Pradesh	1208717	1956198
Uttarakhand	15564	27922
West Bengal	934467	1079972

Annexure-5.13

States/UTs wise number of Condom pieces distributed as reported in HMIS

States/UTs	2020-21	2021-22
All India	314518581	337004163
Andaman & Nicobar Islands	163080	186214
Andhra Pradesh	20394334	29642165
Arunachal Pradesh	52565	43422
Assam	4775222	5375076
Bihar	8886859	9647106
Chandigarh	1536917	1540268
Chhattisgarh	5087257	5774503
Delhi	4208214	5467347
Goa	322176	253804
Gujarat	24318739	23260502
Haryana	15408830	13133310
Himachal Pradesh	3329837	2771288
Jammu and Kashmir	2631354	2124788
Jharkhand	12369562	15473133
Karnataka	15571320	15859137
Kerala	1137799	1297324
Ladakh	18776	24388
Lakshadweep	11653	10501
Madhya Pradesh	22816670	22752934
Maharashtra	16554896	19892567
Manipur	100289	100521
Meghalaya	295059	284600
Mizoram	124254	134386
Nagaland	88289	92134
Odisha	8018401	8493567
Puducherry	1032741	1051506
Punjab	22211963	19572237
Rajasthan	37520148	36989879
Sikkim	239126	203195
Tamil Nadu	5001917	5573710
Telangana	4839132	4670334
DD & DNH	1105561	1052503
Tripura	189340	254469
Uttar Pradesh	44107645	52185494
Uttarakhand	1526602	3441461
West Bengal	28522054	28374390

Annexure-5.14

States/UTs wise number of Combined Oral Pills (COCs Cycle) distributed as reported in HMIS

States/UTs	2020-21	2021-22
All India	**44297968**	**48370435**
Andaman & Nicobar Islands	16931	17683
Andhra Pradesh	2223525	3318829
Arunachal Pradesh	40103	41671
Assam	2464391	3154346
Bihar	1185003	1379747
Chandigarh	19103	23001
Chhattisgarh	910603	1014908
Delhi	133400	167867
Goa	12862	12993
Gujarat	2379041	2245623
Haryana	890848	751873
Himachal Pradesh	220110	190694
Jammu and Kashmir	476372	473847
Jharkhand	2632213	3508578
Karnataka	1990412	2006304
Kerala	87283	100258
Ladakh	3976	3723
Lakshadweep	1089	1652
Madhya Pradesh	4431963	4477287
Maharashtra	2952007	3209159
Manipur	35394	33352
Meghalaya	134400	125272
Mizoram	94072	94143
Nagaland	13373	20329
Odisha	1819329	1740977
Puducherry	15404	16794
Punjab	1116550	1022763
Rajasthan	3765166	3829205
Sikkim	73287	74675
Tamil Nadu	387839	356132
Telangana	773644	753393
DD & DNH	31190	29424
Tripura	125871	249517
Uttar Pradesh	4618356	5050133
Uttarakhand	200057	324274
West Bengal	8022801	8550009

Chapter 6

ADOLESCENT HEALTH

What is Adolescence?

Adolescence is the phase of life between childhood and adulthood, from ages 10 to 19. It is a unique stage of human development and an important time for laying the foundations of good health. Despite being thought of as a healthy stage of life, during this phase, adolescents establish patterns of behaviour – for instance, related to diet, physical activity, substance use, and sexual activity – that can protect their health and the health of others around them, or put their health at risk now and in the future.

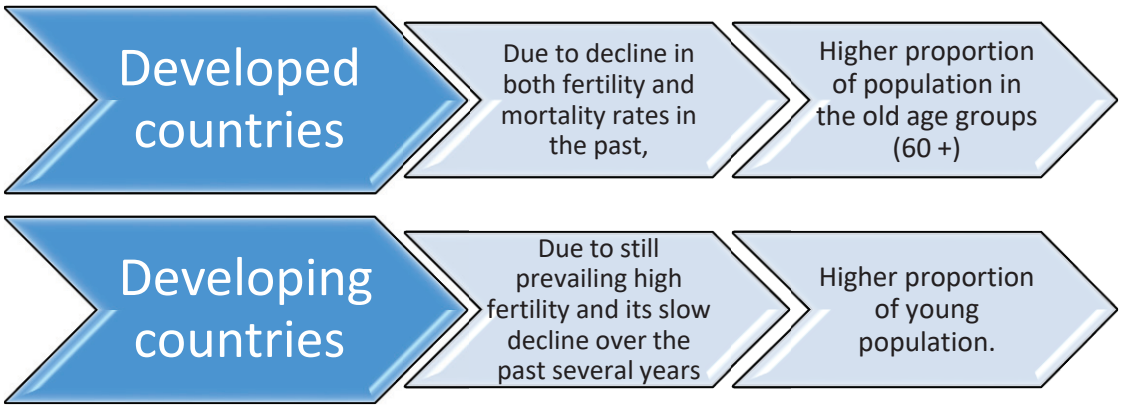
To grow and develop in good health, adolescents need information, including age-appropriate life skills education; health services that are acceptable, equitable, appropriate and effective; and safe and supportive environments. They also need opportunities to meaningfully participate in the design and delivery of interventions to improve and maintain their health. Expanding such opportunities is key to responding to adolescents' specific needs and rights.

Current Status

The total estimated population of the world in 2010 was 6.91 billion. The number of persons in the age group 10-19 years (defined as Adolescents) was 1.19 billion and that in the age group 15-24 years (defined as Youth) was 1.22 billion. Together, the adolescent and youth population (10-24 years) constituted about 1.82 billion (or 26.3%) of the total population in the world.

The population of the young varies from country to country depending upon rate of fertility and mortality levels of the population.

Figure 6.1: Adolescent Population in Developing and Developed countries



In India, as per Census 2011, adolescent population (10-19) is 253.2 million and that of the youth (15-24) is 231.9 million, constituting 20.9 per cent and 19.2 per cent of the total population respectively. The population of the young (10-24) is 364.6 million (30.1%). There has been a decline in the proportion of adolescent population and an increase of youth population compared to Census 2001.

Why focus on adolescents?

India has the largest adolescent population in the world, 253 million, and every fifth person being between 10 to 19 years. India stands to benefit socially, politically and economically if this large number of adolescents are safe, healthy, educated and equipped with information and life skills to support the country's continued development.

Both adolescent girls and boys lack access to information on issues affecting their lives and have limited spaces to develop competencies crucial for active participation. Adolescent girls, especially, are exposed to multiple layers of vulnerability due to pernicious social norms affecting the value of girls, which in turn affects their ability to move freely and to make decisions affecting their work, education, marriage and social relationships.

About 43 per cent of girls drop out before completing secondary education due to household responsibilities, marriage, child labour, limited relevance of education for employment and employability, distance to school and/or lack of sanitation facilities at the school. Menstruation disrupts the lives of girls in ways that are unimaginable in many countries. At least 42 per cent of girls in India use cloth rather than disposable sanitary napkins ***(source unicef.org)***.

Initiatives of MoHFW for Adolescents

To ensure holistic development of Adolescent Population, the Ministry of Health and Family Welfare launched Rashtriya Kishor Swasthya Karyakram (RKSK) on 7th January 2014 to reach out to 253 million adolescents including adolescent:

- male and female,
- rural and urban,
- married and unmarried,
- in and out-of-school adolescents
- with special focus on marginalized and underserved groups.

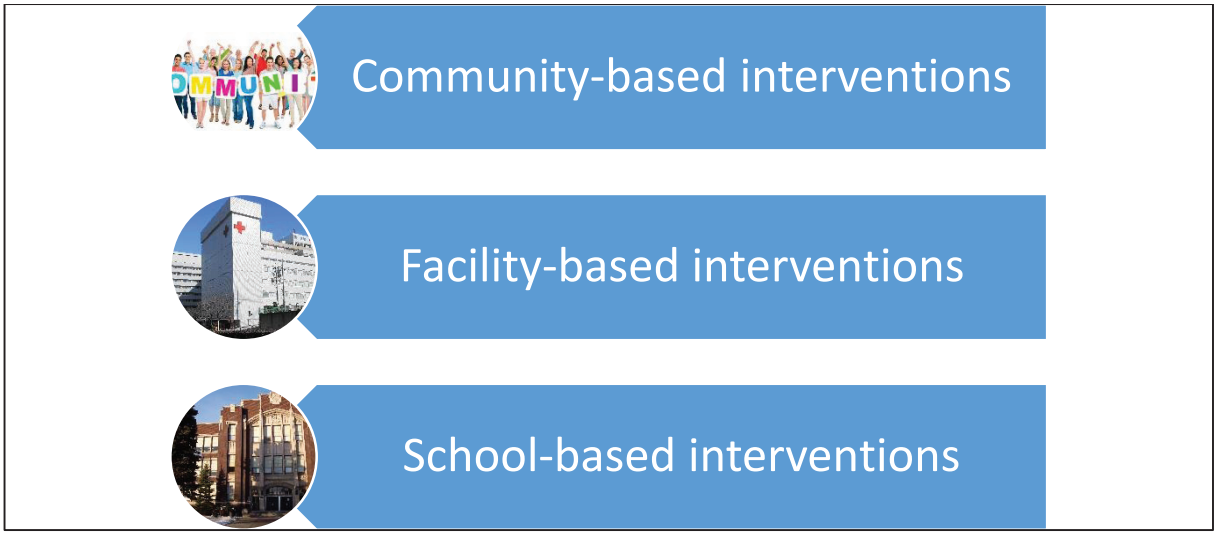
The expanded scope of adolescent health programming in India now include the below six thematic areas

- Sexual and reproductive health,
- Nutrition,
- Injuries and violence (including gender based violence),
- Non-communicable diseases,
- Substance Misuse,
- Mental health

The strength of the program is its health promotion approach. It is a paradigm shift from the existing clinic-based services to promotion, prevention and reaching adolescents in their own environment, such as in schools, families and communities.

The interventions under RKSK can be broadly grouped into three categories:

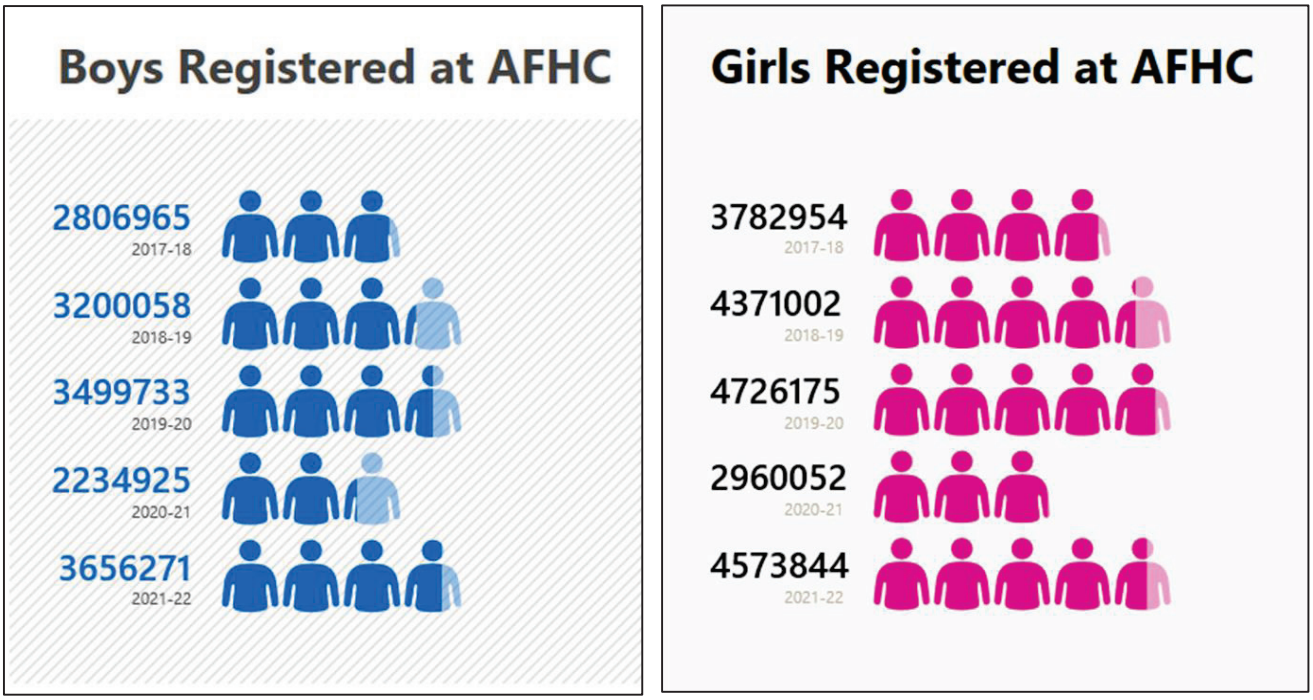
Figure 6.2: Interventions under RKSK



Adolescent Friendly Health Clinics (AFHC)

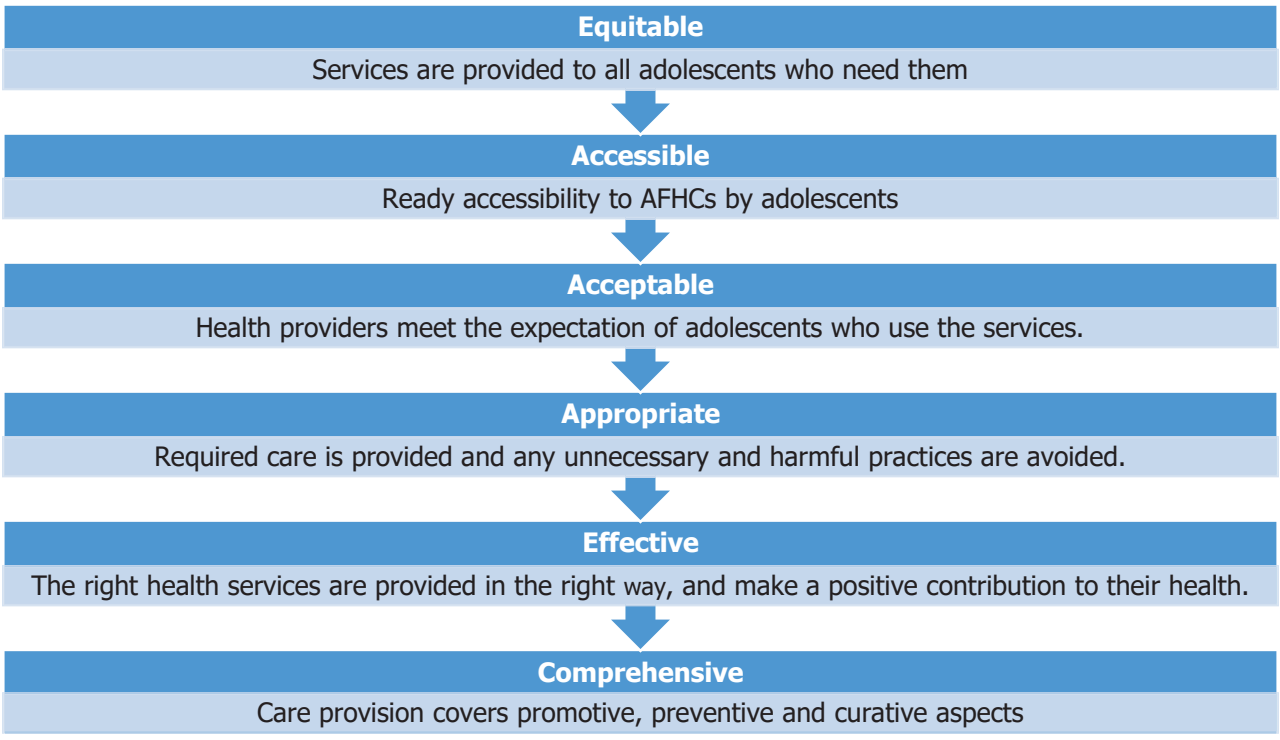
The approach, in the form of Adolescent Reproductive Sexual Health (ARSH) Clinics to provide counselling on sexual & reproductive health issues only was initiated in 2006 under RCH II. Now with the Rashtriya Kishor Swasthya Karyakram (RKSK) its facility based approach the programme has AFHCs which entail a whole gamut of clinical and counselling services on diverse adolescent health issues ranging from Sexual and Reproductive Health (SRH) to Nutrition, Substance abuse, Injuries and Violence (including Gender based violence, Non Communicable Diseases and Mental Health. These adolescent friendly health services are delivered through trained service providers- MO, ANM and Counsellors at AFHCs located at Primary Health Centers (PHCs), Community Health Centers (CHCs), District Hospitals (DHs) and Medical Colleges. Over the years there has been an increase in the number of boys and girls registered in AFHC with a drop appearing in the year 2020-21 owing to Covid-19.

Figure 6.3 Number of boys and girls registered in AFHC from 2017-18 to 2021-22



The key 'friendly' component of AFHC mandates facility-based clinical and counselling services for adolescents, which are non-judgemental, empathetic alongside having the following too.

Figure 6.4 Components of an AFHC



During the year 2020-21, 52 lakh adolescents registered with the AFHCs, which increased to 82 lakhs during the year 2021-22. On comparing the adolescents registered per lakh estimated population for two years it can be seen that there has been a phenomenal increase in the figures which has increased from 383 to 601 during 2020-21 and 2021-22 (Table 6.1). The State/ UT-wise details are given at **Annexure 6.3 & Annexure 6.4**. Most of the states have registered an increase in the registration of adolescents at AFHCs except a few.

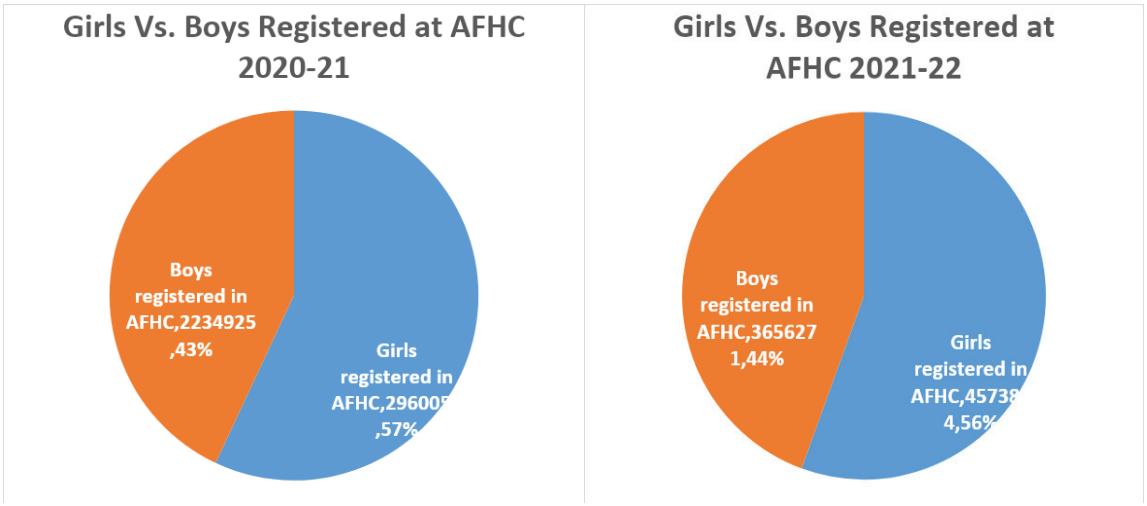
Table 6.1: Comparative coverage of Adolescent Registration per lakh population during 2020-21 and 2021-22

State/ UT	Adolescents registered per 1 lakh population*	Adolescents registered per 1 lakh population**
	2020-21	**2021-22**
India	**383**	**601**
Andaman & Nicobar Islands	683	1759
Andhra Pradesh	283	1673
Arunachal Pradesh	620	737
Assam	73	82
Bihar	24	43
Chandigarh	639	757
Chhattisgarh	387	839
Delhi	488	726
Goa	840	1361
Gujarat	440	507
Haryana	414	532
Himachal Pradesh	296	414
Jammu And Kashmir	271	410
Jharkhand	212	262
Karnataka	519	693
Kerala	88	234
Ladakh	205	337
Lakshadweep	0	0
Madhya Pradesh	238	230
Maharashtra	454	684
Manipur	259	354
Meghalaya	1049	1073
Mizoram	1316	1095
Nagaland	301	347
Odisha	138	194
Puducherry	5269	4283
Punjab	81	78
Rajasthan	1271	1921
Sikkim	1701	1578
Tamil Nadu	754	1341
Telangana	144	156
The DNH & DD	670	615
Tripura	293	412
Uttar Pradesh	210	273
Uttarakhand	486	726
West Bengal	618	908

* Mid year population as on 1st October 2020 ** Mid year population as on 1st October 2021

Figures in red indicate a decline in data over the previous year

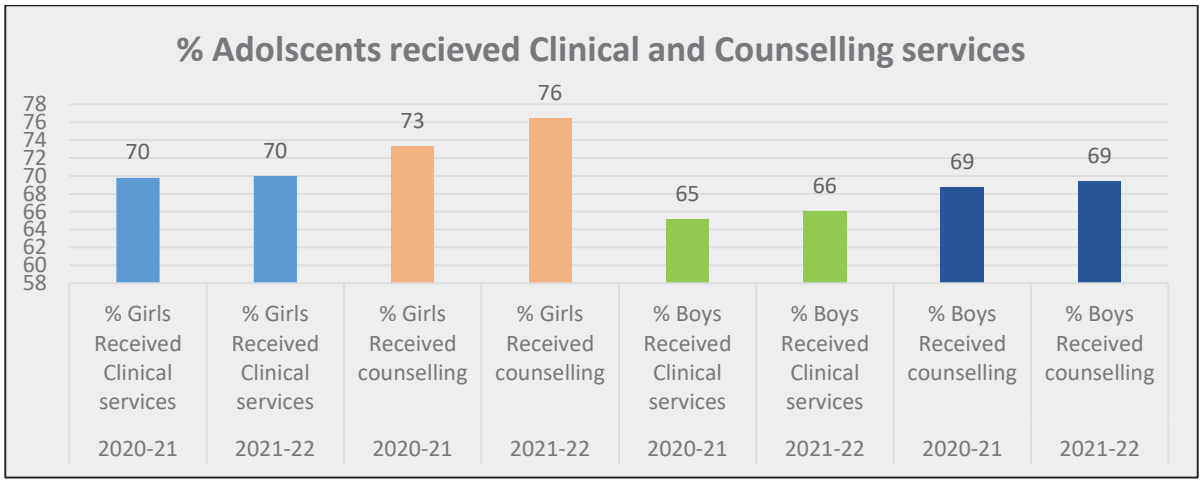
Figure 6.5 GIRLS VS. BOYS REGISTERED AT AFHCs 2020-21 and 2021-22



At all India level, among the total adolescents registered with the AFHC there has been an increase in the number of registrations in 2021-22 when compared to 2020-21. But, it can be seen that the percentage of girls registering at AFHC is more than Boys in both the years.

As per the programme guidelines after the girls and boys register with an AFHC there is a provision to provide counselling or Clinical Services to these adolescents. Following table depicts the % of girls and boys receiving Clinical and Counselling services respectively during 2 years.

Figure 6.6 Percentage of Adolescents receiving Clinical and Counselling services at AFHC 2020-21 and 2021-22



The state wise trends show that more than 60% adolescents are getting each clinical and counselling services at AFHC, except Kerala, Puducherry and Tamil Nadu where the total % of children receiving clinical and counselling services is less than the number of adolescents registered in 2021-22.

School Health & Wellness Programme

Schools play a critical role in helping students establish lifelong healthy behaviours. Recognizing the importance of this, school based health promotion activities have been incorporated as a part of the Health and Wellness component of the Ayushman Bharat Programme. School Health & Wellness Programme (launched in Feb 2020) is being implemented in government and government aided schools in select districts (including aspirational districts). Two teachers, preferably one male and one female, in every school, designated as "Health and Wellness Ambassadors" are trained to transact health promotion and disease prevention information on 11 thematic areas in the form of interesting joyful interactive activities for one hour every week to promote joyful learning among school children.

Weekly Iron folic acid supplementation (WIFS)

The Ministry of Health and Family Welfare has launched the Weekly Iron and Folic Acid Supplementation (WIFS) Programme to meet the challenge of high prevalence of anaemia amongst adolescent girls and boys. WIFS is evidence based programmatic response to the prevailing anaemia situation amongst adolescent girls and boys through supervised weekly ingestion of IFA supplementation and biannual helminthic control. The long term goal is to break the intergenerational cycle of anaemia, the short term benefit is of a nutritionally improved human capital. The programme, implemented across the country both in rural and urban areas, for both in and out of school adolescents.

The interventions in the programme include:

- Administration of supervised Weekly Iron-folic Acid Supplements of 60 mg elemental iron and 500ug Folic acid using a fixed day approach.
- Screening of target groups for moderate/severe anaemia and referring these cases to an appropriate public health facility.
- Biannual de-worming (Albendazole 400mg), six months apart, for control of helminthic infestation.
- Information and counselling for improving dietary intake and for taking actions for prevention of intestinal worm infestation.

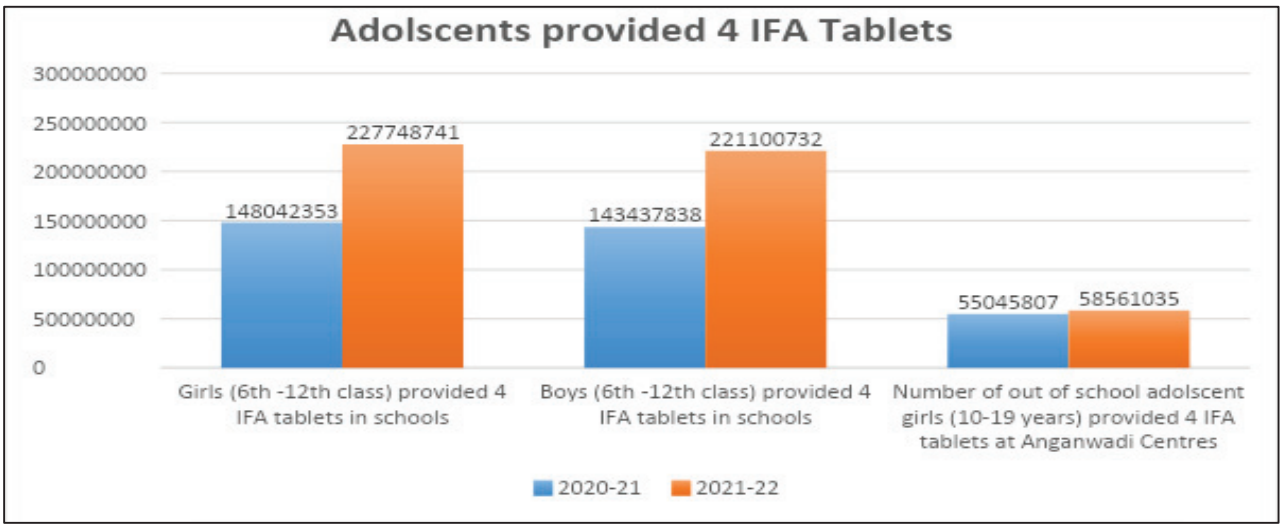
The programme has been rolled out in all States/UTs. The programme covers 11.2 crore beneficiaries including 9.7 crore in-school and 1.5 crore out of school beneficiaries.

Adolescents provided Iron Folic Acid

Overall there has been increase in the number of adolescents provided 4 IFA in 2021-22 as compared to 2020-21, whereas a few states/ UTs have exhibited a decline i.e. Arunachal Pradesh, Himachal Pradesh, Odisha and Puducherry. Delhi has not reported any data for 2021-22. Lakshadweep has not reported any data during both the years for IFA provision. Sikkim has not reported any data for school going adolescents during both the years

The programme has been rolled out in all States/UTs. The programme covers 11.2 crore beneficiaries including 9.7 crore in-school and 1.5 crore out of school beneficiaries. The State/ UT-wise details are given at **Annexure 6.1.**

Figure 6.7 Percentage of Adolescents receiving Clinical and Counselling services at AFHC 2020-21 and 2021-22

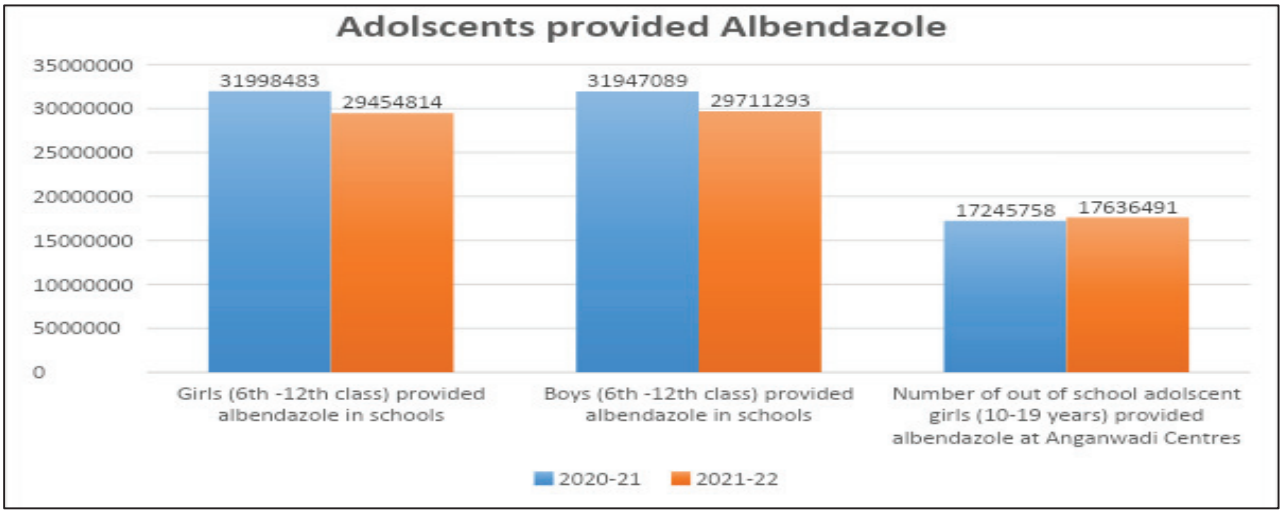


Adolescents provided Albendazole

At All India level a decline of around 8% has been noticed in provision of Albendazole to adolescents including School going Girls, Boys and out of school girls. The same has been mainly contributed by Andhra Pradesh, Bihar, Chattisgarh, Gujarat, Haryana, Himachal Pradesh and Uttar Pradesh who have reported more than 40% decline in 2021-22 as compared to 2020-21.

Lakshadweep has not reported any data for both of the years, whereas 6 States/ UTs did not report data during 2020-21 which include A&N Islands, Delhi, Kerala, Ladakh, Meghalaya and Sikkim, whereas during 2021-22 these States/ UTs have reported data on albendazole provision to Adolescents. The State/ UT-wise details are given at **Annexure 6.2.**

Figure 6.8 Comparative Adolescents provided Albendazole 2020-21 and 2021-22



Menstrual Hygiene Scheme:

The Ministry of Health and Family Welfare is implementing a scheme for promotion of menstrual hygiene among adolescent girls in the age group of 10-19 years since 2011. The major objectives of the scheme are:

1. To increase awareness among adolescent girls on Menstrual Hygiene
2. To increase access to and use of high quality sanitary napkins to adolescent girls
3. To ensure safe disposal of sanitary napkins in an environmentally friendly manner.

For implementation of the Scheme, funds are now being provided to States/UTs under National Health Mission based on the proposals received from them in their Programme Implementation Plans, for decentralized procurement of sanitary napkin packs. These are provided to the adolescent girls at a subsidized rate of Rs 6 for a pack of 6 napkins by the ASHA, who is responsible for distribution, receiving an incentive @ Rs 1 per pack sold and a free pack of napkins every month for her own personal use. She convenes monthly meetings at the Anganwadi Centres or other similar platforms for adolescent girls to focus on the issue of menstrual hygiene and other relevant SRH issues. The data for all these 3 indicators related to Menstrual Health Scheme is captured in the HMIS.

As per the data reported on HMIS, 14 States/ UTs viz. Andaman & Nicobar Islands, Arunachal Pradesh, Chandigarh, Chhattisgarh, Goa, Ladakh, Lakshadweep, Manipur, Meghalaya, Nagaland, Puducherry, Sikkim, Telangana, The Dadra And Nagar Haveli And Daman And Diu are not reporting any data for Adolescent Girls provided sanitary napkin packs during 2020-21.

Whereas during 2021-22, 6 states among these have initiated reporting on this indicator these states are Manipur, Meghalaya, Nagaland, Sikkim, Telangana and The Dadra And Nagar Haveli And Daman And Diu. The State/ UT-wise details are given at **Annexure 6.5 & Annexure 6.6.**

Annexure 6.1
Comparative Adolescents provided 4 IFA tablets 2020-21 and 2021-22

State/ UT	Girls (6th -12th) in schools		Boys (6th -12th) in schools		Out of school girls (10-19 years) at AWCs	
	2020-21	2021-22	2020-21	2021-22	2020-21	2021-22
All India	148042353	227446815	143437838	220777294	55045807	58551780
A & N Islands		17687		16468		1167
Andhra Pradesh	14363027	25868458	14105315	25819968	2279311	433490
Arunachal Pradesh	17642	4104	15301	3690	540	278
Assam	1878387	3762586	1804463	3438280	420570	614776
Bihar	3313804	3687981	2939614	3462306	6661924	2517538
Chandigarh	25807	147151	34922	164111	711	666
Chhattisgarh	4755540	8973234	4248791	8513044	771975	986273
Delhi	8866	0	7741	0	0	0
Goa	229118	402538	234260	414795	176	133
Gujarat	9801696	15069607	10384832	14679036	3964715	4485103
Haryana	6148248	6752741	6008158	6708864	55398	59031
Himachal Pradesh	2084346	1773001	2063233	1646345	27934	84357
Jammu And Kashmir	117872	686228	112163	565345	166769	719969
Jharkhand	1937802	6924987	1671183	5888065	3867895	9471963
Karnataka	4512531	5738438	4280021	5821208	1158286	769452
Kerala	0	15660	0	11130	0	376
Ladakh	0	44	0	31	0	222
Lakshadweep	0	0	0	0	0	0
Madhya Pradesh	21189092	21519206	20555887	21116854	7362376	5023037
Maharashtra	14290483	40522253	14617594	40810212	937148	2833025
Manipur	1026	31858	1020	32256	11865	15625
Meghalaya	121495	157768	52226	127528	20747	14656
Mizoram	24563	178151	24832	187811	19636	49569
Nagaland	388	7735	260	4435	4556	5612
Odisha	10189786	10096558	10200993	10280040	6889758	5223355
Puducherry	89748	18040	71795	16442	5138	0
Punjab	1193321	2997784	1287167	3325524	518542	77102
Rajasthan	5850264	6309899	6611251	7132113	3181442	4905918
Sikkim	0	0	0	0	4453	0
Tamil Nadu	20541770	25992393	20313586	24665226	9384456	8852401
Telangana	70388	1416675	55761	1420167	18147	265730
DNH & DD	3197	169751	1957	172952	58	25403
Tripura	33004	592256	33149	591306	2342	155116
Uttarakhand	6720	3496316	4764	3521739	1242	147904
Uttar Pradesh	8877982	15319586	8355559	14119622	6856516	10475832
West Bengal	16364440	18796141	13340040	16100381	451181	336701

Red Coloured figures indicate a decline in performance over the previous year

Annexure 6.2

Comparative Adolescents provided Albendazole 2020-21 and 2021-22

	Girls (6th -12th) in schools		Boys (6th -12th) in schools		Out of school girls (10-19 years) at AWCs	
	2020-21	2021-22	2020-21	2021-22	2020-21	2021-22
All India	31998483	29448144	31947089	29705132	17245758	17631215
A & N Islands		2604		1575		5737
Andhra Pradesh	6739296	2915120	6943548	2917008	282647	105022
Arunachal Pradesh	320	2123	255	2286	156	1954
Assam	986243	1037483	1058324	1027130	114307	246416
Bihar	2193653	704511	2123920	671885	2836299	481833
Chandigarh	39170	91308	42450	100208	91	1452
Chhattisgarh	325774	191340	311333	193234	114778	153224
Delhi	0	32544	0	32403	0	25591
Goa	124925	79857	130166	80157	81	447
Gujarat	5275537	3753540	6030452	4357704	1296776	1006980
Haryana	586613	387903	589332	376644	2491	200
Himachal Pradesh	223083	209322	107354	208873	5425	6085
Jammu And Kashmir	106411	430329	110712	495397	124122	402579
Jharkhand	145627	1691760	153974	1529671	1513633	3670920
Karnataka	1884146	1950674	1886451	1821055	873055	703649
Kerala	0	4345	0	6	0	6
Ladakh	0	77	0	258	0	544
Lakshadweep	0	0	0	0	0	0
Madhya Pradesh	1496195	2348959	1483192	2395532	1181724	727733
Maharashtra	952629	2101766	915561	2407103	217636	1234780
Manipur	4601	7636	4328	7595	833	1622
Meghalaya	0	126094	0	139264	65362	33400
Mizoram	23210	30708	24183	32380	8776	11895
Nagaland	31552	45031	31701	41201	35698	1125
Odisha	1147245	732329	1164379	772828	1104637	1143241
Puducherry	157655	22333	159354	22236	10297	504
Punjab	578665	924766	584791	997010	142429	49828
Rajasthan	68363	311087	193548	281631	114548	72129
Sikkim	0	21642	0	18882	2965	620
Tamil Nadu	6161891	6327614	5789958	5884096	5262970	2320951
Telangana	37190	465379	26411	399543	7210	211823
DNH & DD	268	40668	250	45503	0	12830
Tripura	23367	439082	24110	422848	600	46659
Uttarakhand	51298	425618	47459	389019	242262	48843
Uttar Pradesh	2605319	1284587	1981623	1315622	1679957	4897593
West Bengal	28237	308005	27970	317345	3993	3000

Red Coloured figures indicate a decline in performance over the previous year

Annexure 6.3

Comparison of Mid Year population and Total Adolescents registered in AFHC (2021-22)

State/ UT	Mid year population as on 1st October 2021	Total Adolescents registered (2021-22)	Adolescents registered per 1 lakh population
India	**1370315000**	**8230115**	**601**
Andaman & Nicobar Islands	401000	7054	1759
Andhra Pradesh	52895000	885150	1673
Arunachal Pradesh	1540000	11348	737
Assam	35239000	28786	82
Bihar	124154000	53594	43
Chandigarh	1215000	9203	757
Chhattisgarh	29693000	249158	839
Delhi	20801000	150991	726
Goa	1563000	21266	1361
Gujarat	70289000	356506	507
Haryana	29695000	157952	532
Himachal Pradesh	7415000	30662	414
Jammu And Kashmir	13465000	55249	410
Jharkhand	38762000	101375	262
Karnataka	67092000	465222	693
Kerala	35573000	83087	234
Ladakh	298000	1005	337
Lakshadweep	68000	0	0
Madhya Pradesh	85118000	196063	230
Maharashtra	125005000	854576	684
Manipur	3179000	11257	354
Meghalaya	3303000	35435	1073
Mizoram	1221000	13372	1095
Nagaland	2203000	7636	347
Odisha	45865000	89185	194
Puducherry	1593000	68229	4283
Punjab	30453000	23725	78
Rajasthan	79790000	1532680	1921
Sikkim	680000	10729	1578
Tamil Nadu	76536000	1026145	1341
Telangana	37816000	59146	156
Dadra Nagar Haveli & Daman Diu	1132000	6958	615
Tripura	4090000	16868	412
Uttar Pradesh	232301000	633663	273
Uttarakhand	11468000	83308	726
West Bengal	98404000	893532	908

Annexure 6.4

Comparison of Mid Year population and Total Adolescents registered in AFHC (2020-21)

State/ UT	Population Mid-year as on 1st Oct 2020	Total Adolescents registered (2020-21)	Adolescents registered per 1 lakh population
India	**1356978000**	**5194977**	**383**
Andaman & N Islands	400000	2730	683
Andhra Pradesh	52669000	149079	283
Arunachal Pradesh	1526000	9465	620
Assam	34887000	25381	73
Bihar	122341000	29857	24
Chandigarh	1202000	7675	639
Chhattisgarh	29333000	113522	387
Delhi	20414000	99613	488
Goa	1555000	13056	840
Gujarat	69402000	305550	440
Haryana	29314000	121230	414
Himachal Pradesh	7374000	21836	296
Jammu And Kashmir	13365000	36235	271
Jharkhand	38249000	81161	212
Karnataka	66627000	346041	519
Kerala	35413000	31207	88
Ladakh	296000	606	205
Lakshadweep	68000	0	0
Madhya Pradesh	84040000	199667	238
Maharashtra	123961000	563072	454
Manipur	3149000	8141	259
Meghalaya	3272000	34330	1049
Mizoram	1210000	15929	1316
Nagaland	2182000	6562	301
Odisha	45552000	62683	138
Puducherry	1557000	82031	5269
Punjab	30239000	24489	81
Rajasthan	78861000	1002058	1271
Sikkim	673000	11449	1701
Tamil Nadu	76255000	575064	754
Telangana	37599000	54095	144
Dadra &Nagar Haveli-Daman Diu	1053000	7058	670
Tripura	4051000	11861	293
Uttar Pradesh	229672000	482463	210
Uttarakhand	11346000	55146	486
West Bengal	97871000	604635	618

Annexure 6.5

Sanitary Napkin Provision (2021-22)

State/ UTs	No. of adolescent girls provided sanitary napkin packs	No. of sanitary napkin packs sold to adolescent girls	No. of sanitary napkin packs distributed free to ASHA
All India	42166456	20853845	3825731
A & N Islands			
Andhra Pradesh	11680448	1138785	177705
Arunachal Pradesh		1	20
Assam	29867	2050	552
Bihar			
Chandigarh			
Chhattisgarh			
Delhi			
Goa			
Gujarat	102311	24515	10504
Haryana	1423558	1425929	29082
Himachal Pradesh	1508814	1607181	39139
Jammu And Kashmir	206740	345307	37540
Jharkhand	170303	2701	36182
Karnataka	245739	118308	4447
Kerala	323	610	8
Ladakh			
Lakshadweep			
Madhya Pradesh	21501	1119	27600
Maharashtra	1025417	977536	92035
Manipur	1772	13461	6071
Meghalaya	20		
Mizoram	854	322	854
Nagaland	600	6000	
Odisha	5887674	9447474	1274092
Puducherry			
Punjab	158558	164649	11727
Rajasthan	314	233	494
Sikkim	2	2	2
Tamil Nadu	15027639		1835633
Telangana	1552		23
DNH & DD	4920		2415
Tripura	270931	3698	4954
Uttarakhand	473320	571145	59585
Uttar Pradesh	594075	606	22082
West Bengal	3329204	5002213	152985

Blanks indicate the scheme has not started in those states

Annexure 6.6
Comparative Adolescent Girls provided sanitary napkin packs during 2020-21 and 2021-22

State/UTs	2020-21	2021-22
All India	33365955	42173739
A & N Islands		
Andhra Pradesh	1063731	11680448
Arunachal Pradesh		
Assam	20465	29867
Bihar	152	
Chandigarh		
Chhattisgarh		
Delhi	1067	
Goa		
Gujarat	23048	104819
Haryana	329982	1423558
Himachal Pradesh	2968367	1508814
Jammu and Kashmir	358433	206740
Jharkhand	395291	170303
Karnataka	1282629	245739
Kerala	672	323
Ladakh		
Lakshadweep		
Madhya Pradesh	172075	21501
Maharashtra	2889292	1025417
Manipur		1772
Meghalaya		20
Mizoram	107	854
Nagaland		600
Odisha	5844591	5887674
Puducherry		
Punjab	373245	158558
Rajasthan	2186	314
Sikkim		2
Tamil Nadu	13740016	15027639
Telangana		1552
DNH & DD		4920
Tripura	2637	269053
Uttarakhand	31539	473320
Uttar Pradesh	237964	594075
West Bengal	3628466	3335857

Blanks indicate the scheme has not started in those states

CHAPTER 7

DIAGNOSTIC SERVICE

The Vital Role of Diagnostic Services in Healthcare: Efficient and effective diagnostic services, both radiological and pathological, are amongst the most essential health care facilities for delivering quality treatment to the public.

Diagnosis is the first step to disease management, which helps in accurate identification and treatment. The word diagnosis has not probably received so much attention and acclaim as it has now, during a worldwide pandemic, when detection and timely treatment have clearly emerged as the need of the hour Diagnosis helps improve patient care, contributes to protecting a patient's health and in some cases even helps limit healthcare spending.

It is a medical procedure that involves testing a sample of blood, urine, stool, sputum, tissues etc. Diagnostic services facilitate the provision of timely, cost effective & high quality diagnostic care in a safe & secure environment. It includes Clinical services of Pathology, Laboratory, medicine, radiology & nuclear medicine. Diagnostics are an integral part of the health care system, which provide information needed by service providers to make informed decisions about care provision related to prevention, screening, detection, treatment and management.

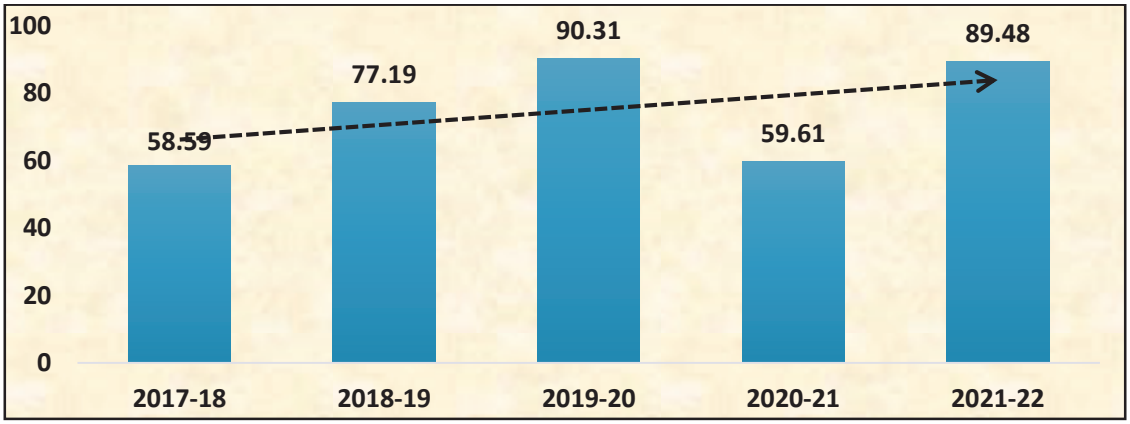
Currently HMIS captures data related to diagnostics services related of various procedures such as Hb test, HIV, RTI/STI, Syphilis, Widal test, X-ray and Ultrasound etc. Some of the HMIS data Items Analysis pertinent to the same is provided below:

7.1 Laboratory Investigations:-

Lab investigations constitute an important part of diagnostic evaluation of any patient for gathering information and it is a known fact that with the help of investigation some underlying systematic conditions of patients can be identified which they were not aware of. Lab tests includes examination of Blood, urine and other specimens.

From figure 7.1, it can be seen that the total Number of laboratory tests conducted and reported at the India level throughout the year shows an increasing trend.

Figure7.1 Increasing trend of Total Laboratory Investigation (in Cr.) reported in HMIS at All India level over the years.



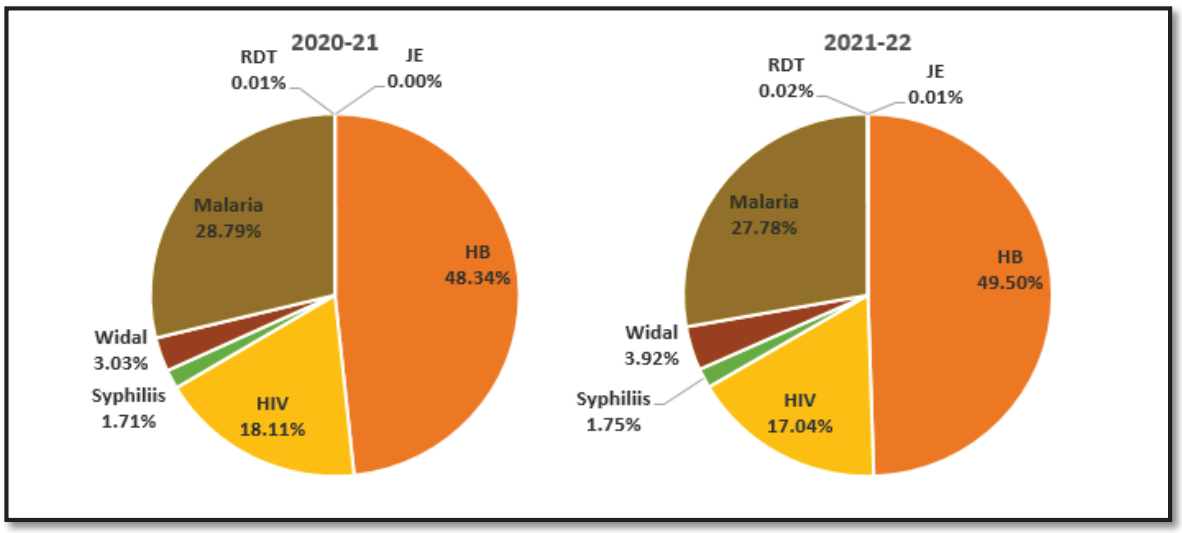
Laboratory Services & Investigation:

A number of data elements w.r.t Lab tests are captured in HMIS. **Figure 7.2** shows percentage of tests performed at hospital, where maximum number of tests have been conducted for Haemoglobin, which is more than 40% in Both FY 2020-21 and 2021-22 followed by Malaria.

Types of Lab test conducted and captured under HMIS is:

7.1.1 Haemoglobin (HB)
7.1.2 HIV Test
7.1.3 Syphilis Test
7.1.4 Widal Test
7.1.5 Malaria Test
7.1.6 RDT Test

Figure7.2 Showing Percentage of Laboratory Investigations By Type.



7.1.1 Haemoglobin (HB)

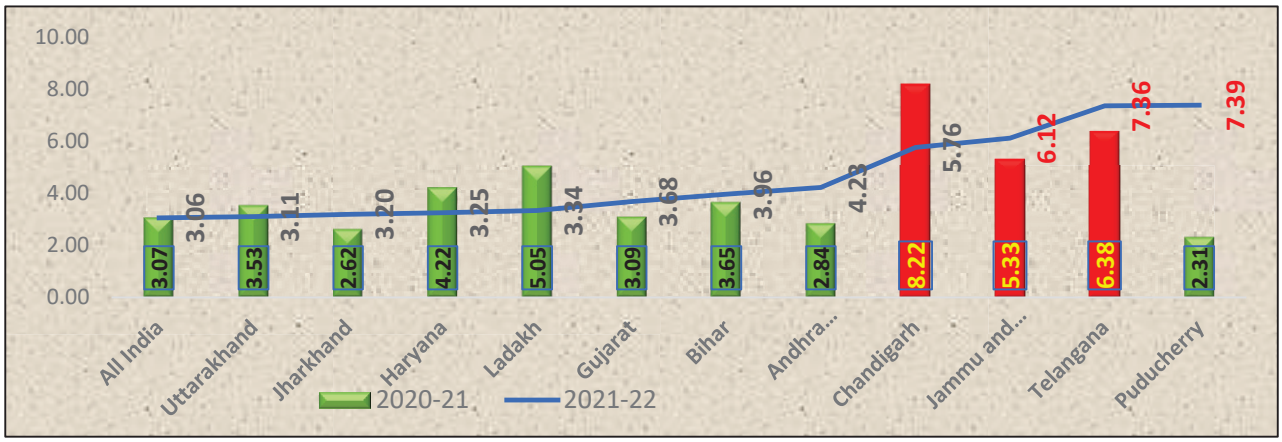
A Haemoglobin test measures the levels of Haemoglobin in the blood. A protein in the red blood cells carries oxygen from lungs to the rest of the body. If the haemoglobin levels are abnormal, it may be a sign of disorder in the body. The ranges given below:

Table 1: Ranges of Anemia (in g/dl)

Population	Anemia		
	Mild	Moderate	Severe
Children 6–59 months of age	10–10.9	7–9.9	<7
Children 5–11 years of age	11–11.4	8–10.9	<8
Children 12–14 years of age	11–11.9	8–10.9	<8
Non-pregnant women (15 years of age and above)	11–11.9	8–10.9	<8
Pregnant women	10–10.9	7–9.9	<7
Men (15 years of age and above)	11–12.9	8–10.9	<8

Source: WHO- Nutritional Anemia: Tools for Effective Prevention and Control, 2017

Figure 7.3 Percentage of tested cases having Hb<7 (g/dl) above National average (3.07 for FY 2020-21 & 3.06 for FY 2021-22):



Around 11.3 Crore and 8.3 Crore Hb tests were performed in FY 2021-22 and FY 2020-21 respectively. State/ UT-wise details given in Annexure 7.3. In Figure 7.3 shows,12 states have reported higher than National average i.e. more than 3.07 percent during the FY 2020-21 with Chandigarh being the highest at 8.22%, followed by Telangana at 6.38% and Jammu & Kashmir at 5.33% on the other hand, in FY 2021-22 Puducherry, Telangana and Jammu & Kashmir has reported high number of anemic patients.

Below graphs represents, States reporting less than the National average of 3.07%. In Fy 2021-22 Lakshadweep, Goa followed Manipur by exhibit lessening the anemia cases as compare to National Average. Whereas, Tripura and Nagaland also shows major reduction in anemia cases compare to 2020-21.

Figure 7.4 Percentage of Hb<7 cases to total tested cases reported by State Below National Average.

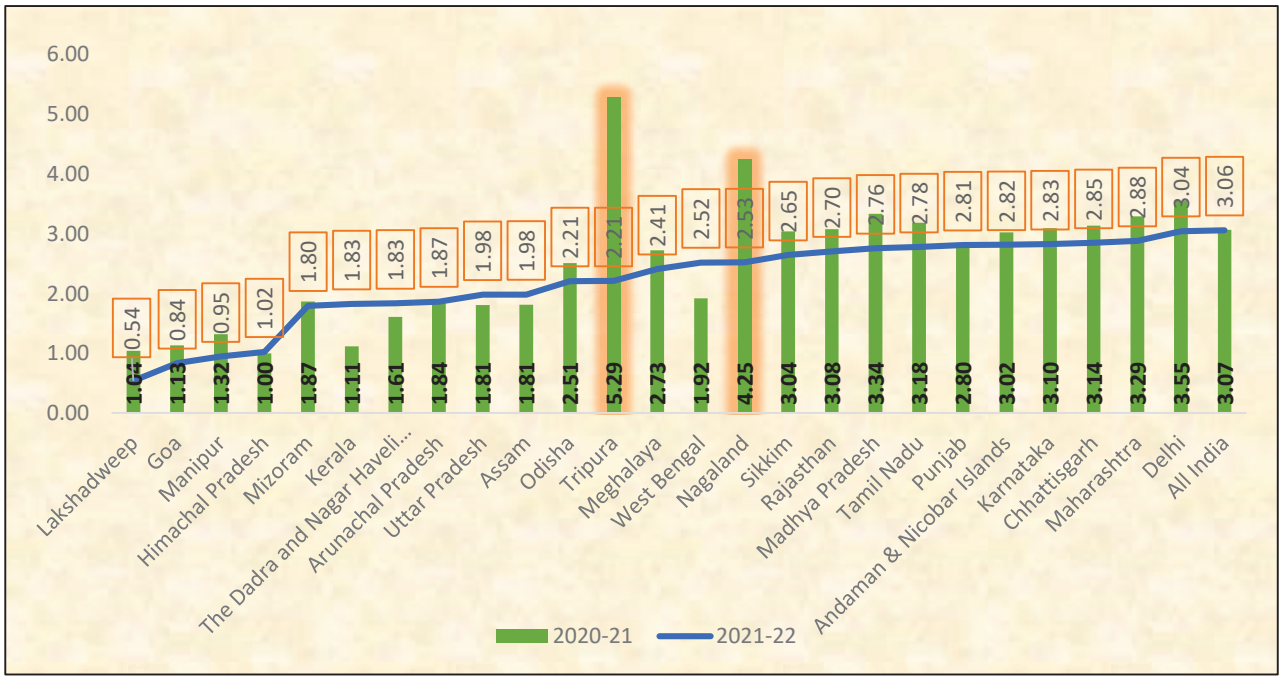
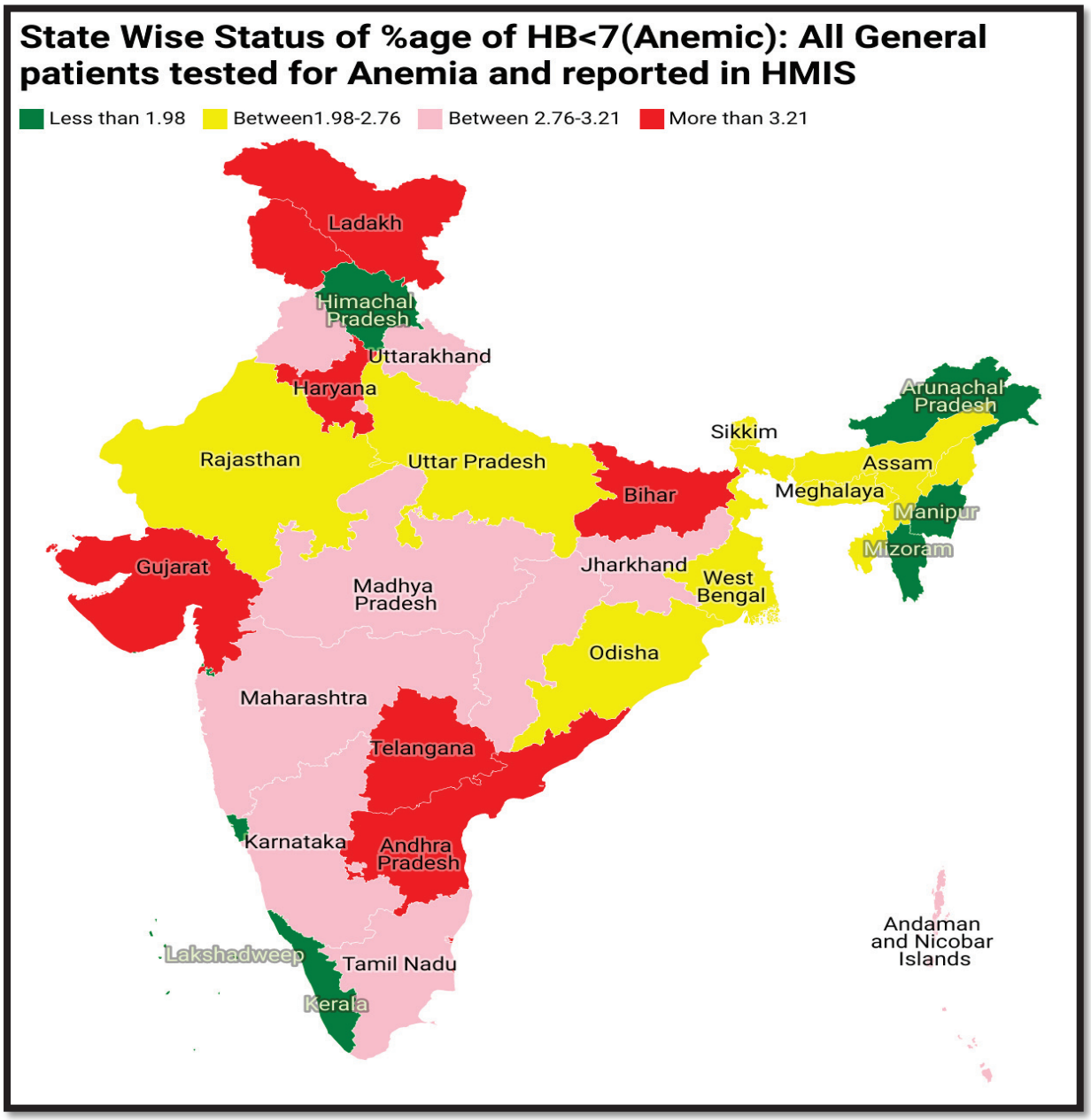


Figure 7.5 Percentage of tested cases having Hb<7 reported By State.



The above Map represent the State reported HB less than 7. The State(s) reported more than 3.21% of tested cases shows in color red represent i.e. high number of patients having anemia in comparisons to other State(s).

7.1.1.a Haemoglobin (Hb) testing For Pregnant Women:-

Hb investigation during pregnancy is important factor of ANC. Anemia during pregnancy is a health problem affecting nearly half of all pregnant women worldwide. High fetal demands for iron renders iron deficiency, which is the most common cause of anemia, with other micronutrient deficiencies contributing less frequently

Abnormally high Hb concentrations during pregnancy usually indicate poor plasma volume expansion, which also leads to risks for certain adverse pregnancy outcomes as

LBW along with premature births, stillbirths & Maternal Deaths. Early diagnosis may help in improving the haemoglobin levels well in time.

Based on the data reported by States/ UTs on HMIS during 2020-21 & 2021-22, 67.9% and 70% of pregnant women respectively were tested for Hb out of Total ANC i.e. 3% of increment in testing over the year. Out of this, not more than 5% of pregnant women diagnosed with severe anaemia. State/ UT-wise data is given in **Annexure 7.10**.

Figure 7.6 Pregnant Women Tested for Anaemia

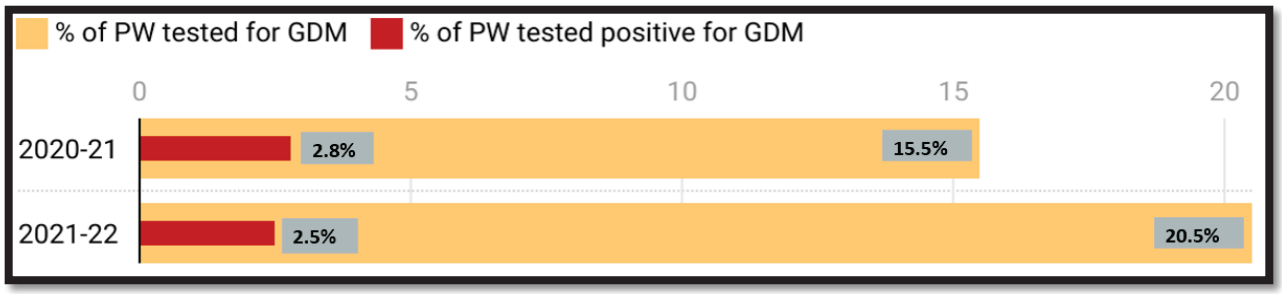
Blood Sugar using OGTT Testing during pregnancy

Gestational diabetes is a type of diabetes that is first seen in a pregnant woman who did not have diabetes before she was pregnant. Some women have more than one pregnancy affected by gestational diabetes. Gestational diabetes usually shows up in the middle of pregnancy. Doctors most often test for it between 24 and 28 weeks of pregnancy. In such cases the blood glucose level (blood sugar) of the mother stays high (hyperglycemia) because she is unable to make and use all the insulin needed to support the demands of the pregnancy.

The OGTT (Oral Glucose Tolerance Test) is gold standard for diagnosis of Gestational Diabetes Milletus (GDM) is done between 24 and 28 weeks of pregnancy. If a pregnant woman had a history of gestational diabetes before, an OGTT is done at the time of registration and then another OGTT at 24 to 28 weeks if the first test is normal.

Based on the data reported on HMIS during 2021-22, 20.5% pregnant women were tested for Blood sugar using OGTT which is 5% higher as compare to 15% in FY 2020-21. State/ UT-wise details are given in **Annexure 7.2**.

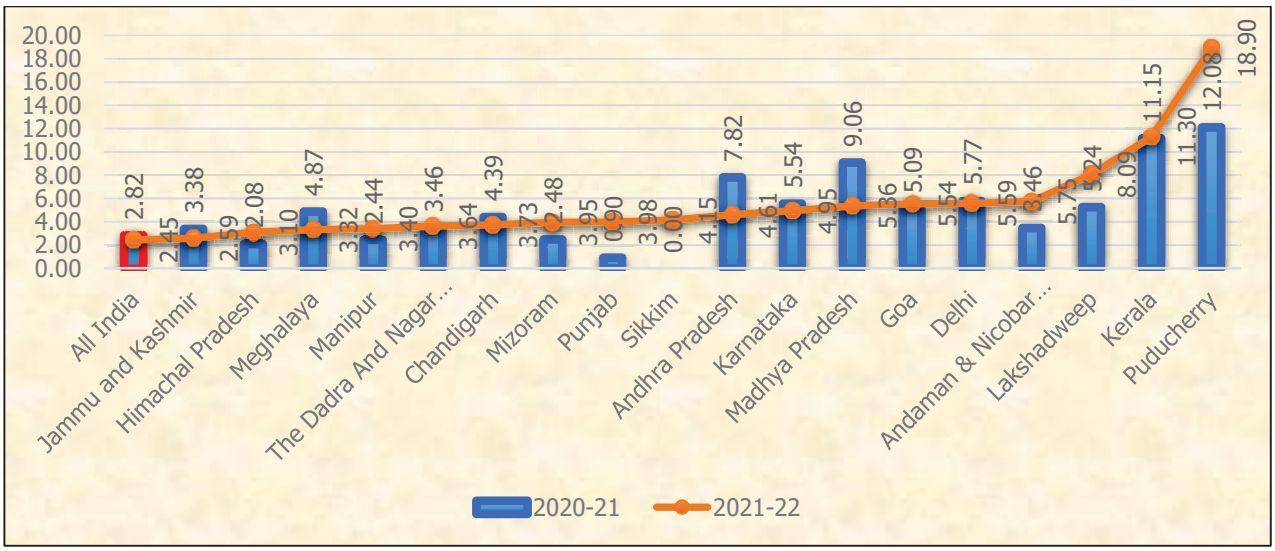
Figure 7.7 Maternal Diabetes During Pregnancy.



In addition, at all India level out of those who were tested, 2.5% PW found Positive for gestational diabetes in FY 2021-22 which is less than as compare to 2.8% in FY 2020-21.

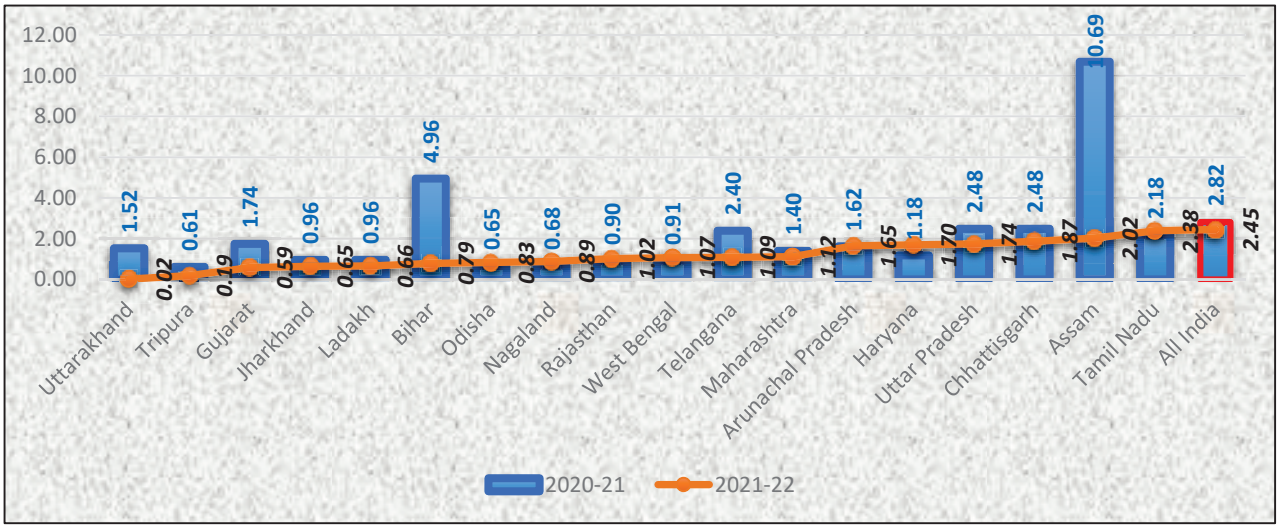
Figure 7.8 illustrates that Puducherry has reported the highest rate of PW found positive for Gestational diabetes in FY 2021-22 i.e. (18.9%) followed by Kerala (11.30%) and Lakshadweep (8.09%) which also shows that the rate was increased as compare to last year in these States. The reduction can also be seen in Andhra Pradesh and Madhya Pradesh in FY 2021-22 in comparison with 2020-21.

Figure 7.8 Prevalence of Gestational Diabetes for States/UTs which have surpassed the National Average



On the other hand, Uttarakhand has reported lowest rate (0.02%) of gestational diabetes followed by Tripura and Ladakh in FY 2021-22. Meanwhile, Assam and Bihar shows Major reduction in FY 2021-22 as compare to FY 2020-21.

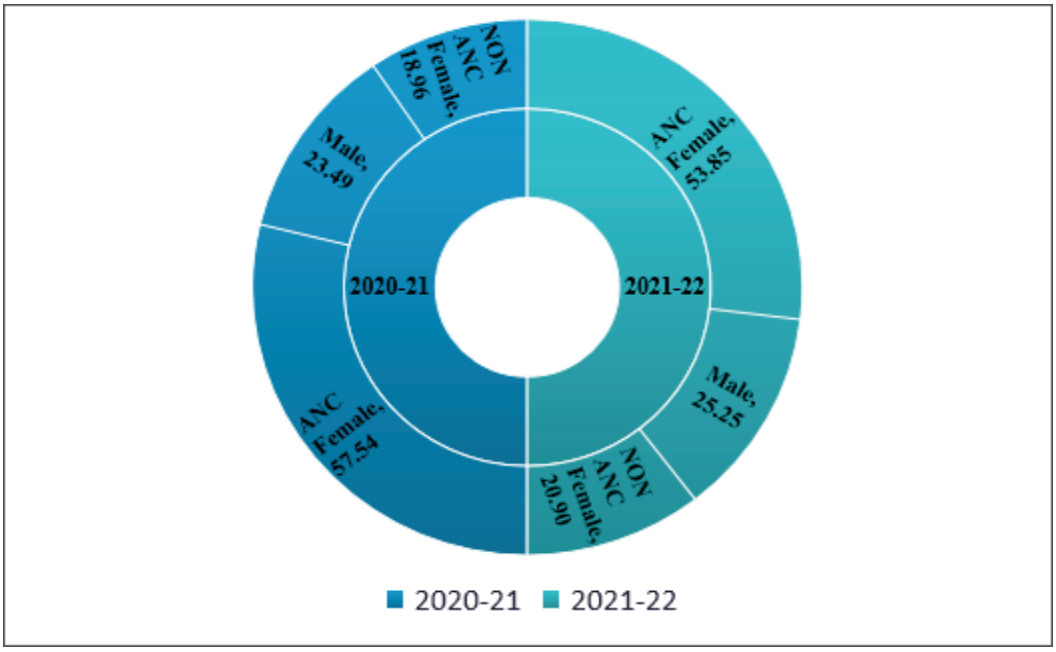
Figure 7.9 Prevalence of Gestational Diabetes for States/UTs which have below the National Average.



7.1.2 HIV Testing:

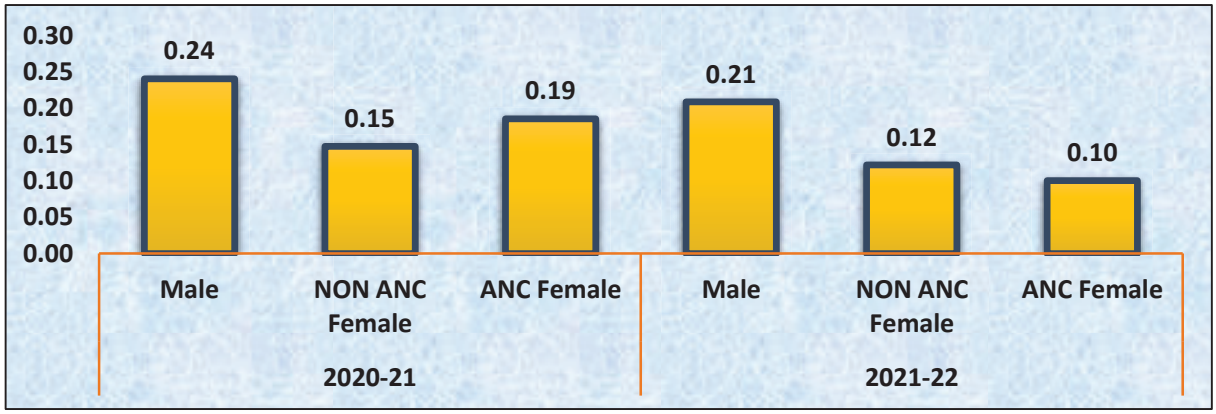
HIV is a virus that affects the body's immune system. When it goes untreated, it can lead to AIDS (acquired immunodeficiency syndrome). HIV testing, also called HIV screening, is the only way to know if you have the virus present in the body. Antibody test checks for antibodies specific to HIV in your blood or oral fluid. In general, this test use blood from a vein which can detect HIV sooner after infection than tests done with blood from a finger prick or with oral fluid. The State/UTs details are given at **Annexure 7.6**.

Figure 7.10 Gender wise percentage of HIV tests.



Based on reported data, at National Level in FY 2020-21 highest test performed on ANC female (57.54%), lowest test performed on Non ANC female (18.96%) followed by Male (23.49%) Whereas, in FY 2021-22, lowest test performed was on males (25.25%) followed by Non ANC Female (20.90%) whereas ANC Female (53.85%) is the highest.

Figure 7.11 Percentage of Cases Tested Positive for HIV by Gender



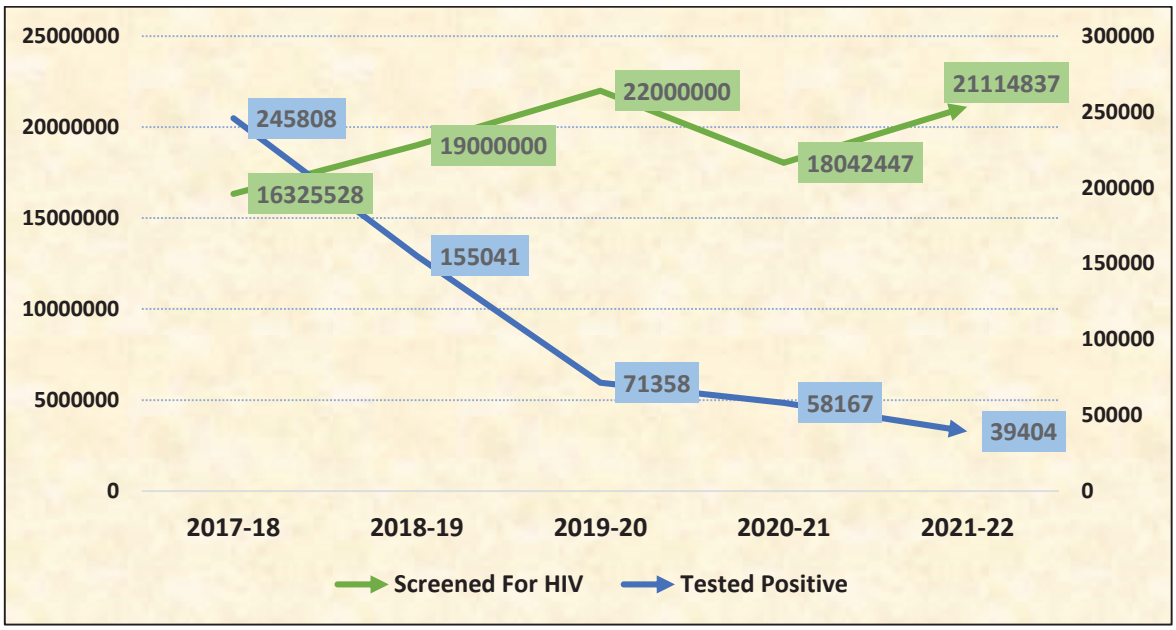
At National level, in FY 2021-22, Out of total HIV test (392117560), 0.21% Males have tested positive for HIV, while 0.12% Non ANC Females have tested positive for HIV. In case of pregnant women 0.11% have tested positive for HIV which is lowest among them.

191

HIV in Pregnant Women:

Human immunodeficiency virus (HIV) is an infection with a global prevalence and currently has no cure or vaccine. Women living with HIV who become pregnant or who acquire the virus during pregnancy are at risk of both maternal and perinatal morbidity and mortality mainly if the virus is poorly controlled. Furthermore, there is a risk of vertical transmission to the fetus during pregnancy labour and postpartum through breastfeeding. Appropriate management must be instituted to reduce the consequences of HIV in pregnancy.

Figure 7.12 Annual reduction in positive cases relative to tested cases in pregnant women.



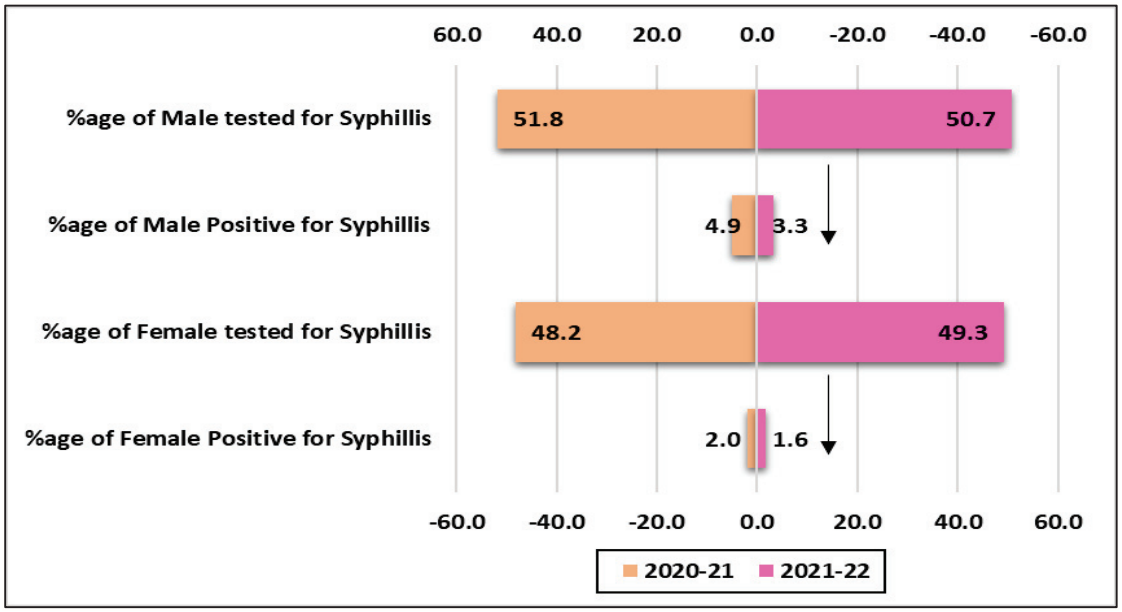
The above Figure shows that HIV prevalence among pregnant women is trending downward as the number of tests increases each year.

7.1.3 Syphillis testing:

Syphilis is a sexually transmitted disease (STD). Blood tests can reveal if the body is making the antibodies to fight the infection. Syphilis tests can help diagnose syphilis in the early stages of infection, when the disease is easiest to treat. Rapid Plasma Reagin (RPR), a syphilis blood test that looks for antibodies to the syphilis bacteria and Venereal Disease Research Laboratory (VDRL) test is used for testing Syphilis.

HMIS is capturing data for Male and female tested for syphilis. At National level 3.3% Males are found sero positive for Syphillis and 1.6% Non ANC Female in FY 2021-22, which has been declined as compared to FY 2020-21.

Figure 7.13 Male and Non-ANC Female tested and positive for Syphilis.



Syphillis Testing during pregnancy

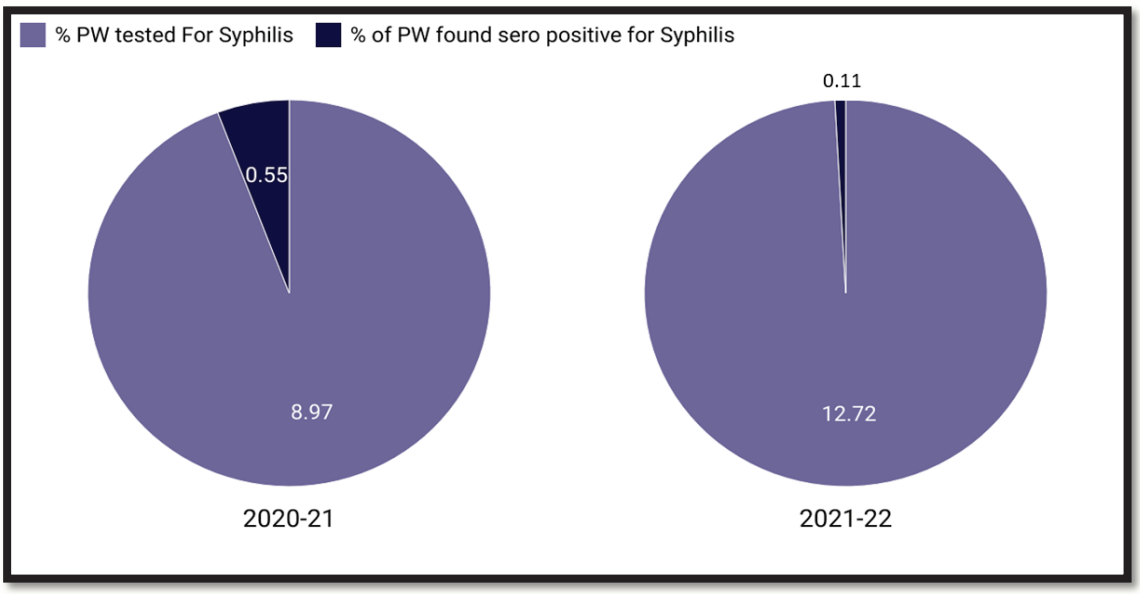
Syphilis is a sexually transmitted infection caused by the spirochete bacterium Treponema Pallidum, subspecies Pallidum that may also be transmitted from mother to foetus during pregnancy or at birth resulting in congenital syphilis. It can seriously complicate pregnancy and result in spontaneous abortion and stillbirth.

Stillbirths and early childhood mortality due to syphilis are continually being reported each year. World Health Organization (WHO) estimated that up to 1.5 million cases of syphilis in pregnancy occurs each year. Timely diagnosis and proper management of the infection in the pregnant woman are important in order to prevent adverse outcome. Syphilis in pregnancy remains an important medical condition due to its consequences. Timely diagnosis and treatment of the disease is therefore very important. The State/ UT-wise details are given at **Annexure 7.9**.

Table 2. Sero-prevalence of pregnant women for syphilis

	Total no. of PW registered for ANC	No. of PW tested using POC test for Syphilis	No. of PW found sero Positive (Out of tested PW)	% of PW found sero positive for syphilis
2020-21	27591287	2476264	13522	0.55
2021-22	27642485	3517475	3792	0.11

Figure 7.14 Pregnant Women tested and found positive for Syphilis.

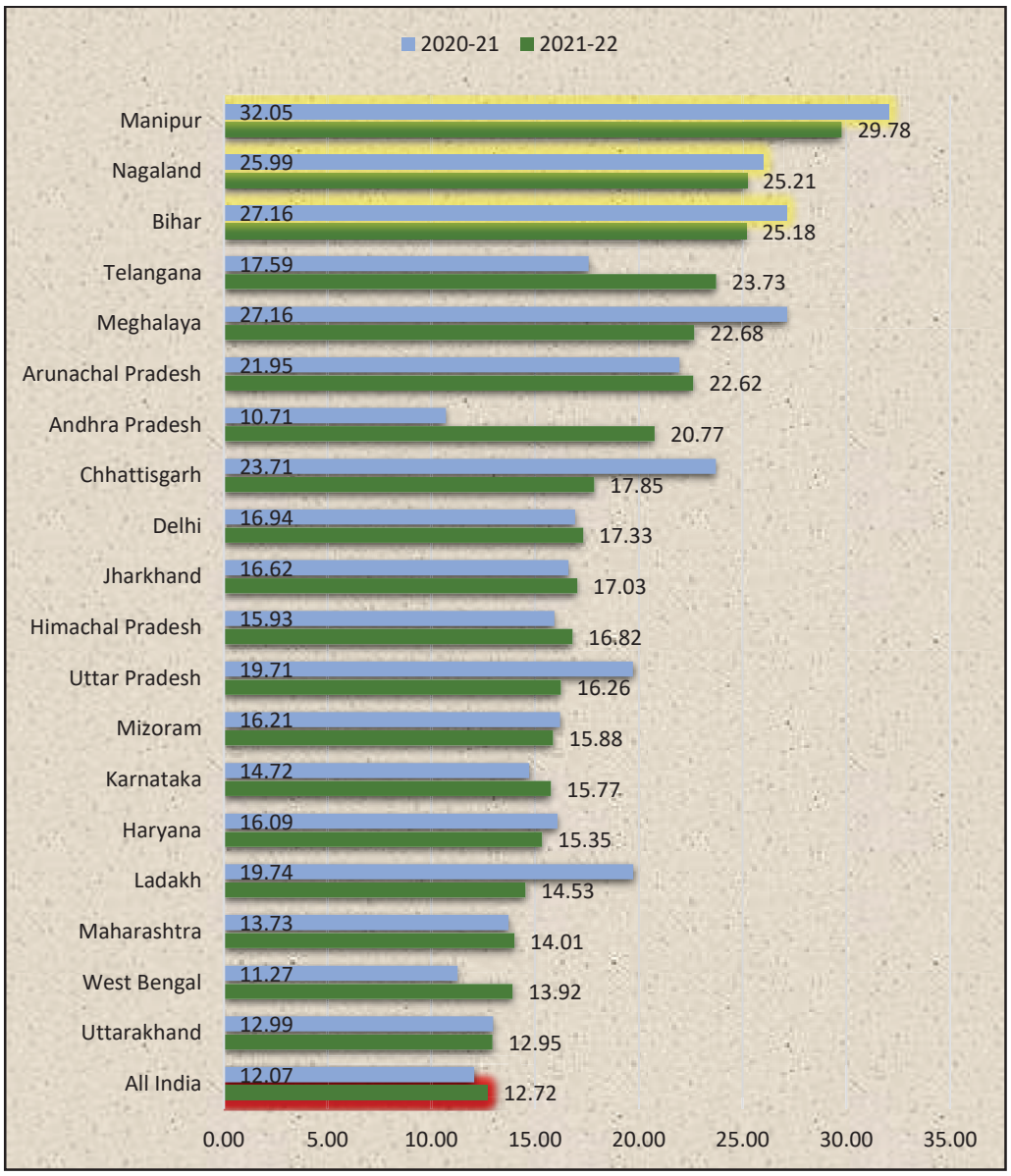


As per the data reported by States/UTs less than 1% Pregnant women were found to be sero positive for syphilis in FY 2020-21 and 2021-22.

7.1.4 Widal Tests

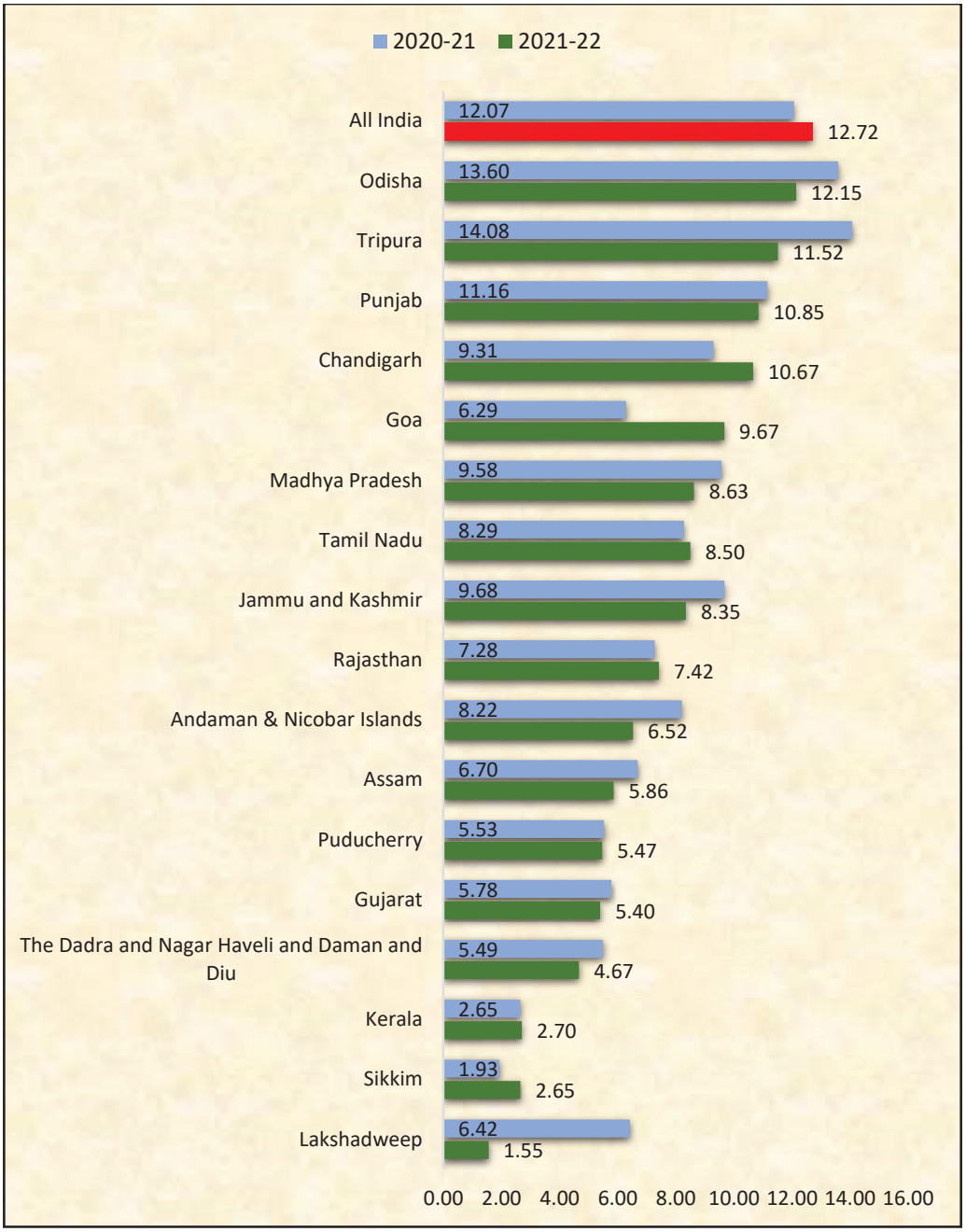
Widal Test (Slide Agglutination) test helps to detect typhoid fever and paratyphoid fever, collectively called enteric fever, which is caused by the consumption of food or water contaminated by Salmonella bacteria. These microorganisms, like Salmonella typhi and Salmonella paratyphi A, B, and C cause Typhoid fever or enteric fever, is an acute, life-threatening, fever-causing illness that is transmitted by the ingestion of food or water.

Figure 7.15 Percentage of Tested Positive for Widal By States / UT Reporting Above National Average.



During 2020-21 and 2021-22 at National Level, 52 Lakh and 90 Lakh Widal tests were conducted respectively, out of which, 6.3 lakh (2020-21) and 11.4 lakh (2021-22) were found positive, and the rate of positivity is 12.72 % at National Level for 2021-22. Manipur, Nagaland followed by Bihar has reported the highest positive Widal cases i.e. more than 25%. The State/ UT-wise details are given at **Annexure 7.5**.

Figure 7.16 Percentage of Tested Positive for Widal By States / UT Reporting below National Average.



The above graph shows that Lakshadweep reported the lowest value of 2%, a 5% decrease compared to the previous year.

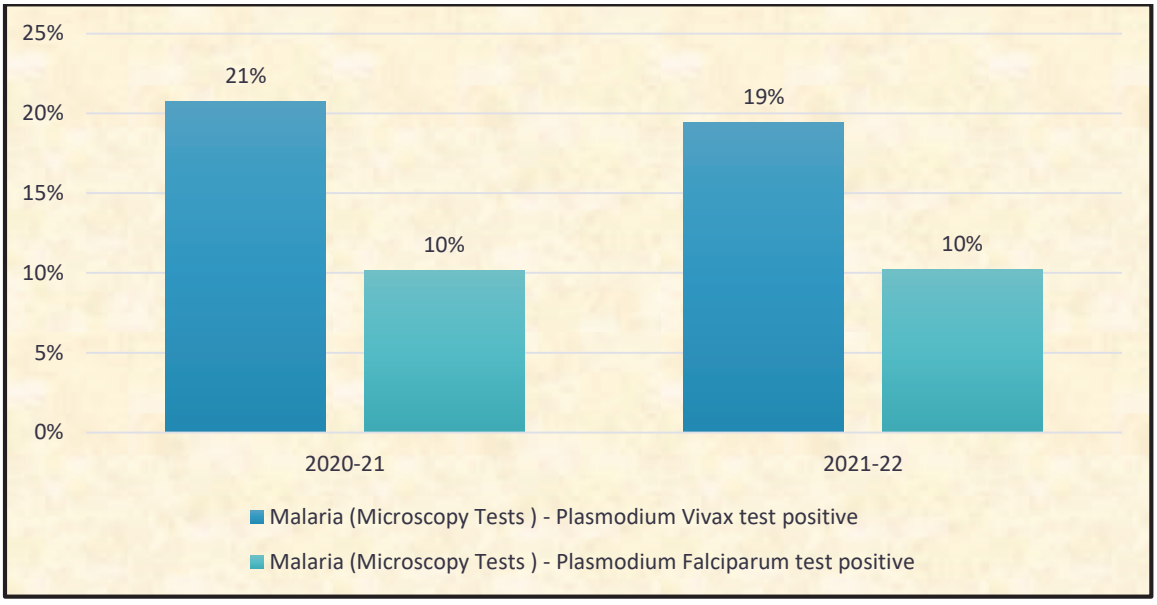
7.1.5 Malaria Testing

Malaria is a disease having symptoms of recurrent fever with chill and headache. It is caused by parasites known as Plasmodium. It commences with the bite of female Anopheles mosquitoes which carries this parasite. Malaria can cause mild illness in some patients and life-threatening disease in others.

Microscopic examination: The most preferred and reliable diagnosis of malaria is microscopic examination of blood films as all of the four major parasite species can be

distinguished easily. Microscopy in both financial years shows that the positive rate of Plasmodium vivax test is higher than Plasmodium falciparum at all India level. The State/ UT-wise details are given at **Annexure 7.7**.

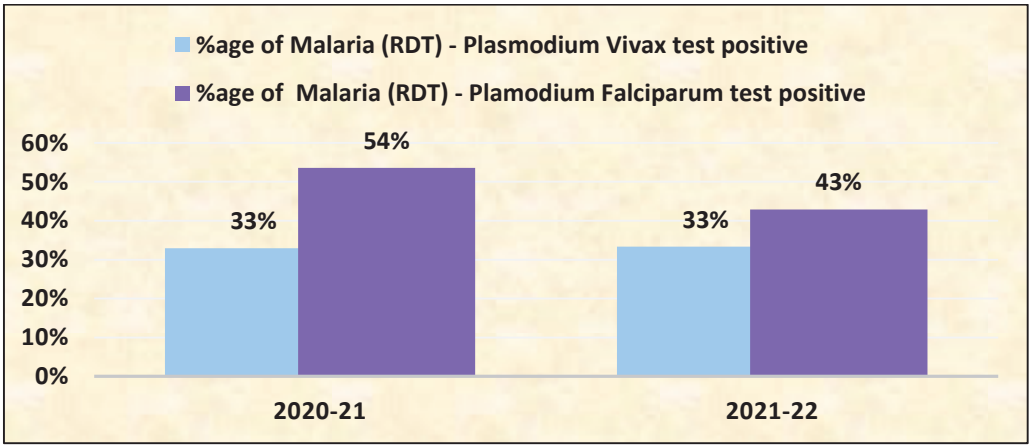
Figure 7.17 Percentage of Malaria positivity by species (Microscopy).



7.1.6 Rapid Diagnostic Test (RDT) for Malaria

This test uses finger-stick and a drop of venous blood. The reading can be assessed visually as the presence of colored strips on the dipstick. It takes a total of 15–20 minutes to complete the procedure. Data for both these tests are captured in HMIS. Figure 7.18 depicts Malaria positivity by RDT test having a higher positivity rate for Plasmodium falciparum than for Plasmodium vivax. The State/ UT-wise details are given at **Annexure 7.8**.

Figure 7.18 Malaria-positive rates by type using rapid diagnostic tests (RDTs).

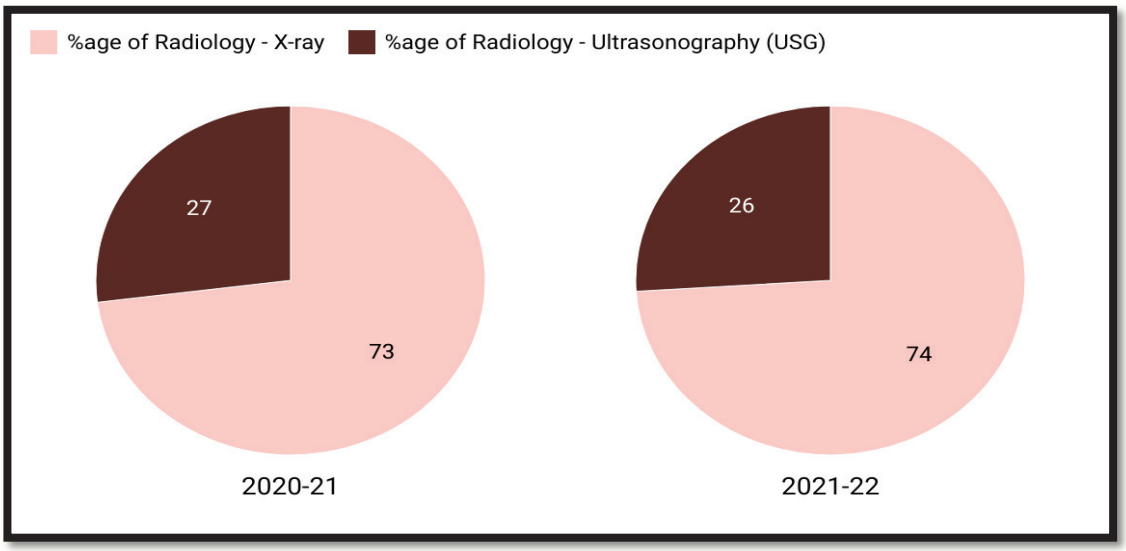


Radiology: Radiology is a branch of medical Science, which deals with diagnostic application that uses imaging technology to diagnose and treat disease. Process is divided

into different procedures, each using a different test, which takes pictures of the body parts. Radiography includes tests such as X-ray, ultrasound etc.

3.9 Crore Radiology tests were conducted across the country during 2020-21 which comprised 73% X-Ray and 27% ultrasound. Whereas, in FY 2021-22, 5.8 Crore tests were conducted and X-ray, ultrasound test were increased by only 1%. The State/ UT-wise details are given at **Annexure 7.4**.

Figure 7.19 Percentage wise distribution of types of Radiological Examination.



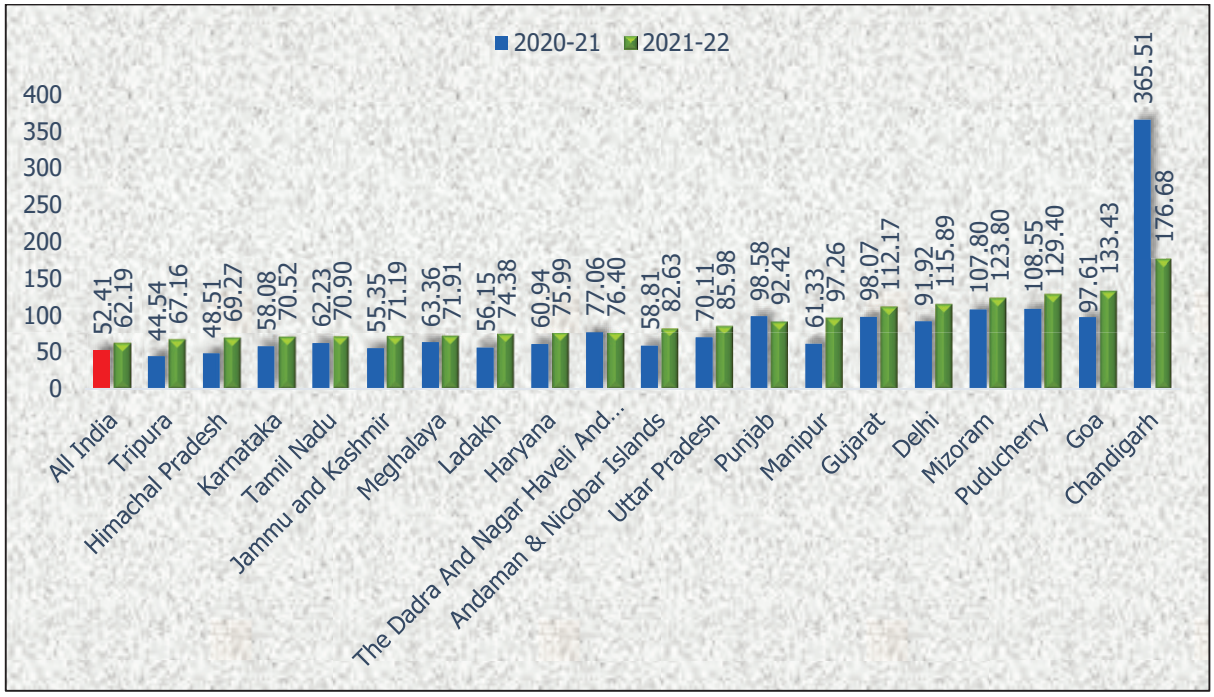
The figure depicts that than more than 70% X-ray is being conducting in radiology and less than 30% examination of Ultrasound.

7.2 Lab Tests & OPD

OPDs provide all general services and facilities including Diagnostic services, which is an important and essential part of the OPD, where the tests done to proceed with treatment required for the patients who are visiting the health facility for OPD and inpatients.

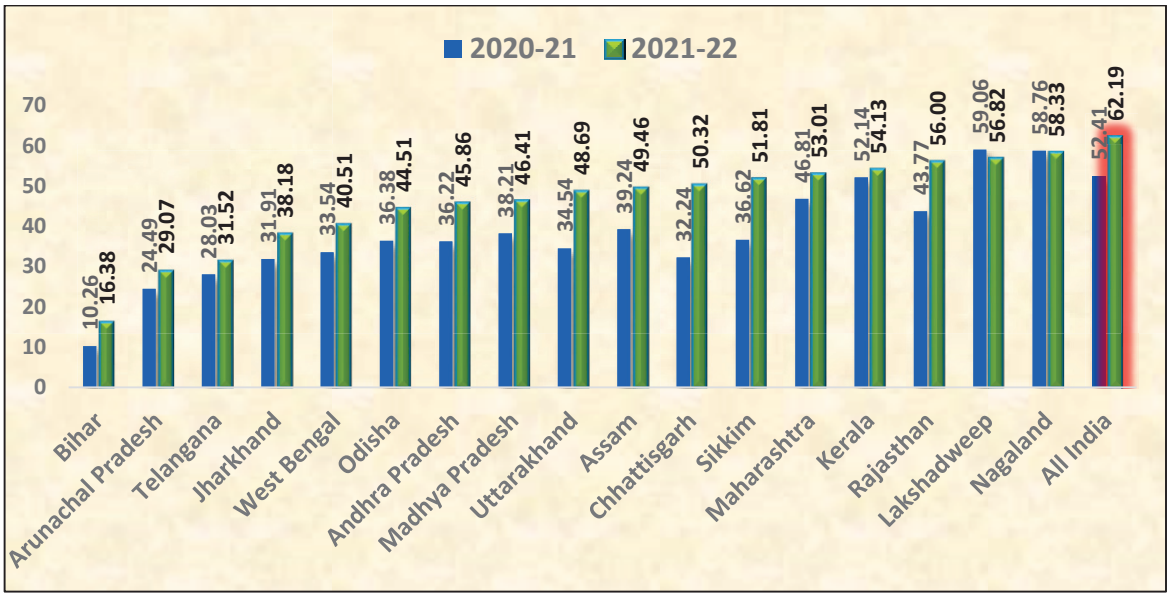
At all India level during 2020-21, a total; of 113 crore outpatient (Allopathic and Ayush) consultations were done and 59 crore lab investigations were conducted which comes to 52.41%, similarly during 2021-22 a total of 143 crore Outpatient consultations were done and 89 crore lab investigation were conducted which is 61.19% (details in Annexure 7.1)

Figure 7.20 Percentage of Laboratory Investigations to the Total OPD by States -Reporting Above National Average.



19 States have reported higher than the National average of 62.19% such as Gujarat, Mizoram, Puducherry, Goa and Chandigarh are reporting more than 100% Lab tests as compared to outpatients.

Figure 7.21 Percentage of Laboratory Investigations to the Total OPD by States Reporting below National Average.

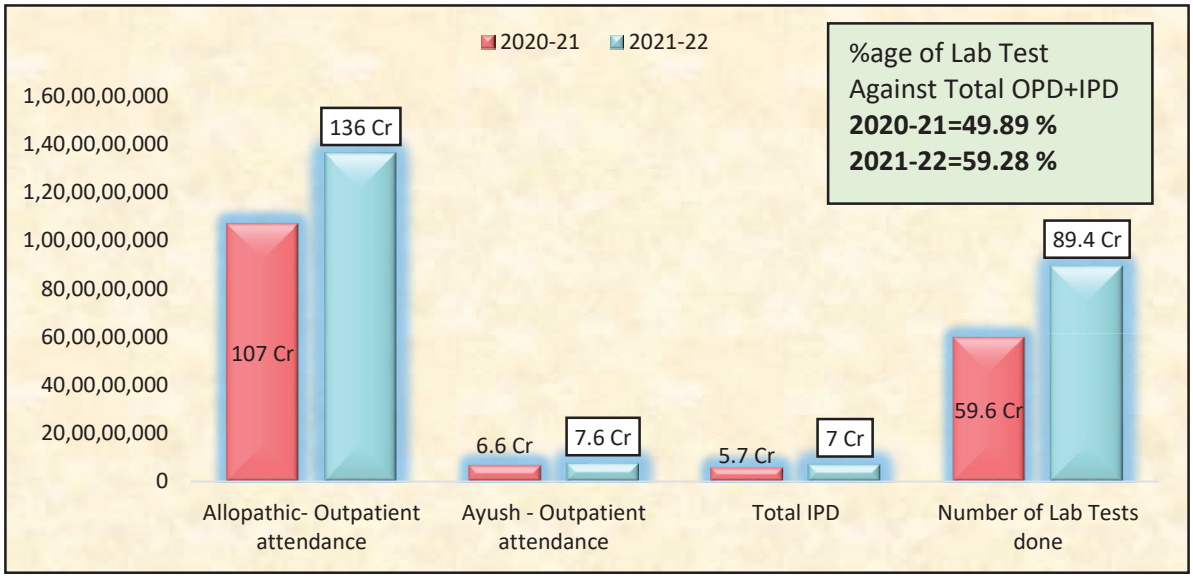


Among the States which have reported less than National average, Bihar has reported the least i.e. 16.38% followed by Arunachal Pradesh which is 29.07%, rest all have reported above 30% lab tests as compared to Outpatients.

7.3 Lab Tests & OPD + IPD

On the other hand, if Lab tests are compared with total patient-load of the facility i.e. both out-patient and in-patient, a similar trend is seen with more than 50% of the patients (both out-patient and in-patient), have received lab services during 2020-21 and 2021-22.

Figure 7.22 Patient load vs laboratory investigations.



Annexure 7.1

State/UT wise Distribution of OPD Attendance and Lab Test Done

States/UTs	Number of Lab Tests done		Allopathic- Outpatient attendance		Ayush - Outpatient attendance	
FY	2020-21	2021-22	2020-21	2021-22	2020-21	2021-22
All India	596196537	894824447	1071443921	1362495689	66054541	76475605
Andaman & Nicobar Islands	788281	1189924	1275439	1377442	65050	62596
Andhra Pradesh	20611875	42659186	55569274	91158320	1333377	1855573
Arunachal Pradesh	276847	429974	1017051	1377632	113483	101548
Assam	8671617	12874839	20801238	24703713	1296142	1325693
Bihar	4659009	8022241	40746216	44407415	4645874	4564644
Chandigarh	9858158	7541646	2539051	4096150	158079	172365
Chhattisgarh	5785914	12334489	17269563	23698729	676117	814057
Delhi	42573709	74205932	44549046	61145069	1765478	2887975
Goa	1411078	2440178	1352927	1717741	92629	111103
Gujarat	42236683	58856423	40642050	50041624	2424929	2427319
Haryana	15081945	21618608	23432883	26960831	1317530	1488564
Himachal Pradesh	4628986	7776541	9540378	11212737	1974	14397
Jammu and Kashmir	9492641	14816663	16225501	19821885	926124	992380
Jharkhand	3318872	5402163	10130166	13703044	270387	447777
Karnataka	41916578	60836656	68694059	82354946	3478791	3917988
Kerala	43098189	60013829	82566076	110783974	93893	92746
Ladakh	262052	388966	439310	490586	27357	32374
Lakshadweep	259769	213032	359957	302157	79866	72777
Madhya Pradesh	18959271	24772199	47228429	51034506	2383853	2339776
Maharashtra	33300877	46331367	67670365	82426857	3465028	4981288
Manipur	530949	1068453	814046	1046410	51641	52116
Meghalaya	1967417	2080625	2900891	2735695	204121	157765
Mizoram	1378511	1733054	1242179	1363159	36556	36694
Nagaland	557181	700166	932383	1180878	15865	19491
Odisha	20736254	29032778	51738231	59701916	5257696	5520925
Puducherry	4800307	7072762	3898032	4935203	524057	530676
Punjab	17721458	21149718	16602653	21738219	1374298	1145693
Rajasthan	43379553	65248350	96619339	114036794	2493866	2477865
Sikkim	231530	334703	621403	632482	10933	13557
Tamil Nadu	107497662	155702466	153021448	196396275	19718274	23213528
Telangana	11878340	15241679	40770298	46280426	1605690	2074922
The Dadra And Nagar Haveli And Daman And Diu	1054822	1468587	1289758	1821365	79063	100848
Tripura	1366057	2495418	2879224	3525183	187823	190706
Uttar Pradesh	45125629	76360989	56669365	79138496	7690873	9673117
Uttarakhand	2098445	4001408	5589635	7706006	486252	511415
West Bengal	28680071	48408435	83806057	117441824	1701572	2053347

Annexure 7.2

State/UT wise Distribution of PW tested for Blood Sugar using OGTT

States/UTs	Total number of pregnant women registered for ANC		Number of PW tested for Blood Sugar using OGTT(Oral Glucose Tolerance Test)		Number of PW tested positive for GDM	
FY	2020-21	2021-22	2020-21	2021-22	2020-21	2021-22
All India	27591287	27642485	4280594	5661946	120784	138848
Andaman & Nicobar Islands	4661	4854	1935	1060	67	61
Andhra Pradesh	898478	869719	22319	203907	1745	9402
Arunachal Pradesh	31633	32301	10784	9634	175	159
Assam	658145	655116	8654	17635	925	357
Bihar	3147963	3020869	54093	59461	2682	469
Chandigarh	21179	26004	10365	16136	455	602
Chhattisgarh	613979	641197	87954	87905	2184	1647
Delhi	531298	462620	124164	160595	7168	8978
Goa	21949	26017	18451	21247	940	1178
Gujarat	1275709	1315690	243154	305437	4229	1793
Haryana	558728	551577	123282	185134	1454	3140
Himachal Pradesh	112254	106340	71624	74981	1487	2323
Jammu and Kashmir	381587	250766	82519	103466	2791	2682
Jharkhand	946963	972325	67784	77495	649	506
Karnataka	1132856	1179184	226914	270094	12564	13357
Kerala	427749	449205	136519	146443	15224	16554
Ladakh	4083	4470	2295	1054	22	7
Lakshadweep	1288	1184	1297	742	68	60
Madhya Pradesh	1906200	1853873	139236	210693	12617	11291
Maharashtra	2048040	2057545	348762	886358	4868	9926
Manipur	45641	46451	3486	4266	85	145
Meghalaya	110762	109015	10588	10441	516	347
Mizoram	23887	21485	2302	1948	57	77
Nagaland	33105	34272	878	901	6	8
Odisha	714791	703280	104193	142419	682	1178
Puducherry	70355	70456	12016	9503	1452	1796
Punjab	438766	431241	16043	13301	144	530
Rajasthan	1697020	1684215	201784	204889	1809	2089
Sikkim	7880	7678	33	1206	0	50
Tamil Nadu	1005569	1009091	1334250	1412814	29056	33695
Telangana	711150	746786	40587	67156	973	734
The Dadra And Nagar Haveli And Daman And Diu	13068	12650	1301	1402	45	51
Tripura	63626	60110	1811	3231	11	6
Uttarakhand	203021	192825	12489	14437	190	3
Uttar Pradesh	6131032	6428813	416847	543415	10339	9453
West Bengal	1596872	1603261	339881	391140	3105	4194

Annexure 7.4

State/UT wise Distribution of Radiology (X-ray & USG)

States/UTs	Radiology - X-ray		Radiology - Ultrasonography (USG)	
FY	2020-21	2021-22	2020-21	2021-22
All India	28836561	43148098	10537025	15019316
Andaman & Nicobar Islands	34487	39215	14931	15591
Andhra Pradesh	778043	2105035	392376	781679
Arunachal Pradesh	50134	77687	41578	60750
Assam	688385	991104	172022	270314
Bihar	728012	1453218	147798	307217
Chandigarh	277790	450063	90306	139455
Chhattisgarh	301133	593137	73128	164675
Delhi	2414237	3755826	591545	969123
Goa	61479	85323	25681	32163
Gujarat	1790882	2611191	500653	741203
Haryana	865184	1162512	215408	301926
Himachal Pradesh	543523	882410	178596	239284
Jammu and Kashmir	742069	1092775	288050	404533
Jharkhand	109639	161059	93026	117661
Karnataka	2336026	3336623	978376	1378806
Kerala	2363560	3590945	915273	1174369
Ladakh	21169	27650	11674	15391
Lakshadweep	15362	14793	8681	6960
Madhya Pradesh	1223579	1494395	355578	434402
Maharashtra	2056266	2914420	643575	858824
Manipur	34965	48088	3750	6883
Meghalaya	89874	120705	95348	98316
Mizoram	59686	56147	31582	32833
Nagaland	38051	62808	8430	12524
Odisha	1030699	1367570	176015	284260
Puducherry	107494	151571	54582	80002
Punjab	723807	867660	155841	182322
Rajasthan	2630188	3750052	986688	1251186
Sikkim	18016	24627	9310	6744
Tamil Nadu	1995390	2887602	1136746	1523255
Telangana	441582	689362	286281	479868
The Dadra And Nagar Haveli And Daman And Diu	61691	78768	56081	75263
Tripura	141141	254442	42818	57994
Uttarakhand	233503	391416	154483	220679
Uttar Pradesh	2046256	2594267	640830	900005
West Bengal	1783259	2963632	959985	1392856

Annexure 7.3

State/UT wise Distribution of Hemoglobin Testing

States/UTs	Number of Hb tests conducted		Out of the total number of Hb tests done, Number having Hb < 7 mg	
FY	2020-21	2021-22	2020-21	2021-22
All India	83708519	113921377	2567561	3486935
Andaman & Nicobar Islands	121994	145252	3688	4089
Andhra Pradesh	4404338	7462728	124961	315530
Arunachal Pradesh	87998	86362	1620	1611
Assam	1990923	2309346	36095	45814
Bihar	1722436	2043434	62868	80985
Chandigarh	501582	791619	41209	45611
Chhattisgarh	1959299	2869036	61456	81712
Delhi	3342474	4886210	118695	148744
Goa	103879	149339	1179	1247
Gujarat	5284090	8512327	163130	313623
Haryana	2241915	3068416	94557	99803
Himachal Pradesh	598081	725721	5970	7427
Jammu and Kashmir	1007390	1448209	53670	88678
Jharkhand	1120214	1260650	29357	40322
Karnataka	5079632	7330914	157215	207264
Kerala	4963992	6407497	55322	117043
Ladakh	16408	20388	828	681
Lakshadweep	30416	21562	317	116
Madhya Pradesh	5850461	6562416	195165	180883
Maharashtra	6290102	7892657	207012	227373
Manipur	51010	81924	673	776
Meghalaya	329867	349524	8990	8427
Mizoram	134965	132497	2518	2380
Nagaland	95876	118330	4073	2988
Odisha	4905812	5897914	123109	130243
Puducherry	105386	385884	2436	28524
Punjab	1923974	2051777	53948	57671
Rajasthan	5664871	7746463	174211	209538
Sikkim	35545	38010	1081	1006
Tamil Nadu	8979451	12036838	285862	334464
Telangana	2005172	2321685	128000	170939
The Dadra And Nagar Haveli And Daman And Diu	157830	230042	2537	4220
Tripura	156731	447256	8290	9884
Uttarakhand	371650	452827	6726	8963
Uttar Pradesh	7393377	10917512	260847	339039
West Bengal	4679378	6718811	89946	169317

Annexure 7.5
State/UT-wise Distribution of Widal Tests

States/UTs	Widal tests - Number Tested		Widal tests - Number Positive	
FY	2020-21	2021-22	2020-21	2021-22
All India	5249756	9018388	633859	1146862
Andaman & Nicobar Islands	4490	4828	369	315
Andhra Pradesh	181534	726989	19437	150965
Arunachal Pradesh	17528	17025	3848	3851
Assam	54324	79825	3638	4680
Bihar	39872	64696	10828	16289
Chandigarh	9156	15451	852	1648
Chhattisgarh	231841	472578	54977	84364
Delhi	130952	213038	22177	36924
Goa	1303	2057	82	199
Gujarat	212030	356116	12264	19237
Haryana	136531	242485	21962	37213
Himachal Pradesh	33892	45897	5398	7718
Jammu and Kashmir	48961	65674	4738	5484
Jharkhand	58169	95363	9666	16241
Karnataka	332176	593169	48883	93551
Kerala	81659	91285	2160	2463
Ladakh	76	172	15	25
Lakshadweep	825	772	53	12
Madhya Pradesh	411145	572359	39391	49407
Maharashtra	387637	606551	53219	84956
Manipur	3582	4329	1148	1289
Meghalaya	30630	31243	8318	7085
Mizoram	20200	14447	3274	2294
Nagaland	13470	12431	3501	3134
Odisha	351323	477957	47787	58057
Puducherry	2024	4622	112	253
Punjab	153001	205284	17071	22277
Rajasthan	974544	1641604	70908	121872
Sikkim	363	792	7	21
Tamil Nadu	274991	470832	22803	40024
Telangana	173737	272325	30555	64636
The Dadra And Nagar Haveli And Daman And Diu	9637	20725	529	967
Tripura	10469	19018	1474	2190
Uttarakhand	35121	52307	6924	8504
Uttar Pradesh	744971	1391998	96747	180325
West Bengal	77592	132144	8744	18392

Annexure 7.6

State/UT wise Distribution of HIV Test

FY	2020-21							2021-22						
States/UTs	Male HIV - Number Tested (by finger prick test)	Male HIV - Number Positive	Female Non ANC HIV - Number Tested (by finger prick test)	Female Non ANC HIV - Number Positive	Number of pregnant women screened for HIV (by finger prick test)	Out of the above, number screened positive	Total HIV Tested (M+F+PW)	Male HIV - Number Tested (by finger prick test)	Male HIV - Number Positive	Female Non ANC HIV - Number Tested (by finger prick test)	Female Non ANC HIV - Number Positive	Number of pregnant women screened for HIV (by finger prick test)	Out of the above, number screened positive	Total HIV Tested (M+F+PW)
All India	7366357	75423	5946304	46294	18042447	58167	31355108	9900444	81768	8196475	47811	21114837	39404	39211756
Andaman & Nicobar Islands	11271	13	6803	5	5441	20	23515	11392	34	7538	5	4977	15	23907
Andhra Pradesh	216523	4940	210946	4052	460222	4103	887691	580784	9268	533438	7224	817425	2560	1931647
Arunachal Pradesh	6351	108	7783	182	15838	3	29972	7697	28	8875	15	16950	792	33522
Assam	68740	942	55026	446	423230	661	546996	99538	1977	74548	368	414260	353	588346
Bihar	209140	12034	319753	5695	878561	7008	1407454	258960	4102	385908	2646	964531	4354	1609399
Chandigarh	24751	208	13444	205	18525	21	56720	38106	383	22193	103	20606	15	80905
Chhattisgarh	89513	868	103963	584	458699	2443	652175	158901	1378	184587	644	588885	651	932373
Delhi	187838	1866	128341	719	157349	590	473528	292255	3755	195699	1358	198202	183	686156
Goa	10584	57	6902	31	19087	13	36573	19698	74	13277	52	21362	33	54337
Gujarat	415949	4243	366819	3158	1009571	13179	1792339	580338	7370	504874	4129	1089230	8325	2174442
Haryana	200018	1919	171008	1055	416972	982	787998	265204	2777	208853	1694	472970	1701	947027
Himachal Pradesh	66243	1430	41424	1064	106245	53	213912	86505	210	58247	213	96994	19	241746
Jammu and Kashmir	58462	105	36772	21	128314	36	223548	78091	67	56326	67	184442	50	318859

Jharkhand	89972	891	94766	344	710330	337	895068	121288	647	122459	451	833023	371	1076770
Karnataka	797408	7786	681036	5196	943048	2790	2421492	1054559	8467	920608	6317	1029829	1694	3004996
Kerala	333437	446	254156	431	300244	21	887837	410635	489	324380	252	322088	23	1057103
Ladakh	889	5	1124	3	1942	0	3955	1502	2	1535	0	3462	0	6499
Lakshadweep	3115	1	1694	0	1892	0	6701	2175	0	1510	0	1336	0	5021
Madhya Pradesh	232827	2198	300458	1166	1044987	1386	1578272	286754	2074	361693	983	1151767	607	1800214
Maharashtra	1020492	7596	763964	4918	1655812	2251	3440268	1244251	7536	1009531	5153	2049444	1633	4303226
Manipur	17321	400	11197	121	25175	43	53693	25399	232	15723	139	26188	139	67310
Meghalaya	19424	643	24465	371	75717	284	119606	25039	597	30381	412	76113	755	131533
Mizoram	19449	1129	13009	452	23943	161	56401	18972	884	12092	440	22279	235	53343
Nagaland	24035	791	20779	636	19804	241	64618	26004	913	22154	637	20448	204	68606
Odisha	500097	1544	221863	832	715688	325	1437648	659858	1611	326388	727	891528	312	1877774
Puducherry	21380	60	13871	40	16659	10	51910	35113	81	24685	62	20901	8	80699
Punjab	277174	5594	155526	990	361287	779	793987	318869	6651	186344	1015	350216	1474	855429
Rajasthan	395944	3107	349195	1524	1149633	3166	1894772	579176	3585	469997	1795	1230509	4393	2279682
Sikkim	8935	13	3979	7	7639	2	20553	8764	13	5177	81	7249	54	21190
Tamil Nadu	1066315	2228	652245	1633	853021	813	2571581	1278043	2925	862418	1962	870135	795	3010596
Telangana	174373	3466	169424	3749	486020	4277	829817	212952	3599	228458	3634	513374	3415	954784
The Dadra And Nagar Haveli And Daman And Diu	17059	49	11579	67	15949	99	44587	21887	36	15536	18	17160	37	54583
Tripura	39689	510	23021	59	40942	79	103652	49504	1113	29219	138	44610	33	123333
Uttarakhand	28775	366	29260	264	149731	74	207766	36090	425	36083	231	163409	204	235582
Uttar Pradesh	422894	6192	468786	5020	4173989	11007	5065669	527509	4787	581433	3596	5199661	3517	6308603
West Bengal	289970	1675	211923	1254	1170941	910	1672834	478632	3678	354308	1250	1379274	450	2212214

Annexure 7.7

State/UT wise Distribution of Malaria Microscopy Tests

States/UTs	Total Blood Smears Examined for Malaria		Malaria (Microscopy Tests) - Plasmodium Vivax test positive		Malaria (Microscopy Tests) - Plasmodium Falciparum test positive	
FY	2020-21	2021-22	2020-21	2021-22	2020-21	2021-22
All India	49850068	63939637	103384	124051	50725	65421
Andaman & Nicobar Islands	9519	13965	73	31	21	25
Andhra Pradesh	2552109	4569404	7128	12716	2955	4042
Arunachal Pradesh	17765	21730	73	40	16	143
Assam	1026487	1180212	321	154	59	277
Bihar	31596	46056	522	449	256	146
Chandigarh	16902	34956	494	434	2	5
Chhattisgarh	799740	1177705	4118	3269	10971	11970
Delhi	108470	177560	1156	1537	129	308
Goa	137567	182128	413	568	136	258
Gujarat	8558924	9924859	23920	36623	4124	17718
Haryana	1394700	1860372	1231	1696	19	3
Himachal Pradesh	81668	70411	55	24	0	1
Jammu and Kashmir	79477	105578	162	13	0	1
Jharkhand	1420062	1821812	2707	2243	3255	2574
Karnataka	5674026	7245196	7622	6522	435	1096
Kerala	1051118	1147025	679	154	50	61
Ladakh	3	1	0	1	0	0
Lakshadweep	17	124	1	2	0	0
Madhya Pradesh	2587037	2385615	11099	5313	8280	1212
Maharashtra	8466298	10912102	11454	10458	6052	6363
Manipur	25106	14334	177	34	1	1
Meghalaya	131483	130141	215	62	433	273
Mizoram	37969	26761	129	215	522	383
Nagaland	17748	29762	13	22	13	4
Odisha	642299	821946	837	957	7032	5417
Puducherry	9026	17644	248	1	1	1
Punjab	1231009	1260420	60	47	6	1
Rajasthan	2100976	2603284	3011	10411	176	328
Sikkim	2500	592	1	1	0	0
Tamil Nadu	4644662	5948844	479	648	69	43
Telangana	1881630	1948271	4613	5662	1354	1155
The Dadra And Nagar Haveli And Daman And Diu	43494	68763	44	72	7	10
Tripura	197027	310485	55	221	562	1485
Uttarakhand	26523	37507	152	112	1	0
Uttar Pradesh	972718	1870756	7178	6401	1208	2326
West Bengal	3872413	5973316	12944	16938	2580	7791

Annexure 7.8

State/UT wise Distribution of Malaria RDT Tests

States/UTs	RDT conducted for Malaria		Malaria (RDT) - Plasmodium Vivax test positive		Malaria (RDT) - Plamodium Falciparum test positive	
FY	2020-21	2021-22	2020-21	2021-22	2020-21	2021-22
All India	20220372	25290875	66616	84304	108313	108530
Andaman & Nicobar Islands	5226	9751	235	154	135	111
Andhra Pradesh	700538	1267903	1669	8236	1163	3645
Arunachal Pradesh	18906	21659	66	7	21	146
Assam	987920	1254140	405	545	294	71
Bihar	45446	104079	538	1210	282	603
Chandigarh	1901	5373	10	12	5	2
Chhattisgarh	2160773	2652068	12803	11561	39981	38807
Delhi	77471	144787	760	943	65	123
Goa	3769	16197	104	249	36	132
Gujarat	410374	640260	3712	4592	367	1000
Haryana	205277	171279	999	362	423	83
Himachal Pradesh	2012	2908	3	3	10	5
Jammu and Kashmir	2889	3431	21	0	0	0
Jharkhand	903899	894682	5444	3533	7833	6107
Karnataka	74104	129165	1070	683	277	984
Kerala	95686	128378	111	57	68	40
Ladakh	0	0	0	0	0	0
Lakshadweep	1571	1068	0	1	0	1
Madhya Pradesh	5150390	5228871	5687	14895	6131	3259
Maharashtra	896739	1266480	7098	8320	5474	9456
Manipur	80263	82877	4	15	4	12
Meghalaya	154359	169811	284	301	956	341
Mizoram	161055	170018	981	788	3048	2622
Nagaland	38804	42848	12	11	17	11
Odisha	5316148	6388779	4650	4183	32873	23257
Puducherry	576	2489	1	5	0	3
Punjab	42365	182577	11	63	7	0
Rajasthan	359031	555814	789	4725	441	607
Sikkim	477	1205	0	10	3	1
Tamil Nadu	13973	32118	4	9	26	0
Telangana	289219	402309	3717	777	1058	430
The Dadra And Nagar Haveli And Daman And Diu	5525	7170	8	0	0	1
Tripura	426743	471777	1260	2213	2628	9959
Uttarakhand	12269	23807	18	20	1	2
Uttar Pradesh	519104	995367	11750	9403	3798	2657
West Bengal	1055570	1819430	2392	6418	888	4052

Annexure 7.9

State/UT wise Distribution of Syphilis Tests

States/UTs	Total number of pregnant women registered for ANC		Number of PW tested using POC test for Syphilis		Out of above,number of PW found sero positive for Syphilis	
FY	2020-21	2021-22	2020-21	2021-22	2020-21	2021-22
All India	27591287	27642485	2476264	3517475	13522	3792
Andaman & Nicobar Islands	4661	4854	1266	1186	11	12
Andhra Pradesh	898478	869719	6831	16995	199	188
Arunachal Pradesh	31633	32301	117	172	0	2
Assam	658145	655116	2482	690	173	4
Bihar	3147963	3020869	784	2040	328	101
Chandigarh	21179	26004	0	0	0	0
Chhattisgarh	613979	641197	1949	2947	25	37
Delhi	531298	462620	4	25	0	0
Goa	21949	26017	202	0	2	0
Gujarat	1275709	1315690	15742	29780	194	141
Haryana	558728	551577	5652	13718	27	206
Himachal Pradesh	112254	106340	574	844	55	10
Jammu and Kashmir	381587	250766	232	23	1	3
Jharkhand	946963	972325	184851	332147	378	152
Karnataka	1132856	1179184	2373	1374	301	157
Kerala	427749	449205	22	574	1	0
Ladakh	4083	4470	0	0	0	0
Lakshadweep	1288	1184	0	0	0	0
Madhya Pradesh	1906200	1853873	15794	10300	590	442
Maharashtra	2048040	2057545	18801	120687	176	114
Manipur	45641	46451	112	118	3	0
Meghalaya	110762	109015	60	75	2	3
Mizoram	23887	21485	4328	5319	14	27
Nagaland	33105	34272	2008	2463	28	38
Odisha	714791	703280	149116	337603	121	59
Puducherry	70355	70456	297	354	0	18
Punjab	438766	431241	2144	182	0	0
Rajasthan	1697020	1684215	53882	85585	281	403
Sikkim	7880	7678	319	345	0	0
Tamil Nadu	1005569	1009091	1408	518	14	11
Telangana	711150	746786	2218	1355	434	224
The Dadra And Nagar Haveli And Daman And Diu	13068	12650	0	17	0	6
Tripura	63626	60110	434	48	3	0
Uttarakhand	203021	192825	1677	3390	2	9
Uttar Pradesh	6131032	6428813	1179852	1672295	8815	1063
West Bengal	1596872	1603261	820733	874306	1344	362

Annexure 7.10

State/UT wise Distribution of HB among pregnant women

FY	2020-21					2021-22				
States/UTs	Total number of pregnant women registered for ANC	Number of PW having Hb level<11 (out of total tested cases)(7.1 to 10.9)	Number of PW having Hb level<7 (out of total tested cases)	% of PW having Hb level<11 (out of total tested cases)(7.1 to 10.9)	% PW having HB <7	Total number of pregnant women registered for ANC	Number of PW having Hb level<11 (out of total tested cases)(7.1 to 10.9)	Number of PW having Hb level<7 (out of total tested cases)	% of PW having Hb level<11 (out of total tested cases)(7.1 to 10.9)	% PW having HB <7
All India	27591287	17863961	878593	95.31	4.69	27642485	18495869	861606	95.55	4.45
Andaman & Nicobar Islands	4661	4340	88	98.01	1.99	4854	3743	153	96.07	3.93
Andhra Pradesh	898478	657727	16589	97.54	2.46	869719	634268	17261	97.35	2.65
Arunachal Pradesh	31633	8194	301	96.46	3.54	32301	7322	303	96.03	3.97
Assam	658145	402435	16283	96.11	3.89	655116	419698	14690	96.62	3.38
Bihar	3147963	1036119	44032	95.92	4.08	3020869	1126984	53672	95.45	4.55
Chandigarh	21179	8831	445	95.20	4.80	26004	8188	457	94.71	5.29
Chhattisgarh	613979	459870	11668	97.53	2.47	641197	434602	11105	97.51	2.49
Delhi	531298	131122	12084	91.56	8.44	462620	162779	11459	93.42	6.58
Goa	21949	3857	219	94.63	5.37	26017	4031	175	95.84	4.16
Gujarat	1275709	838420	60082	93.31	6.69	1315690	841845	51141	94.27	5.73
Haryana	558728	478008	33452	93.46	6.54	551577	501723	35930	93.32	6.68
Himachal Pradesh	112254	99778	876	99.13	0.87	106340	94887	597	99.37	0.63
Jammu and Kashmir	381587	211836	42062	83.43	16.57	250766	267646	36121	88.11	11.89
Jharkhand	946963	444455	13178	97.12	2.88	972325	474741	13779	97.18	2.82

Karnataka	1132856	849398	39014	95.61	4.39	1179184	844279	43344	95.12	4.88
Kerala	427749	110333	3061	97.30	2.70	449205	102699	3526	96.68	3.32
Ladakh	4083	2094	93	95.75	4.25	4470	2163	76	96.61	3.39
Lakshadweep	1288	1342	37	97.32	2.68	1184	686	35	95.15	4.85
Madhya Pradesh	1906200	1413572	86645	94.22	5.78	1853873	1308373	75619	94.54	5.46
Maharashtra	2048040	1635513	68354	95.99	4.01	2057545	1669626	75996	95.65	4.35
Manipur	45641	3828	227	94.40	5.60	46451	4708	146	96.99	3.01
Meghalaya	110762	69437	4973	93.32	6.68	109015	77200	3320	95.88	4.12
Mizoram	23887	17101	171	99.01	0.99	21485	17406	217	98.77	1.23
Nagaland	33105	5082	155	97.04	2.96	34272	5719	251	95.80	4.20
Odisha	714791	451775	10990	97.63	2.37	703280	442820	10477	97.69	2.31
Puducherry	70355	16386	754	95.60	4.40	70456	19588	1066	94.84	5.16
Punjab	438766	340632	9504	97.29	2.71	431241	338901	8613	97.52	2.48
Rajasthan	1697020	1273451	55459	95.83	4.17	1684215	1255195	52347	96.00	4.00
Sikkim	7880	2282	179	92.73	7.27	7678	2126	317	87.02	12.98
Tamil Nadu	1005569	2575003	86015	96.77	3.23	1009091	2726652	78922	97.19	2.81
Telangana	711150	495804	42577	92.09	7.91	746786	483043	40660	92.24	7.76
The Dadra And Nagar Haveli And Daman And Diu	13068	6503	397	94.25	5.75	12650	7098	264	96.41	3.59
Tripura	63626	25924	558	97.89	2.11	60110	28424	443	98.47	1.53
Uttarakhand	203021	120003	3970	96.80	3.20	192825	120264	3525	97.15	2.85
Uttar Pradesh	6131032	2910185	199062	93.60	6.40	6428813	3148707	193291	94.22	5.78
West Bengal	1596872	753321	15039	98.04	1.96	1603261	907735	22308	97.60	2.40

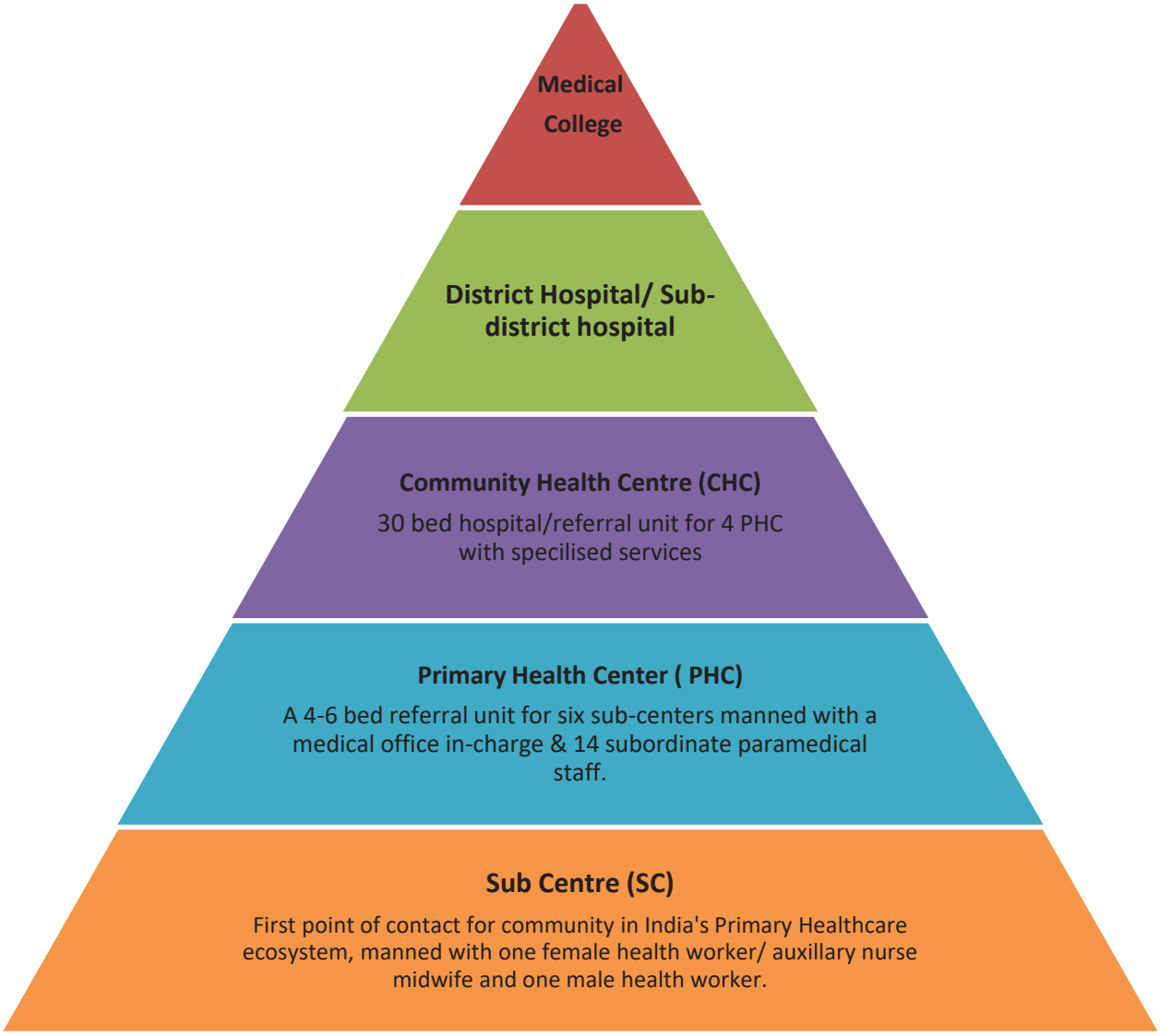
CHAPTER 8

FIRST REFERRAL UNITS

What is a First Referral Unit (FRU)?

Healthcare delivery in India has been envisaged at three levels namely Primary, Secondary and Tertiary. The secondary level of health care essentially includes Community Health Centres (CHCs), constituting the First Referral Units (FRUs) and the Sub-district and District Hospitals. The CHCs were designed to provide referral health care for cases from the Primary Health Centres level and for cases in need of specialist care approaching the Centre directly.

Figure 8.1 Tiered structure of Public Health Facilities in India

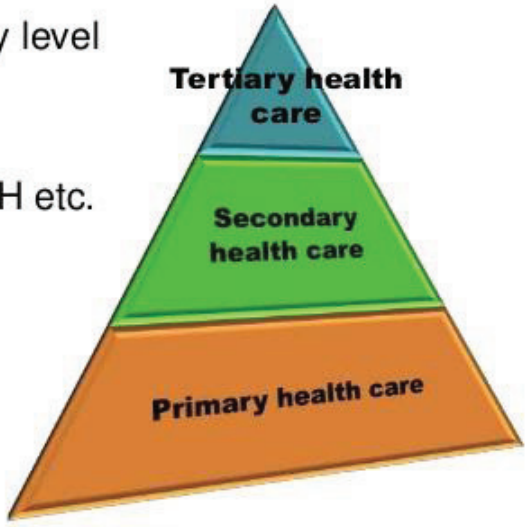


Levels of health care

❑**Primary Health care**
➢Provided at the community level

❑**Secondary health care**
➢Provided at PHC, CHC, DH etc.

❑**Tertiary health care**
➢Provided at hospitals



A CHC is a 30-bedded hospital providing specialist care in Medicine, Obstetrics and Gynaecology, Surgery, Paediatrics, Dental and AYUSH. These centres are however fulfilling the tasks entrusted to them only to a limited extent.

First Referral Units (FRU) provides comprehensive obstetric care services including like cesarean section, newborn 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. Number of FRUs has increased significantly from 940 in 2005 to 1685 Functional FRUs in 2021-22.

Background:

Reduction in Maternal Mortality rate is the stated goal for National Population Policy, National Health Policy and Tenth Five Year Plan and is also one of the Millennium Development Goals (MDG) to which the country is a signatory and has to respond. The Maternal mortality in India continues to remain unacceptably high. Historical evidence at the global level has demonstrated that it is possible to bring down maternal mortality effectively if a package of obstetric services is provided within reach of the communities and the families. It is in this context that efforts were initiated in 1992 with the implementation of the Child Survival and Safe Motherhood (CSSM) Programme with assistance from World Bank and UNICEF for upgrading the existing community health centers and sub-district hospitals intoFirst Referral Units (FRUs), to be equipped for providing delivery of emergency obstetric care to pregnant women with complications.

Over the years, a number of steps have been taken under the RCH Programme for facilitating the operationalisation of these FRUs. These have included funds for operationalising Operation Theatre (OTs) and Labour Rooms (LRs), supply of equipment kits, supply of drug kits containing emergency obstetric care drugs and funds for hiring of Anaesthetists from private sector. Drugs and Cosmetics Rules have also been amended to enable setting up of Blood Storage Units in the institutions designated as First Referral Units (FRUs).

The Maternal Mortality Rate (MMR) at the National level continues to be above 178 per 100,000 live births. The MMR in many major states particularly those, which are part of the Empowered Action Group (EAG), is much above the National average. This situation is a major cause of concern and it is imperative that focused efforts have to be made for making the First Referral Units fully operational, in case we have to meet the National objective of bringing down the MMR to less than 100.

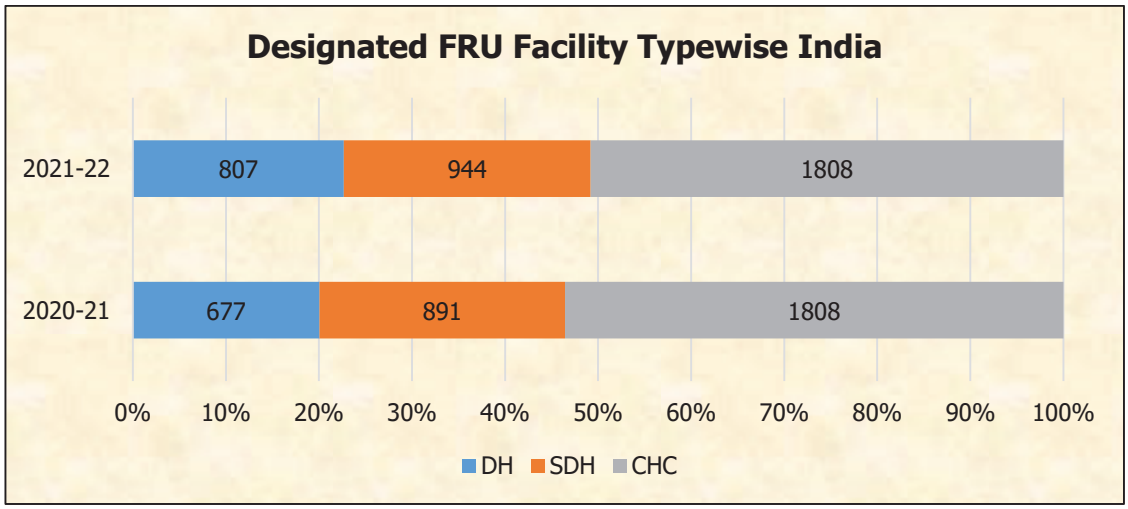
An existing facility i.e. district hospital, sub-divisional hospital, Community Health Centre etc. can be declared fully operational First Referral Unit (FRU) only if it is equipped to provide round the clock services for Emergency Obstetric and New Born Care, in addition to all emergencies that any hospital is required to provide.

Designated FRUs in India (as marked in HMIS)

HMIS has a provision for marking a facility as First Referral Unit (FRU) in the facility master. As per the marking of facilities as FRU in the HMIS Facility Master, at All India level during 2020-21 3376 facilities have been marked as First Referral Unit, whereas during 2021-22 the number has increased to 3559.

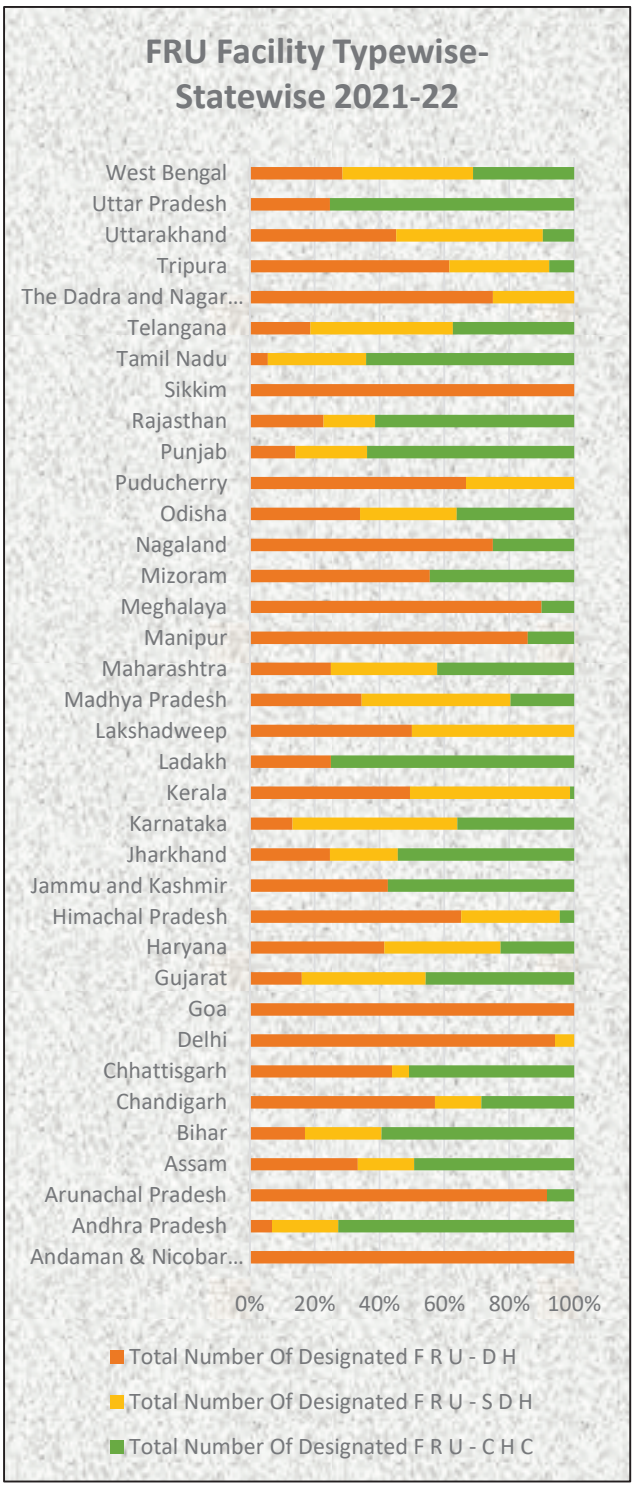
It can be seen that the share of District Hospitals and Sub District Hospitals marked as FRU have increased during 2021-22 from 677 in 2020-21 to 807 in 2021-22 and for SDH the number has increased from 891 in 2020-21 to 944 in 2021-22.

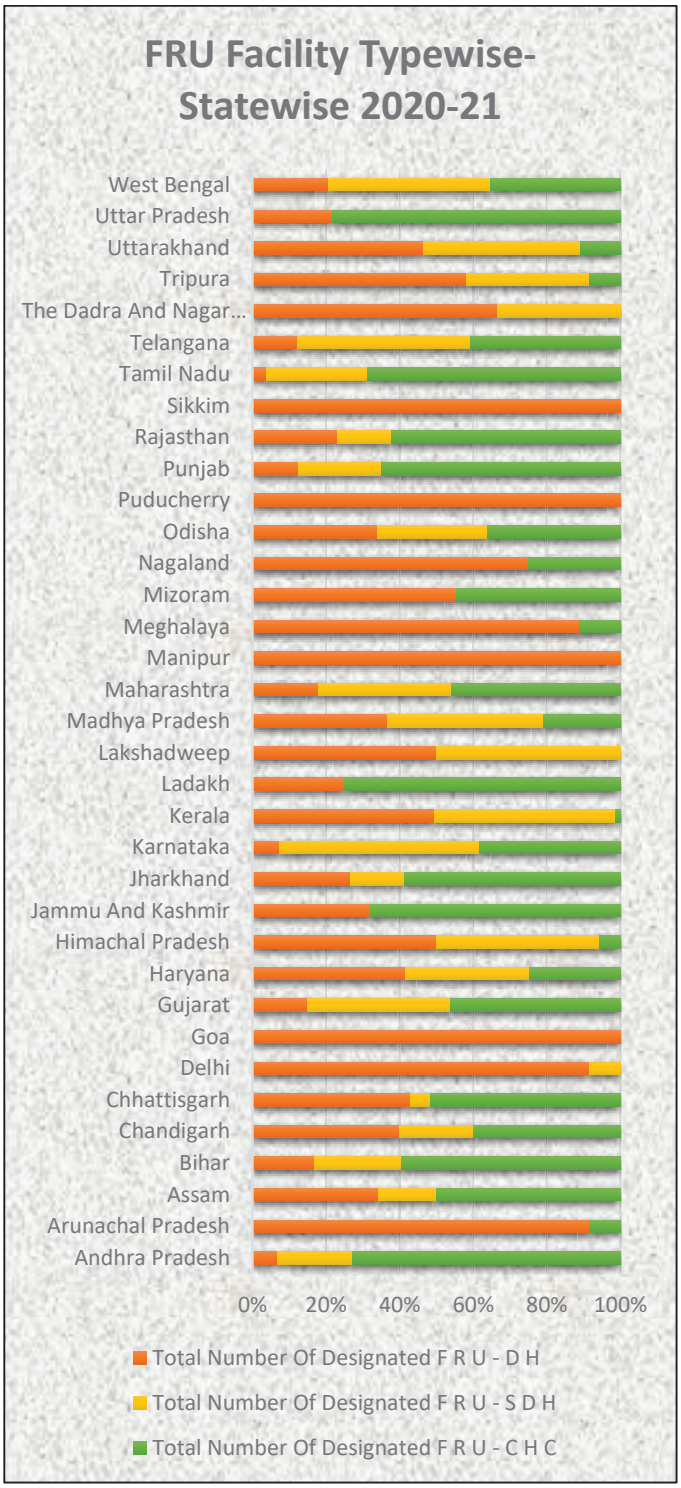
Fig 8.2: Number of designated FRU Facility type wise:



State wise facility type wise breakup of FRU reveals that in 4 States/ UTs i.e. Goa, Manipur, Puducherry, Sikkim all the FRU facilities are at District Hospital level only but no lower level facility has been marked as FRU during the year 2020-21. Whereas during the year 2021-22 only two States/ UT i.e Goa and A&N Islands have all FRU facilities at DH only. The State wise FRUs with bifurcation of Facility types as follows:

Figure 8.3 Number of FRU Facility Typewise - Statewise

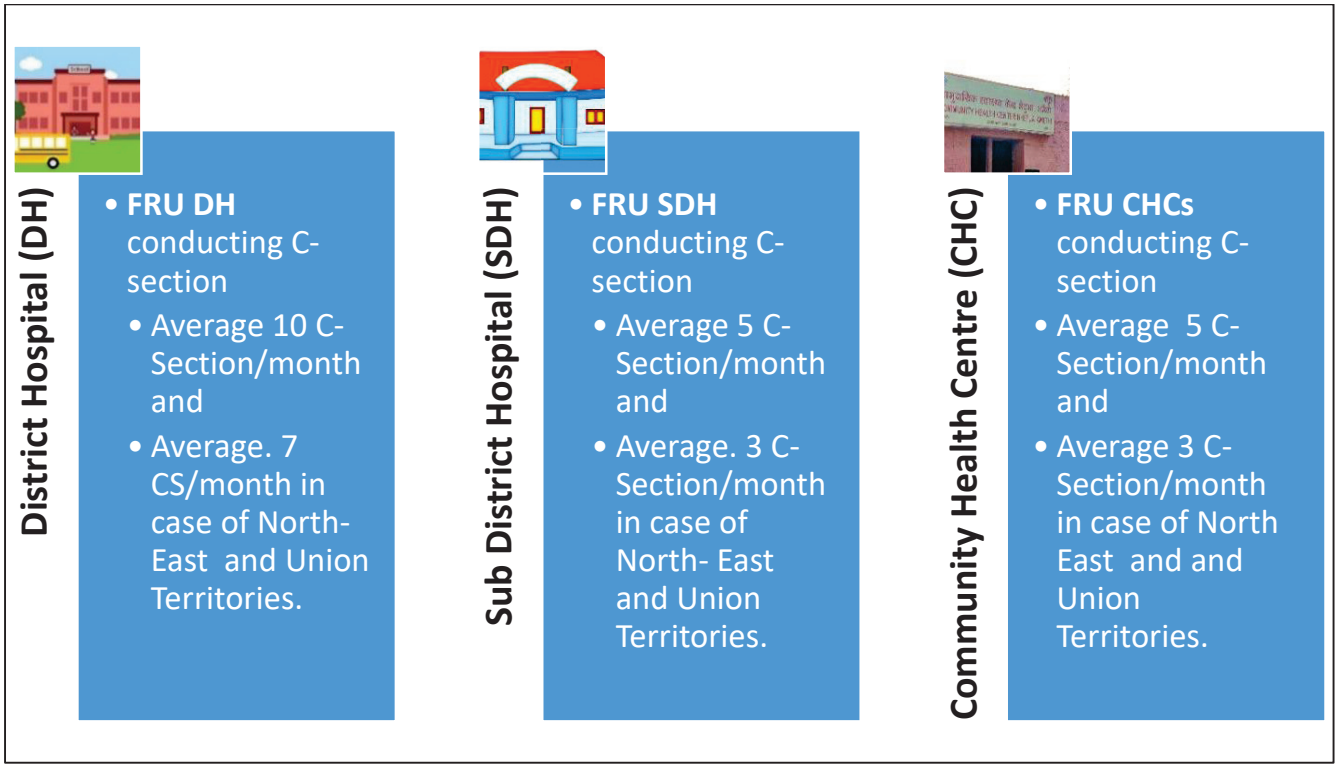




Criteria for facilities to be categorized as Functional FRU

The basic criterion for a facility which has been marked in HMIS Facility Master as FRU to be classified as functional FRU is as follows:

Figure 8.4 Criteria for being a functional FRU



Outcomes based on functionality criteria

Based on the above mentioned criterion for being a functional FRU as above during 2021-22, 85% of District Hospitals i.e. 689 out of 807 satisfy the criteria; 64 % Sub District Hospitals i.e. 602 out of 944, whereas only 22% of CHC i.e. 394 out of 1808 satisfy the criteria.

Figure 8.5 Number of designated vs. conditional FRU Facility Typewise

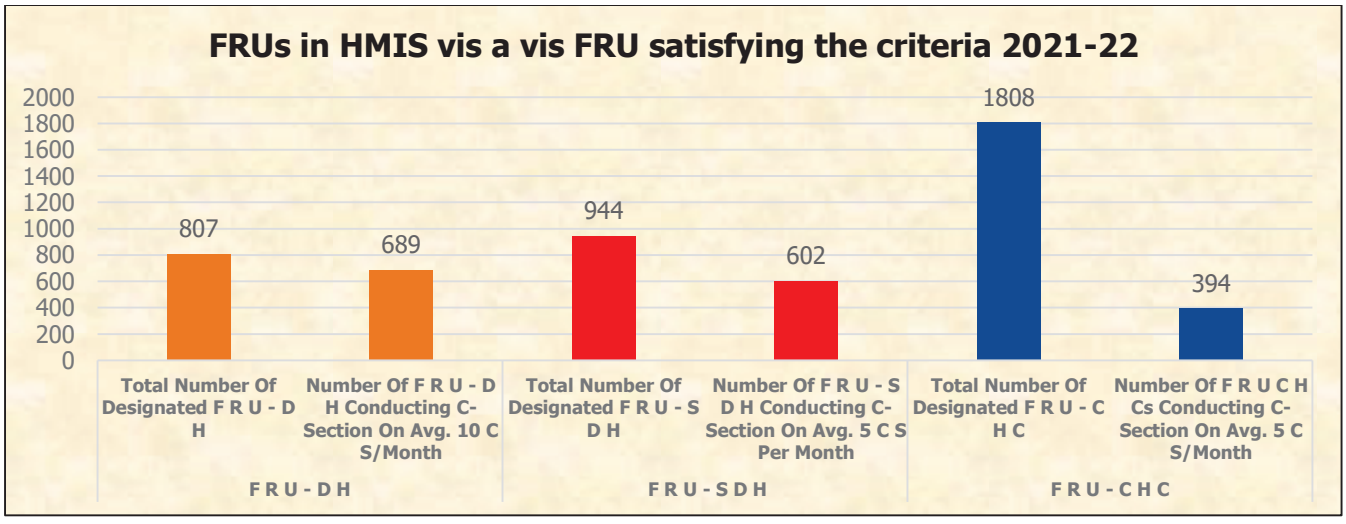
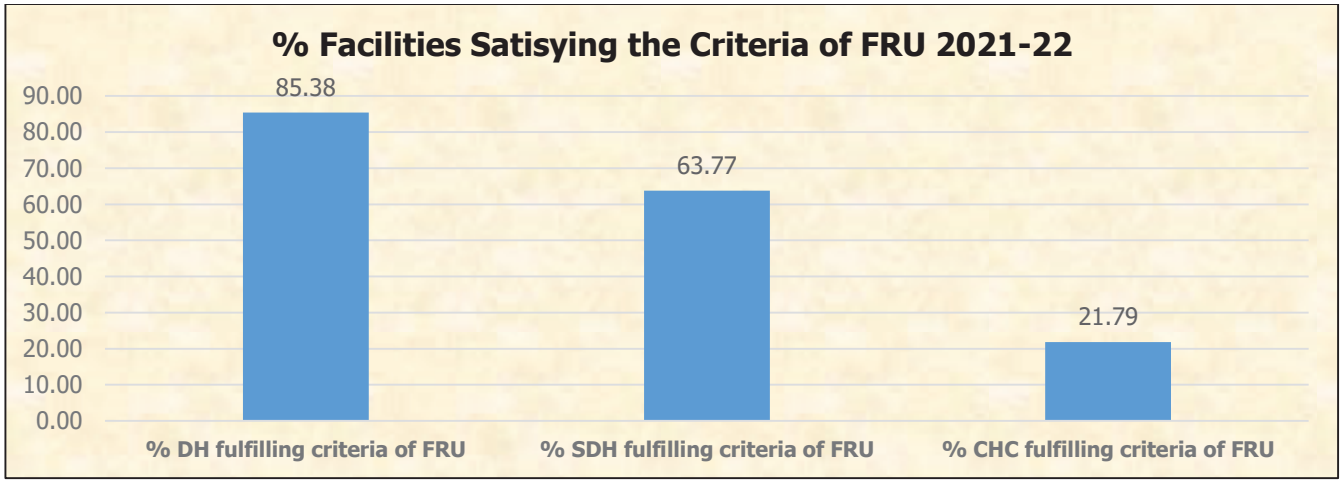
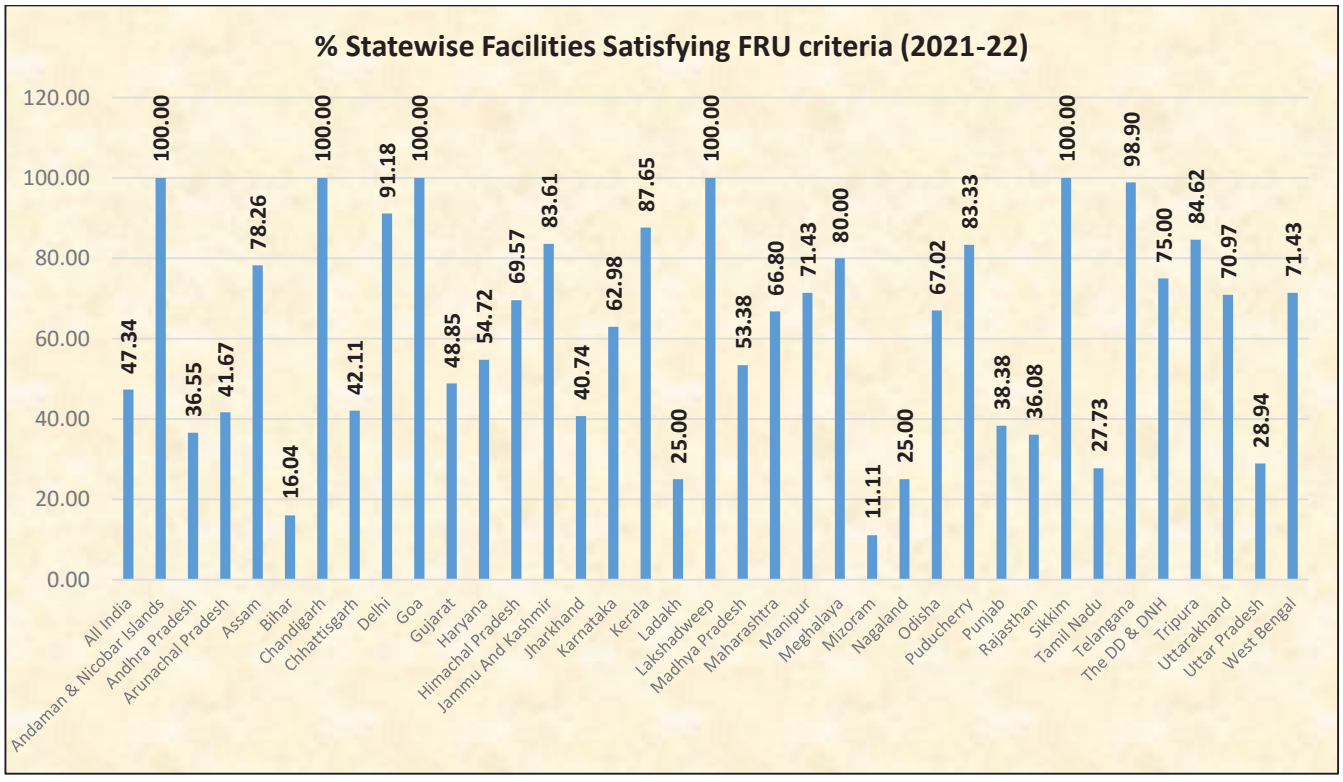


Figure 8.6 Percentage of Facilities Satisfying the Criteria of FRU 2021-22



If we see the state-wise data of Facilities satisfying the criteria of Functional FRU, 100% of facilities in A& N Islands, Chandigarh, Goa, Lakshadweep and Sikkim are satisfying the criteria i.e. all the facilities marked as FRU in HMIS facility master are functioning as FRUs, whereas for Mizoram only 11% and for Bihar only 16% facilities are functioning as FRU. The State/ UT-wise details are given at **Annexure 8.3 & 8.4**.

Figure 8.7 Percentage of Facilities Satisfying FRU criteria (2021-22) State wise



First Referral Units (on the basis of population)

As per population norms one First Referral Unit (FRU) should be there for every 5 lac population. As per this norm there should be around 2714 FRU across the country, whereas in HMIS 3559 facilities have been marked as FRU in 2021-22 which is 24% more than the

norms at All India Level while during the previous year i.e. 2020-21 in HMIS 3380 facilities have been marked as FRU against a requirement of 2714 FRUs which is 25% more than the norms at All India Level. The State/ UT-wise details are given at **Annexure 8.1 & 8.2.**

Annexure 8.1: FRU Required vis a vis the facilities actually marked as FRU in HMIS 2020-21

State/ UT	Population 2020-21*	No of FRU required as per 5 Lac Population	Facilities marked as FRUs in HMIS	Difference in FRUs= Required-Facilities designated as FRU	% Deficit
1	2	3	4	5=3-4	6= 5/3 X
India	1356978000	2714	3380	-666	-25
A & N Islands	400000	1	0	1	100
Andhra Pradesh	52669000	105	249	-144	-136
Arunachal Pradesh	1526000	3	12	-9	-293
Assam	34887000	70	70	0	0
Bihar	122341000	245	212	33	13
Chandigarh	1202000	2	5	-3	-108
Chhattisgarh	29333000	59	58	1	1
Delhi	20414000	41	24	17	41
Goa	1555000	3	2	1	36
Gujarat	69402000	139	128	11	8
Haryana	29314000	59	53	6	10
Himachal Pradesh	7374000	15	18	-3	-22
Jammu And Kashmir	13365000	27	50	-23	-87
Jharkhand	38249000	76	75	1	2
Karnataka	66627000	133	271	-138	-103
Kerala	35413000	71	81	-10	-14
Ladakh	296000	1	8	-7	-1251
Lakshadweep	68000	0	2	-2	-1371
Madhya Pradesh	84040000	168	139	29	17
Maharashtra	123961000	248	233	15	6
Manipur	3149000	6	4	2	36
Meghalaya	3272000	7	9	-2	-38
Mizoram	1210000	2	9	-7	-272
Nagaland	2182000	4	16	-12	-267
Odisha	45552000	91	94	-3	-3
Puducherry	1557000	3	4	-1	-28
Punjab	30239000	60	182	-122	-201
Rajasthan	78861000	158	156	2	1
Sikkim	673000	1	3	-2	-123
Tamil Nadu	76255000	153	539	-386	-253
Telangana	37599000	75	81	-6	-8
DNH & DD	1053000	2	3	-1	-42
Tripura	4051000	8	12	-4	-48
Uttar Pradesh	229672000	459	410	49	11
Uttarakhand	11346000	23	28	-5	-23
West Bengal	97871000	196	136	60	31

*Mid-year projected mid- year population as on 1st October, 2020 (based on approved report of 2011-2036)

Annexure 8.2: FRU Required vis a vis the facilities actually marked as FRU in HMIS during 2021-22

State/ UT	Population 2021-22*	No of FRU required as per 5 Lac Population	Facilities marked as FRUs in HMIS	Deficit FRUs= Required- Facilities designated as FRU	% Deficit
1	2	3	4	5=3-4	6= 5/3 X
India	1356978000	2714	3559	-845	-31
Andaman & Nicobar	401000	1	1	0	-25
Andhra Pradesh	52895000	106	249	-143	-135
Arunachal Pradesh	1540000	3	12	-9	-290
Assam	35239000	70	69	1	2
Bihar	124154000	248	212	36	15
Chandigarh	1215000	2	7	-5	-188
Chhattisgarh	29693000	59	57	2	4
Delhi	20801000	42	34	8	18
Goa	1563000	3	2	1	36
Gujarat	70289000	141	131	10	7
Haryana	29695000	59	53	6	11
Himachal Pradesh	7415000	15	23	-8	-55
Jammu And Kashmir	13465000	27	61	-34	-127
Jharkhand	38762000	78	81	-3	-4
Karnataka	67092000	134	289	-155	-115
Kerala	35573000	71	81	-10	-14
Ladakh	298000	1	8	-7	-1242
Lakshadweep	68000	0	2	-2	-1371
Madhya Pradesh	85118000	170	148	22	13
Maharashtra	125005000	250	256	-6	-2
Manipur	3179000	6	7	-1	-10
Meghalaya	3303000	7	10	-3	-51
Mizoram	1221000	2	9	-7	-269
Nagaland	2203000	4	16	-12	-263
Odisha	45865000	92	94	-2	-2
Puducherry	1593000	3	6	-3	-88
Punjab	30453000	61	185	-124	-204
Rajasthan	79790000	160	158	2	1
Sikkim	680000	1	3	-2	-121
Tamil Nadu	76536000	153	577	-424	-277
Telangana	37816000	76	91	-15	-20
The DD & DNH	1132000	2	4	-2	-77
Tripura	4090000	8	13	-5	-59
Uttar Pradesh	232301000	465	425	40	9
Uttarakhand	11468000	23	31	-8	-35
West Bengal	98404000	197	154	43	22
*Mid-year projected mid- year population as on 1st October, 2021 (based on approved report of 2011-2036)					

Annexure 8.3 Designated and functional FRU Facility type wise during 2021-22

	F R U - D H		F R U - S D H		F R U - C H C		Total FRU	
State/ UT	**Designated**	**Functional**	**Designated**	**Functional**	**Designated**	**Functional**	**Designated**	**Functional**
All India	807	689	944	602	1808	394	3559	1685
A&N Islands	1	1	0	0	0	0	1	1
Andhra Pradesh	17	16	51	36	181	39	249	91
Arunachal Pradesh	11	5	0	0	1	0	12	5
Assam	23	22	12	9	34	23	69	54
Bihar	36	27	50	6	126	1	212	34
Chandigarh	4	4	1	1	2	2	7	7
Chhattisgarh	25	18	3	0	29	6	57	24
Delhi	32	30	2	1	0	0	34	31
Goa	2	2	0	0	0	0	2	2
Gujarat	21	20	50	28	60	16	131	64
Haryana	22	19	19	7	12	3	53	29
Himachal Pradesh	15	11	7	4	1	1	23	16
Jammu and Kashmir	26	23	0	0	35	28	61	51
Jharkhand	20	15	17	7	44	11	81	33
Karnataka	38	36	147	113	104	33	289	182
Kerala	40	37	40	33	1	1	81	71
Ladakh	2	2	0	0	6	0	8	2
Lakshadweep	1	1	1	1	0	0	2	2
Madhya Pradesh	51	46	68	26	29	7	148	79
Maharashtra	64	58	84	55	108	58	256	171
Manipur	6	5	0	0	1	0	7	5
Meghalaya	9	7	0	0	1	1	10	8
Mizoram	5	1	0	0	4	0	9	1
Nagaland	12	4	0	0	4	0	16	4
Odisha	32	32	28	15	34	16	94	63
Puducherry	4	3	2	2	0	0	6	5
Punjab	26	25	41	28	118	18	185	71
Rajasthan	36	30	25	13	97	14	158	57
Sikkim	3	3	0	0	0	0	3	3
Tamil Nadu	32	32	175	108	370	20	577	160
Telangana	17	17	40	40	34	33	91	90
DNH & DD	3	3	1	0	0	0	4	3
Tripura	8	7	4	3	1	1	13	11
Uttarakhand	14	10	14	11	3	1	31	22
Uttar Pradesh	105	78	0	0	320	45	425	123
West Bengal	44	39	62	55	48	16	154	110

Annexure 8.4 Designated and functional FRU Facility type wise during 2020-21

State/ UT	F R U - D H		F R U - S D H		F R U - C H C		Total FRU	
	Designated	Functional	Designated	Functional	Designated	Functional	Designated	Functional
All India	677	551	891	524	1808	368	3376	1443
A&N Islands								
Andhra Pradesh	17	16	51	37	181	44	249	97
Arunachal Pradesh	11	5	0	0	1	0	12	5
Assam	24	22	11	6	35	22	70	50
Bihar	36	24	50	5	126	3	212	32
Chandigarh	2	2	1	1	2	2	5	5
Chhattisgarh	25	17	3	1	30	4	58	22
Delhi	22	21	2	1	0	0	24	22
Goa	2	2	0	0	0	0	2	2
Gujarat	19	16	50	26	59	20	128	62
Haryana	22	20	18	8	13	2	53	30
Himachal Pradesh	9	5	8	4	1	1	18	10
Jammu And Kashmir	16	13	0	0	34	25	50	38
Jharkhand	20	16	11	0	44	7	75	23
Karnataka	20	17	147	102	104	32	271	151
Kerala	40	37	40	32	1	1	81	70
Ladakh	2	2	0	0	6	0	8	2
Lakshadweep	1	1	1	1	0	0	2	2
Madhya Pradesh	51	46	59	19	29	5	139	70
Maharashtra	42	34	84	51	107	52	233	137
Manipur	4	3	0	0	0	0	4	3
Meghalaya	8	6	0	0	1	1	9	7
Mizoram	5	0	0	0	4	0	9	0
Nagaland	12	4	0	0	4	0	16	4
Odisha	32	32	28	13	34	13	94	58
Puducherry	4	3	0	0	0	0	4	3
Punjab	23	23	41	30	118	20	182	73
Rajasthan	36	30	23	8	97	14	156	52
Sikkim	3	2	0	0	0	0	3	2
Tamil Nadu	20	20	148	81	371	24	539	125
Telangana	10	10	38	36	33	29	81	75
DNH & DD	2	2	1	0	0	0	3	2
Tripura	7	7	4	2	1	1	12	10
Uttarakhand	13	5	12	7	3	0	28	12
Uttar Pradesh	89	62	0	0	321	31	410	93
West Bengal	28	26	60	53	48	15	136	94

CHAPTER 9

PATIENT SERVICES UTILIZATION

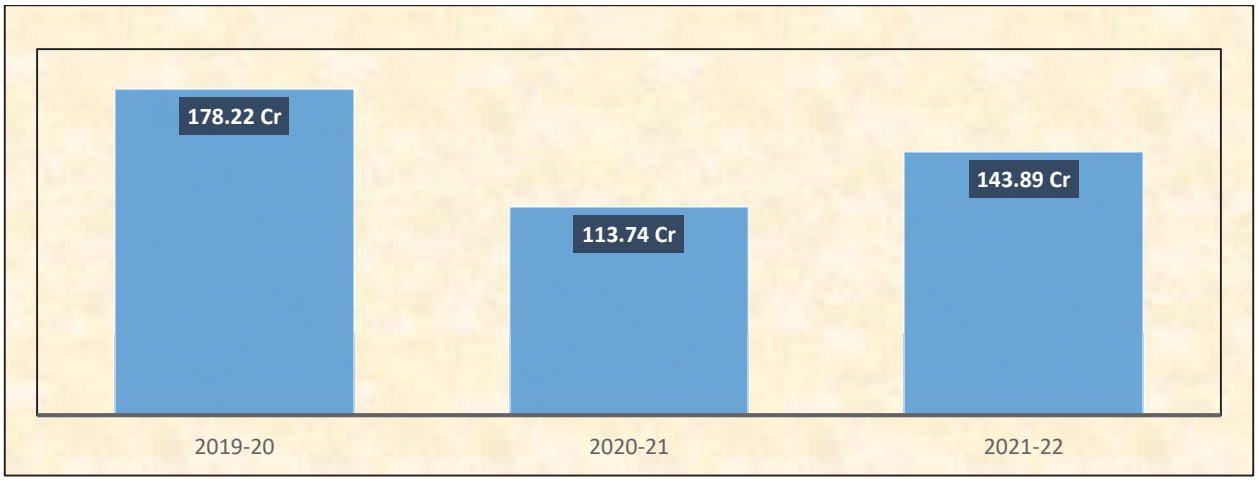
9.1 OUTPATIENT DEPARTMENT

The vision of the NHM is the "Attainment of Universal Access to Equitable, Affordable, and Quality health care services, accountable and responsive to people's needs, with effective inter-sectoral convergent action to address the wider social determinants of health". NHM focuses on decentralized health planning, service delivery, creating knowledge hubs within district hospitals, strengthening secondary level care at district hospitals, expanding outreach services, improving community processes and behaviour change communication, human resources development, public health management, and Health Management Information System (HMIS).

Out Patient Department (OPD) services plays an important role in measurement and availability of the various key health services at facility level. After the implementation of Ayushmaan Bharat-Health and Wellness Centres, the range of OPD services has been extended even upto Sub Centre level.

In HMIS, the data of OPD services is captured in the form of Outpatients for Diabetes, Hypertension, Stroke (Paralysis), Acute Heart Diseases, Mental Illness, Epilepsy, Ophthalmic, Dental, and Oncology etc. at the Primary, Secondary and Tertiary levels.

Figure 9.1 Year wise comparison of total OPDs



The data reported by the States/ UTs in HMIS portal has been analyzed for the year 2020-21 and 2021-22 with respect to the total OPD cases and individual contribution of the different facility level has been observed. It is noted that during the year 2020-21 at National Level SCs, PHCs, CHCs, SDHs & DHs caters to 16.4%, 34.7%, 19.5%, 14.4% and 15% of total OPDs respectively, whereas almost the same trend has been observed for the year 2021-22 as 16.7%, 31.9%, 19.4%, 15.6% and 16.3% of OPDs respectively. However, at PHC and SDH level there is decline of 2.8% and 1% of OPD cases, whereas at DH there is 1% increase in the year 2021-22 w.r.t 2020-21. The State/ UT wise OPD services provided by each facility type during year 2020-21 and 2021-22 are represented under **Figure 9.1a & Figure 9.1b** respectively.

Figure 9.1a Percentage of OPD catered as per facility type (2020-21)

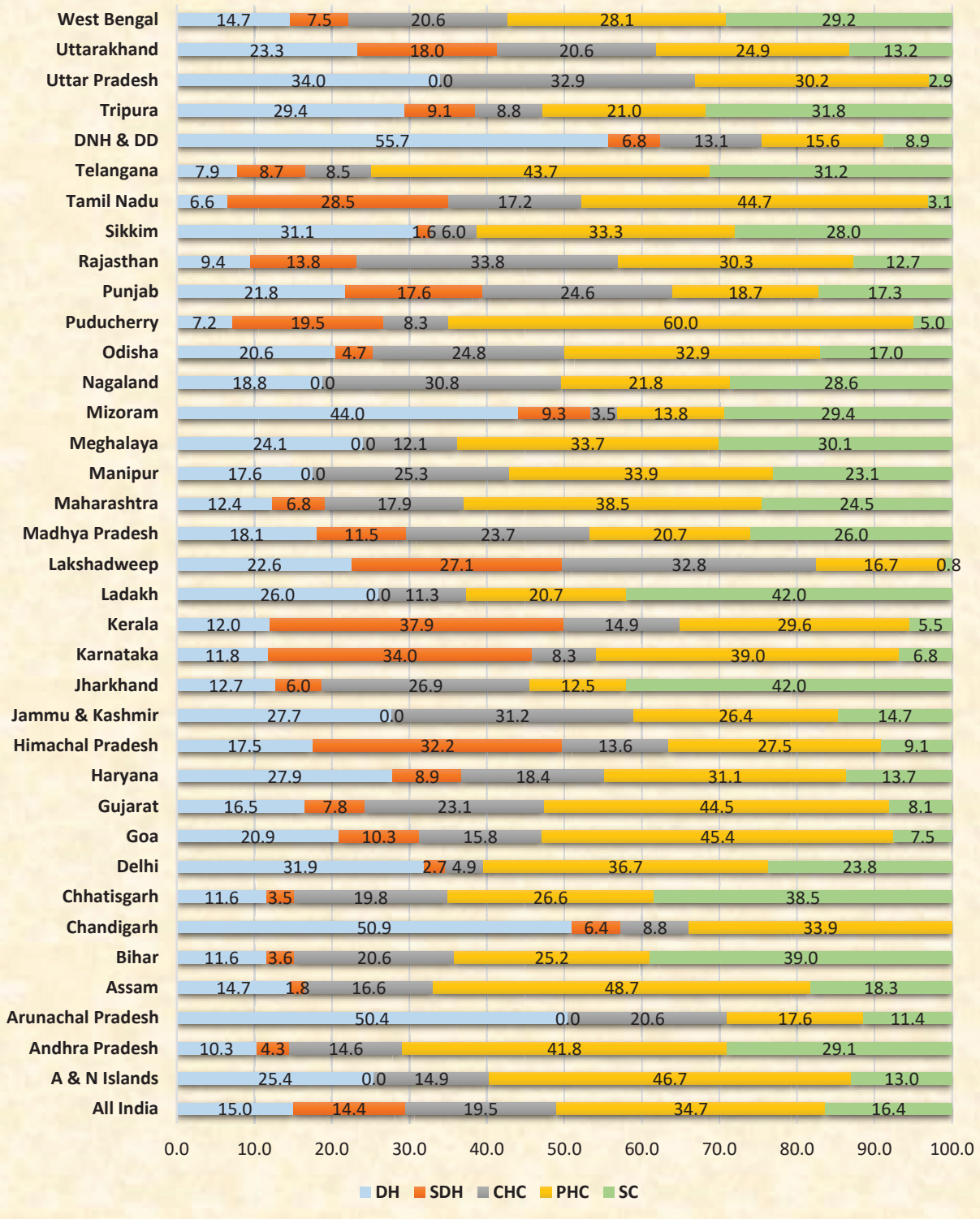
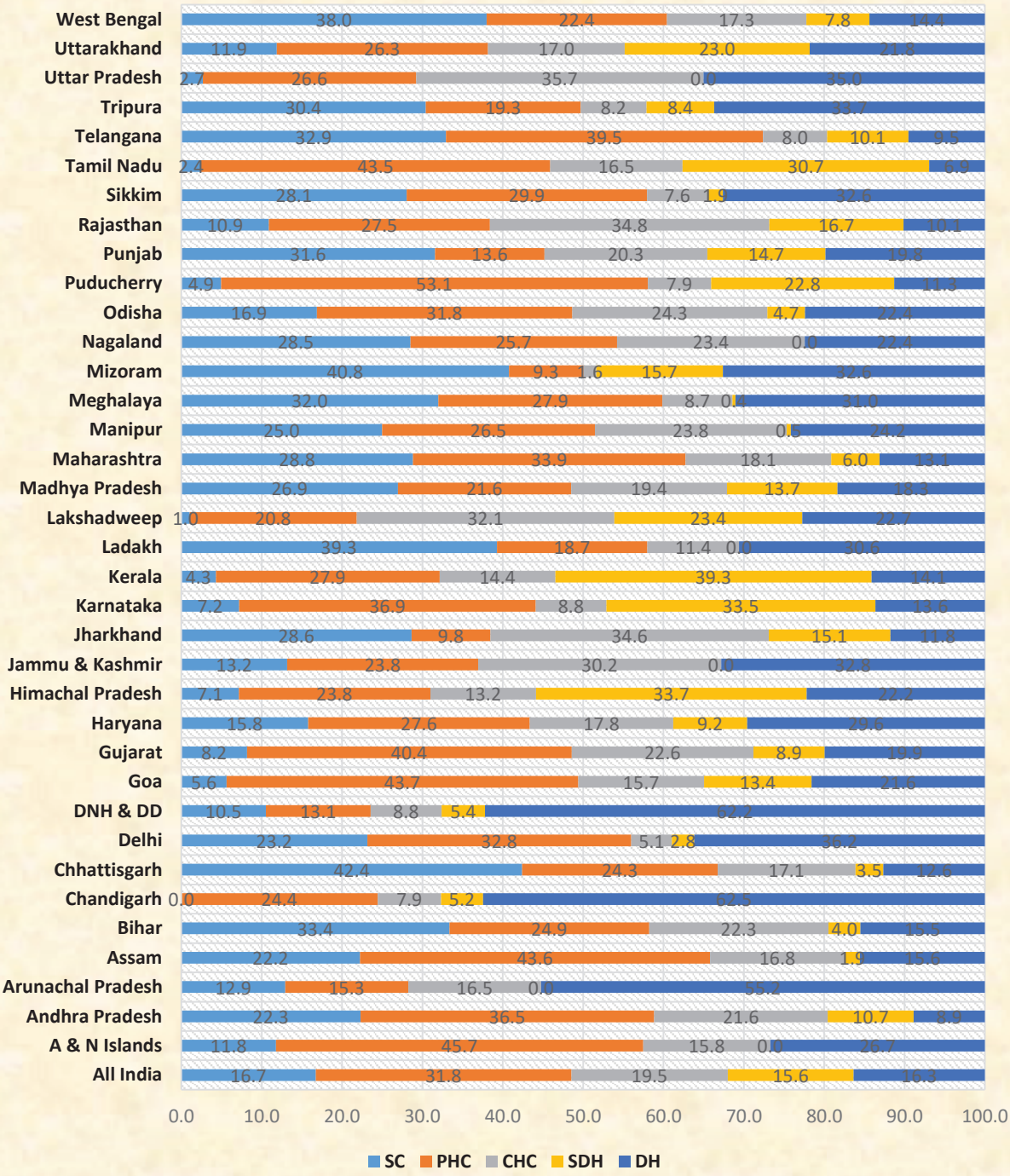


Figure 9.1b Percenatge of OPD Catered as per facility type (2021-22)



Top 5 States/ UTs contributing to the highest percentage of OPD to Total OPD- facility wise in FY 2020-21 and 2021-22 (Table 9.1 & Table 9.2):

Table 9.1

S No.	SC	PHC	CHC	SDH	DH
	2020-21	2020-21	2020-21	2021-22	2021-22
1	Ladakh (42%)	Puducherry (60%)	Rajasthan (33.8%)	Kerala (37.9%)	DNH & DD (55.7%)
2	Jharkhand (42%)	Assam (48.7%)	Uttar Pradesh (32.9%)	Karnataka (34%)	Chandigarh (50.9%)
3	Bihar (39%)	A & N Islands (46.7%)	Lakshadweep (32.8%)	Himachal Pradesh (32.2%)	Arunachal Pradesh (50.4%)
4	Chhattisgarh (38.5%)	Goa (45.4%)	Jammu and Kashmir (31.2%)	Tamil Nadu (28.5%)	Mizoram (44.0%)
5	Tripura (31.8%)	Tamil Nadu (44.7%)	Nagaland (30.8%)	Lakshadweep (27.1%)	Uttar Pradesh (34%)

Table 9.2

S No.	SC	PHC	CHC	SDH	DH
	2021-22	2021-22	2021-22	2021-22	2021-22
1	Chhattisgarh (42.4%)	Puducherry (53.1%)	Uttar Pradesh (35.7%)	Kerala (39.3%)	Chandigarh (62.5%)
2	Mizoram (40.8%)	A & N Islands (45.7%)	Rajasthan (34.8%)	Himachal Pradesh (33.7%)	DNH & DD (62.2%)
3	Ladakh (39.3%)	Tamil Nadu (43.7%)	Jharkhand (34.6%)	Karnataka (33.5%)	Arunachal Pradesh (55.2%)
4	West Bengal (38%)	Goa (43.6%)	Lakshadweep (32.1%)	Tamil Nadu (30.7%)	Delhi (36.2%)
5	Bihar (33.4%)	Assam (43.5%)	Jammu & Kashmir (30.2%)	Lakshadweep (23.4%)	Uttar Pradesh (35%)

9.2 OPD Services per Doctor per year at Public Health Facilities (excluding medical college)

HMIS data for the OPD cases (Allopathic + AYUSH) and the number of doctors reported against the health facilities for the year 2020-21 and 2021-22 has been analyzed at each facility level to get the inference about the number of OPD cases catered by per doctor per year. The State/ UT-wise number of OPD cases per doctor per year at PHCs, CHCs, SDH & DHs for the year 2020-21 and 2021-22 is represented under **Annexure 9.1**

9.2 a. Primary Health Centres (PHCs): PHC is the first physical point of contact between Patient and the Doctor, therefore OPD services play important role towards the preliminary diagnosis as well the further referral to the higher level of health facilities, wherever required.

9.2 b. Community Health Centres (CHCs): CHCs caters to essential services including preventive, promotive, curative, palliative, rehabilitative services along with the mandate to provide specialized care which is offered through specialists (physicians, surgeons, obstetricians, pediatricians, and anesthesiologists etc.).

9.2 c. Sub District/ Divisional Hospital (SDH): SDH have a mandate to provide secondary care services and acts as Referral Units for the Tehsil/Taluk/Block population in which they are geographically located and SDHs are below the district and above the block level (CHC) hospitals. SDHs form an important link between SCs, PHCs and CHCs on one end and District Hospitals on the other end. They also save travel time for cases needing emergency care and reduce the workload of the district hospitals.

States/ UTs like A & N Islands, Arunachal Pradesh, Jammu & Kashmir, Ladakh, Nagaland and Uttar Pradesh have no serving SDHs. For Meghalaya there was no facility mapped under SDH during 2020-21, whereas during 2021-22 there are two facilities mapped as SDH. Also, one SDH under Manipur has not reported any OPDs during 2020-21.

9.2 d. District Hospital (DH):

As per the defined guidelines every DH should comprehensively function for providing secondary care services along with the critical care services like Emergency, High Dependency Unit (HDU)/Intensive Care Unit (ICU), Operation Theatre (OT), Labour Delivery, Special Newborn Care Unit (SNCU), lab and diagnostic services etc. District Hospital has specialist OPD services in order to cater for the specific need of the population for the respective district.

9.2 e. State/ UT wise analysis at PHC, CHC, SDH and DH level for the year 2020-21 and 2021-22 are as follows:

Year	Average OPD at All India level				Range of OPD cases per doctor per year across the States/ UTs				No. of States/ UTs with lesser OPD than the National average				No. of States/ UTs with more OPD than the National average			
	PHC	CHC	SDH	DH	PHC	CHC	SDH	DH	PHC	CHC	SDH	DH	PHC	CHC	SDH	DH
2020-21	8765	7112	6913	4584	716 – 21537	502 – 17178	145 – 11749	516 – 28410	23	24	20	24	13	12	8	12
2021-22	9973	8474	9176	5832	723 – 27170	603 – 23431	319 – 21221	897 – 10462	24	24	21	28	12	12	7	8

9.2 f. Top five States catering to the maximum OPD per doctor per year for each level of public health facilities during 2020-21 and 2021-22:

For the year 2020-21, Tamil Nadu has contributed in all four categories, Kerala and Rajasthan have contributed in three categories, whereas Madhya Pradesh and Puducherry have contributed in two categories of health facilities among the top performer States with respect to OPD cases per doctor per year. Whereas for the year 2021-22, Tamil Nadu and Kerala contributed in all four categories and Rajasthan & Puducherry contributed in three & two categories respectively.

The States/ UTs highlighted in specific colors representing in particular health facility category may be referred in Table 9.3 (2020-21) and Table 9.4 (2021-22).

Table 9.3

Primary Health Centre	Community Health Centre	Sub District Hospital	District Hospital
Tamil Nadu	Kerala	Tamil Nadu	A & N Islands
Puducherry	Puducherry	Kerala	Tamil Nadu
Telangana	Rajasthan	Karnataka	Haryana
Kerala	Tamil Nadu	Rajasthan	Rajasthan
West Bengal	Madhya Pradesh	Madhya Pradesh	Uttar Pradesh

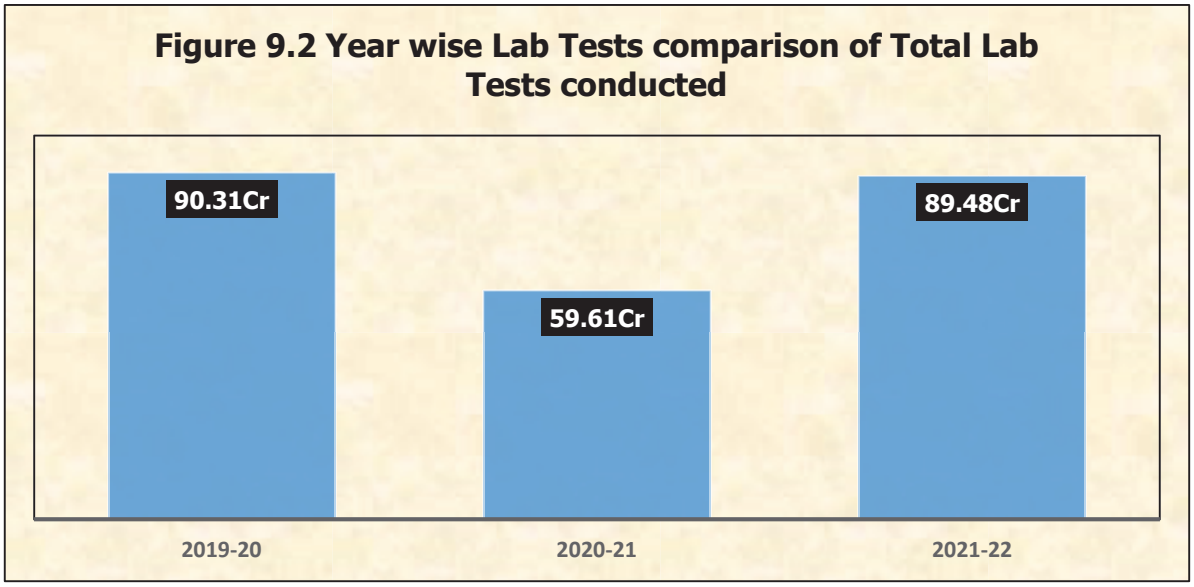
Table 9.4

Primary Health Centre	Community Health Centre	Sub District Hospital	District Hospital
Tamil Nadu	Kerala	Tamil Nadu	Tamil Nadu
Puducherry	Puducherry	Kerala	Uttar Pradesh
Kerala	Andhra Pradesh	Rajasthan	Kerala
Delhi	Rajasthan	Madhya Pradesh	Rajasthan
Telangana	Tamil Nadu	Karnataka	Haryana

9.3 LAB TESTS

Lab Investigations plays important role in the healthcare system which help the service providers to make decisions about care provision related to the prevention, screening, detection, diagnosis and treatment or management of the illness at primary, secondary and tertiary level of health facilities. The facility of the Lab investigations is available from the level of PHCs to DHs, as the functional Laboratory is available along with the required HR and Infrastructure. However, at the level of SC few lab tests are available which does not require an equipped lab and can be performed by HW (F) or HW (M). The facilities for certain important lab tests is available round the clock in the SDH & DH which provides the emergency services.

Under HMIS the various Lab investigations like Hb tests conducted, HIV Tests for male and female (ANC & non-ANC), STI/RTI attendees tested for syphilis, Widal tests, X-ray, USG etc. are being captured depending upon the level of the health facility. The comparison of total Lab Tests conducted during 2019-20, 2020-21 and 2021-22 may be seen in **Figure 9.2**, which clearly gives inference that the decrease in number of lab tests during the year 2020-21 is due to the covid-19 pandemic.



The current analysis has been done based on the number of Lab tests done during the year 2020-21 and 2021-22. It is noted that during the year 2020-21 at National Level PHCs, CHCs, SDHs & DHs caters to total Lab Tests of 13.5%, 15.3%, 26.5% and 44.7% respectively, whereas almost the same trends have been observed for the year 2021-22 as 12.3%, 15%, 27.7% and 45% of Lab Tests respectively. At the PHC level there is the decline of 1.2% in Lab Tests, whereas at SDH there is 1.2% increase in the year 2021-22 w.r.t 2020-21. The State/ UT wise Lab tests done by each facility type during the years 2020-21 and 2021-22 are represented under **Figure 9.2a & Figure 9.2b** respectively.

Figure 9.2a Pecentage Of Lab Tests Conducted As Per Facility Type(2020-21)

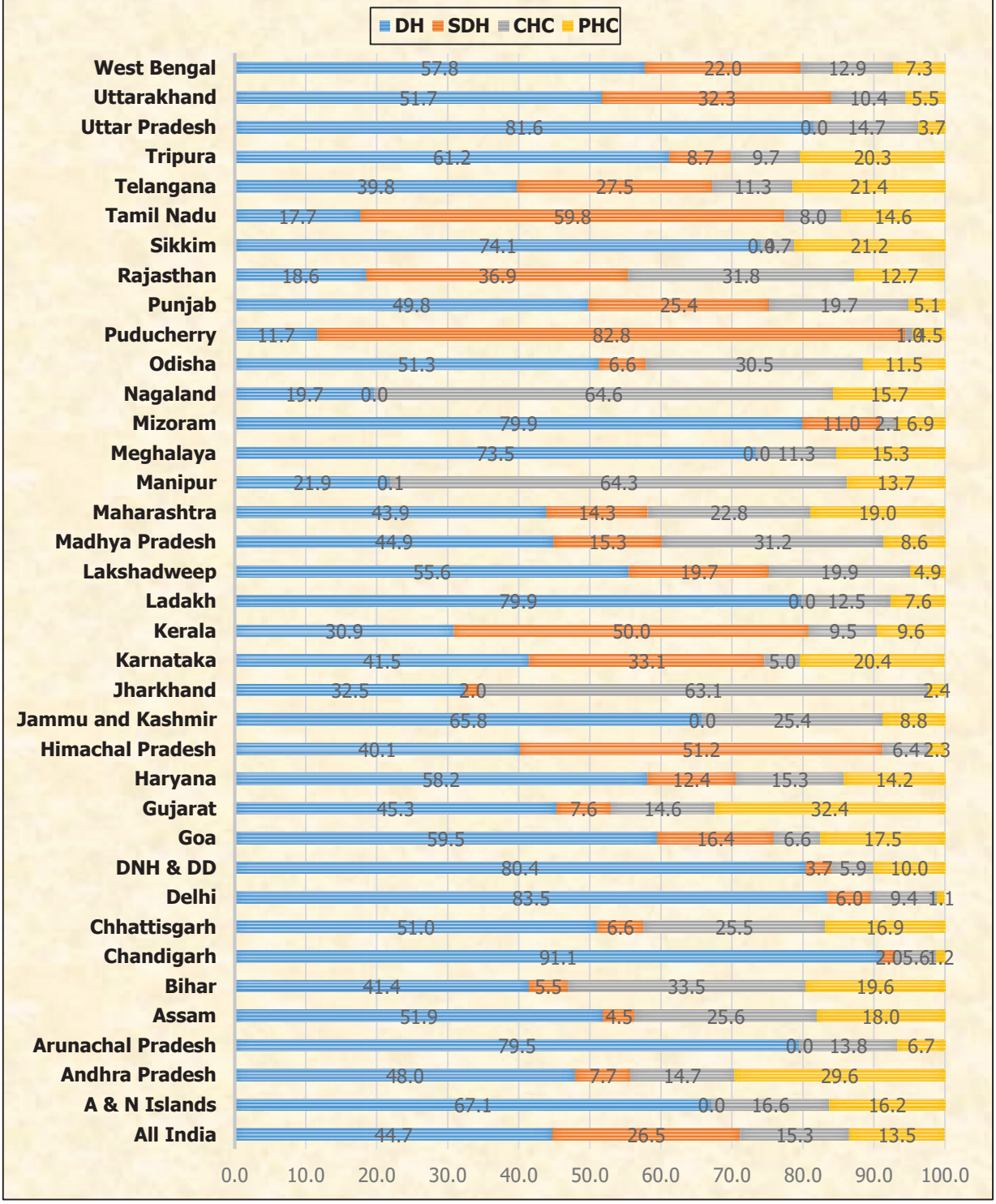
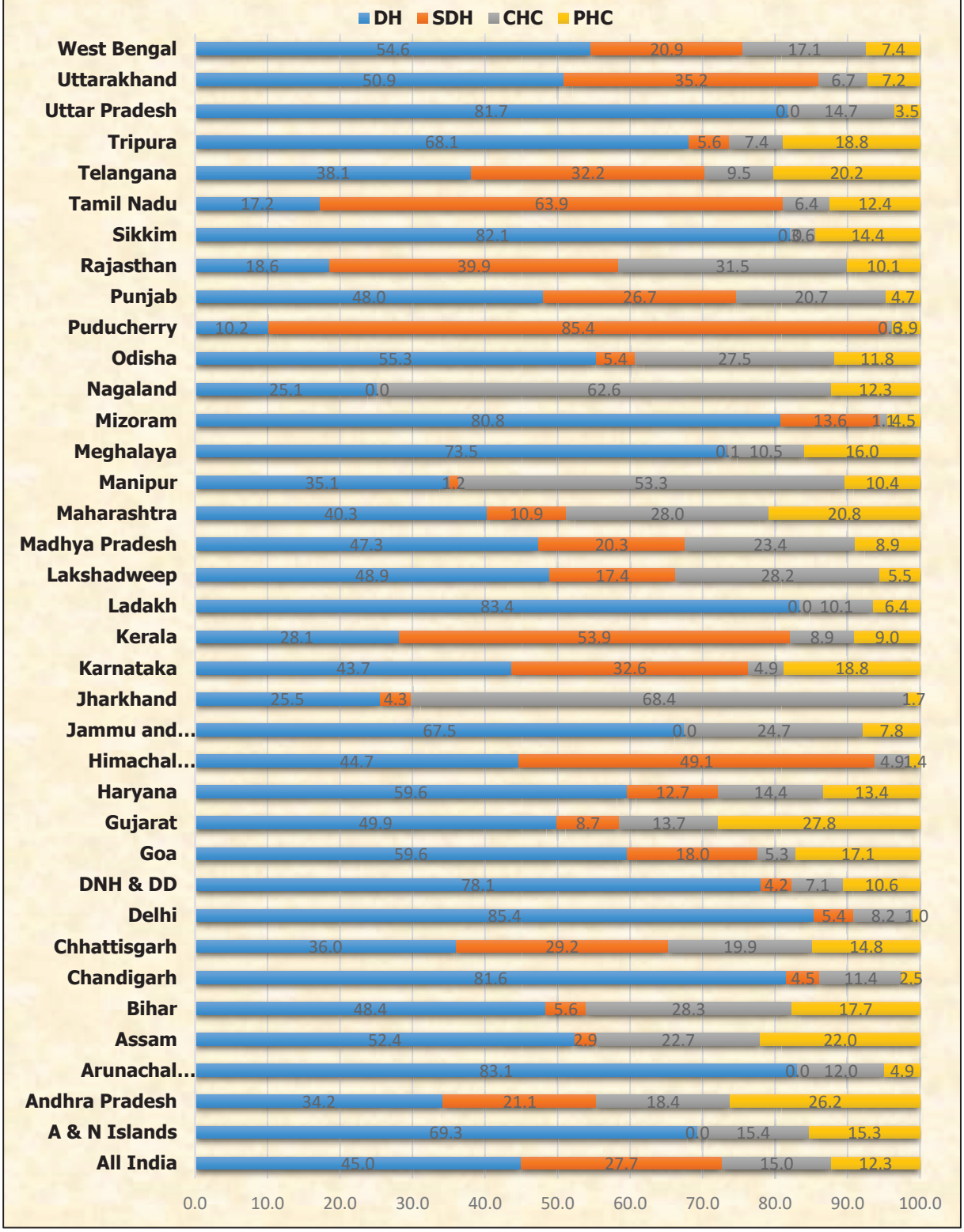


Figure 9.2 b Pecentage Of Lab Tests Conducted As Per Facility Type (2021-22)



Top 5 States/ UTs contributing to the highest percentage of Lab Tests to Total Lab Tests performed - facility wise in FY 2020-21 (Table 9.5) and 2021-22 (Table 9.6):

Table 9.5:

S No.	PHC	CHC	SDH	DH
	2020-21	2020-21	2021-22	2021-22
1	Gujarat (32.4%)	Nagaland (64.6%)	Puducherry (82.8%)	Chandigarh (91.1%)
2	Andhra Pradesh (29.6%)	Manipur (64.3%)	Tamil Nadu (59.8%)	Delhi (83.5%)
3	Telangana (21.4%)	Jharkhand (63.1%)	Himachal Pradesh (51.2%)	Uttar Pradesh (81.6%)
4	Sikkim (21.2%)	Bihar (33.5%)	Kerala (50%)	DNH & DD (80.4%)
5	Karnataka (20.4%)	Rajasthan (31.8%)	Rajasthan (36.9%)	Mizoram (79.9%)

Table 9.6:

S No.	PHC	CHC	SDH	DH
	2021-22	2021-22	2021-22	2021-22
1	Gujarat (27.8%)	Jharkhand (68.4%)	Puducherry (85.4%)	Delhi (85.4%)
2	Andhra Pradesh (26.2%)	Nagaland (62.6%)	Tamil Nadu (63.9%)	Ladakh (83.4%)
3	Assam (22%)	Manipur (53.3%)	Kerala (53.9%)	Arunachal Pradesh (83.1%)
4	Maharashtra (20.8%)	Rajasthan (31.5%)	Himachal Pradesh (49.1%)	Sikkim (82.1%)
5	Telangana (20.2%)	Bihar (28.3%)	Rajasthan (39.9%)	Uttar Pradesh (81.7%)

9.4 Lab Tests per Lab Technician at Public Health Facilities (excluding medical college)

HMIS data for 2020-21 and 2021-22 have been analyzed for the lab tests performed at each facility level to get the inference about the number of Lab tests catered by per Lab Technician (LT) per year.

State/ UT-wise analysis at PHC, CHC, SDH and DH levels for the year 2020-21 and 2021-22 are as follows:

Year	Average Lab Tests at All India level				Range of Lab Tests per LT per year across the States/ UTs				No. of States/ UTs with lesser Lab Tests than the National average				No. of States/ UTs with more Lab Tests than the National average			
	PHC	CHC	SDH	DH	PHC	CHC	SDH	DH	PHC	CHC	SDH	DH	PHC	CHC	SDH	DH
2020-21	4401	443	28009	27921	304 – 10982	443 – 42753	1104 – 80471	1255 – 94878	24	24	20	26	12	12	8	10
2021-22	5876	12743	37645	40602	286 - 13702	577 - 76887	703 - 98294	1519 - 118309	24	24	20	26	12	12	8	10

9.5 Top five States catering to the maximum Lab Tests per Lab Technician per year at a different level of public health facilities during 2020-21 and 2021-22:

For the year 2020-21, Tamil Nadu, Gujarat & Delhi has contributed in three categories, whereas Kerala, Chandigarh & Telangana has contributed in two categories of health facilities among the top performer States with respect to Lab Tests per Lab Technician per year. For the year 2021-22, Tamil Nadu, Gujarat & Delhi has contributed in three categories, whereas Rajasthan & Chandigarh has contributed in two categories respectively.

The States/ UTs highlighted in specific colors representing in particular health facility category may be referred in Table 9.7 (2020-21) and Table 9.8 (2021-22).

Table 9.7

Primary Health Centre	Community Health Centre	Sub District Hospital	District Hospital
Tamil Nadu	Chandigarh	Delhi	Tamil Nadu
Gujarat	A & N Islands	Tamil Nadu	Gujarat
Kerala	Delhi	Telangana	Delhi
Chandigarh	Telangana	Gujarat	Uttar Pradesh
Haryana	Rajasthan	Kerala	Karnataka

Table 9.8

Primary Health Centre	Community Health Centre	Sub District Hospital	District Hospital
Tamil Nadu	A & N Islands	Tamil Nadu	Tamil Nadu
Chandigarh	Chandigarh	Delhi	Delhi
Gujarat	Delhi	Telangana	Uttar Pradesh
Kerala	Maharashtra	Gujarat	Goa
Haryana	Rajasthan	Rajasthan	Gujarat

Annexure 9.1
State/ UT wise OPD cases per doctor per year at PHC, CHC, SDH & DH (excluding medical colleges) (public)

States / UTs	PHC		CHC		SDH		DH	
	2020-21	2021-22	2020-21	2021-22	2020-21	2021-22	2020-21	2021-22
All India	8765	9973	s7112	8474	6913	9176	4584	5832
Andaman & Nicobar	10812	12106	7082	10166	N App	N App	28410	5731
Andhra Pradesh	8914	12255	8880	13462	6844	2695	4906	5621
Arunachal Pradesh	998	1137	1163	1255	N App	N App	1067	1111
Assam	3228	3066	3103	3155	2385	2687	2583	3096
Bihar	3754	4539	6172	7785	2984	3585	4233	4518
Chandigarh	10638	11458	4827	8037	5049	7169	2275	5409
Chhattisgarh	6697	7272	3609	3730	4899	6179	2604	2909
Delhi	13773	17169	6248	7858	3627	4371	3714	3927
Goa	3979	4378	3813	4345	1844	3439	2177	2779
Gujarat	7094	7420	8628	9913	7280	9725	4648	5823
Haryana	9603	9512	6571	6978	5631	6519	7058	7830
Himachal Pradesh	4855	4985	4281	4843	3919	4624	3498	4117
Jammu and Kashmir	2819	3380	5518	6186	N App	N App	4937	6252
Jharkhand	3811	4400	1980	2928	2046	3716	2861	5100
Karnataka	11144	11189	9585	10336	8634	9956	4688	5574
Kerala	14438	17483	17178	23431	11471	18075	5198	9560
Ladakh	1693	1361	1506	1456	N App	N App	1536	2133
Lakshadweep	4883	5197	5350	4623	4959	7305	3315	2840
Madhya Pradesh	6132	6865	9720	10031	7499	14555	4302	5372
Maharashtra	6236	5901	4511	5813	3734	4451	2521	3265
Manipur	716	723	502	603	N App	319	516	897
Meghalaya	4123	3103	2826	1748	N App	627	887	1105
Mizoram	2497	2062	2337	1255	1293	983	2846	2249
Nagaland	1343	2139	878	800	N App	N App	605	898
Odisha	9841	10368	7095	6876	7393	8123	5665	6682
Puducherry	18615	20157	14487	17227	N App	N App	1639	3197
Punjab	4584	4198	4797	4844	4764	5149	5252	5486
Rajasthan	9998	10619	12573	13138	7602	16684	6844	7950
Sikkim	5136	4291	7574	9774	145	N App	1639	1488
Tamil Nadu	21537	27170	10804	12632	11749	21221	8092	10462
Telangana	14935	16283	9093	9103	*6450*	9649	3671	4037
Dadra and Nagar Haveli and Daman and Diu	6286	7606	8969	8059	7111	8667	2286	7592
Tripura	1878	1983	2676	2453	2040	2719	2828	3524
Uttarakhand	3437	3175	3261	3044	3099	5923	3818	4523
Uttar Pradesh	4698	6158	5228	7116	N App	N App	6550	9980
West Bengal	13930	15392	8636	9644	3119	3835	4413	4849

N App: Not Applicable

Annexure 9.2

State/ UT wise Lab tests cases per Lab Technician per year at PHC, CHC, SDH & DH (excluding medical colleges) (public).

States / UTs	PHC		CHC		SDH		DH	
	2020-21	2021-22	2020-21	2021-22	2020-21	2021-22	2020-21	2021-22
All India	4401	5876	9155	12743	28009	37645	27921	40602
Andaman & Nicobar Islands	4722	7962	24918	76887	N App	N App	8327	11029
Andhra Pradesh	4876	7504	13219	20392	36850	38374	21216	39029
Arunachal Pradesh	304	286	443	613	N App	N App	1255	1519
Assam	1441	1917	4288	5922	8270	7557	13544	23512
Bihar	1745	3126	5721	9092	10105	7069	10075	12380
Chandigarh	7650	10368	42753	71677	13233	28427	28713	48956
Chhattisgarh	1896	3307	3306	4505	6541	12740	12330	20135
Delhi	1001	1613	22921	29313	80471	89568	67206	79100
Goa	5736	8752	5811	8010	21072	39977	28954	72752
Gujarat	8399	9956	15908	19931	42547	62780	68271	57635
Haryana	7012	9254	9133	12009	28318	37262	25468	31959
Himachal Pradesh	1880	1946	4770	5808	19353	28769	13286	22214
Jammu and Kashmir	1666	2527	6299	9595	N App	N App	10309	23730
Jharkhand	475	709	3033	4395	3020	5275	13612	17599
Karnataka	4829	6102	6809	9039	14248	20000	32741	43482
Kerala	7772	9267	16245	20826	38322	54672	26152	39841
Ladakh	751	927	1970	2192	N App	N App	8536	15451
Lakshadweep	2545	1962	5163	6012	7296	12349	16038	17350
Madhya Pradesh	3565	4637	9207	10055	13696	18306	20573	30306
Maharashtra	3436	5134	12952	22820	22725	28288	31168	47001
Manipur	881	1387	975	3063	N App	3318	6462	12487
Meghalaya	1888	2005	3876	3981	N App	703	10404	13181
Mizoram	1413	1391	1947	1246	1104	1595	17377	16476
Nagaland	644	618	533	577	N App	N App	1268	2492
Odisha	5858	7714	9154	11814	11827	13618	14401	28056
Puducherry	5247	6637	6084	5151	N App	N App	17483	22408
Punjab	2563	2877	10549	13082	21095	27784	31081	37944
Rajasthan	3763	4309	16901	22635	33158	55147	29149	30971
Sikkim	1443	1174	1544	1490	N App	N App	5201	7043
Tamil Nadu	10982	13702	14908	16720	76914	98294	94878	118309
Telangana	4037	5302	19946	18415	49578	69429	26940	32724
The Dadra and Nagar Haveli and Daman and Diu	5023	8175	7759	13066	6561	10339	8090	12064
Tripura	2286	4099	3999	4882	2802	3252	3130	3583
Uttarakhand	1519	4182	3288	3776	17701	29019	16575	23352
Uttar Pradesh	1068	1877	5349	8663	N App	N App	43590	74651
West Bengal	3331	5599	4802	9407	13466	16013	12668	24820

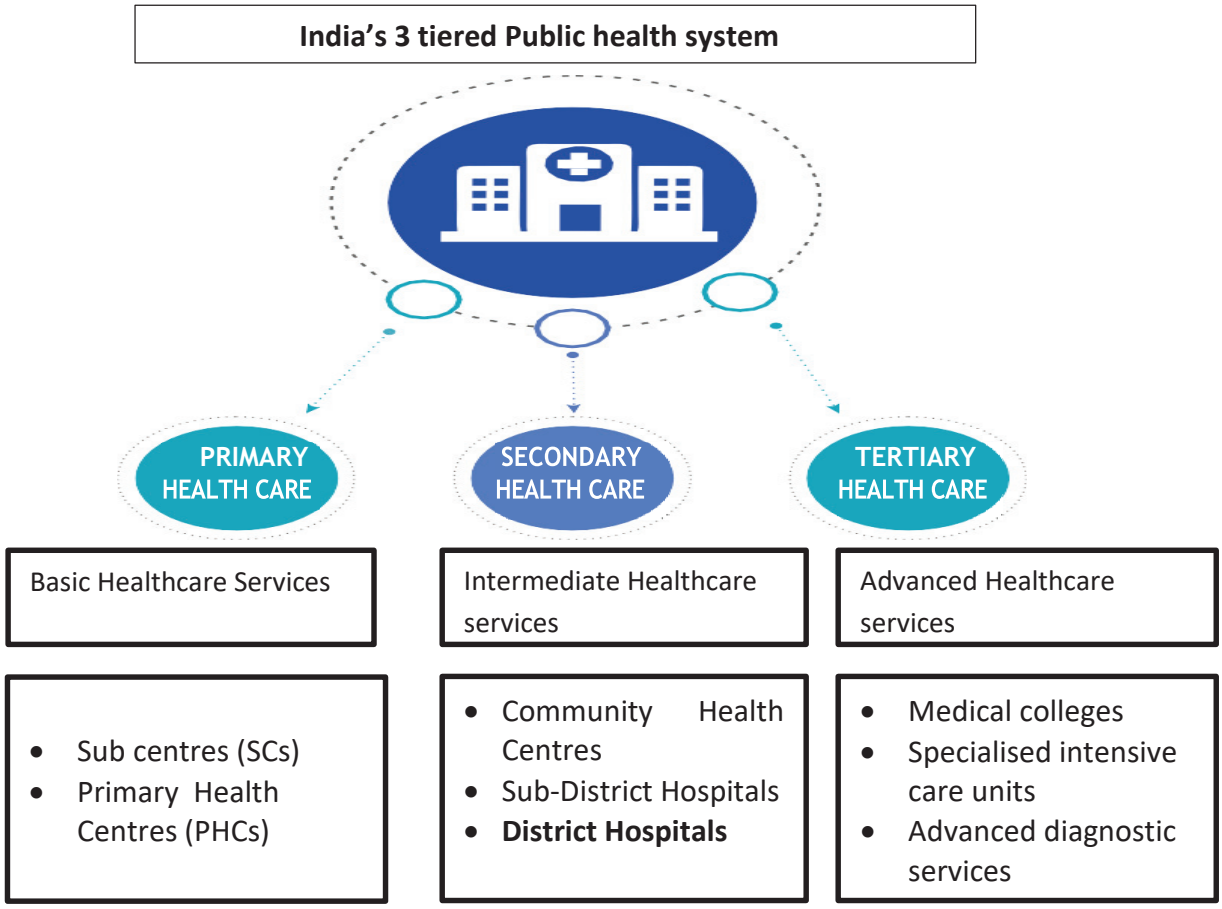
N App- Not Available

CHAPTER -10

AN ANALYSIS OF HMIS DATA ON DISTRICT HOSPITALS

Background

The delivery of services through the public health sector in India follows a three tier structure of primary, secondary, and tertiary care services which covers both rural and urban areas of the country. Health system inputs (infrastructure, health workers, drugs, equipment, health information system and finances) are combined to provide quality health services that are equitable, accessible, affordable and responsive to the needs of the population.



District Hospitals come under the secondary health care services which are responsible for providing comprehensive health care services in a defined geographical area containing a defined population. The facility should provide a set of Essential (Minimum Assured Services) and Desirable services such as New-born services, Pshycharitic services, Physical Medicine and Rehabilitation services, Accident and Trauma services, Dialysis services, Anti-retroviral therapy and Patient Safety and Infection control.

The services of District hospital have three pillars: clinical care, a knowledge hub for

capacity development of HR in health and public health programme to ensure the continuum of care and reduce the disease burden.

- Clinical Care: includes curative, palliative and rehabilitative services along with services for implementation of national programmes, provision of drugs, administrative services and other support services. The services to be provided at different facilities are identified as 'Essential' and 'Desirable'.
    - Essential services -includes those '*minimum assured services'* that every facility at that level must provide.
    - Desirable services are those that a facility should aspire to ultimately achieve (if not already being provided) over a period of time in a phased manner.
- Knowledge hub: providing services like medical courses including Diplomate of National Board, nursing schools, ANM training and a resource centre equipped with computers, information resources and telemedicine capability.
- Continuum of Care: To ensure continuum of care, assured referral with facility readiness to manage referred cases must be established.

Key elements of district hospitals:

1. Affordability-Provide effective, affordable health care services (curative including specialist services, preventive, and promotive) for a defined population
2. Accessibility- At least one district hospital for every district providing advanced secondary care and certain critical care services like emergency, High dependency unit (HDU), special New-born care unit (SNCU), lab and imaging services, etc. need to be prioritised.
3. Extensive coverage- Service coverage encompassing both urban (district headquarter town) and the rural population in the district.
4. Broad scope- Provide wide-ranging technical and administrative support and education and training for primary health care.

Importance of District Hospitals:

When any patient reaches any nearby district hospital, they expect the following services from the District hospitals

OPD	Pharmacy	Diagnostics	IPD	Surgery	Intensive Care
• They expect a doctor in the required medical specialty in the outpatient department (OPD) to diagnose and treat their health disorder and prescribe tests and medicines,	• The medicines prescribed by the doctor can then be obtained at the pharmacy in the hospital.	• If the doctor orders diagnostic tests, the patient can get them done at a laboratory by a technician at that particular point of care.	• If the doctor recommends admission, the patient can get a bed at the hospital..	• If a higher-level medical intervention, such as surgery, is suggested, the patient can be operated upon within a reasonable period of time.	• During the patient's stay at the hospital, they are cared by the on-duty nurses. After the surgery, the patient should recover without any infection

The unavailability and inaccessibility of these health care services at public hospitals adversely impact the health outcomes and overall reputation of public hospitals in the country. So, it is important to conduct preliminary evaluation for the performance of all district hospitals at a regular interval of time in order to improve the health care delivery system. Undertaking such an exercise at a regular time period will help foster a sense of healthy competition between the individual district hospitals and provide them an opportunity to showcase progress against relevant indicators.

For monitoring the progress of health facility, Government of India has developed a web based portal named Health Management Information System (HMIS) which captures facility wise data related to service delivery and infrastructure. In service delivery Reproductive, Maternal and Child Health related, Immunisation family planning, Vector borne disease, Tuberculosis, Morbidity and Mortality, OPD, IPD Services, Surgeries etc. data are captured on monthly basis whereas in infrastructure, Manpower, Equipment, Cleanliness, Building, Availability of Medical Services such as Surgery, Super Specialties services, Diagnostics, Para Medical and Clinical Services data are captured on annual basis.

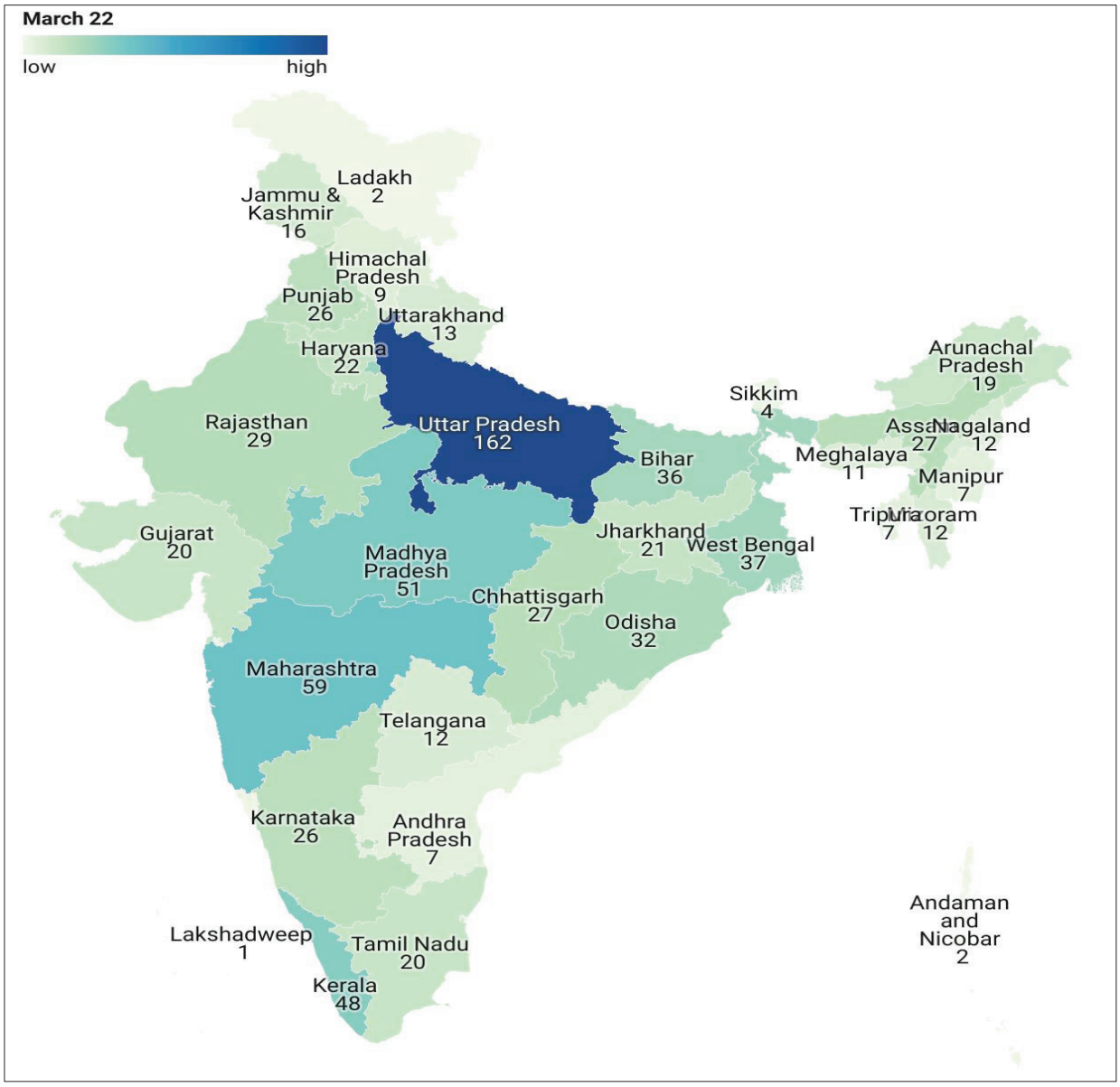
In this chapter, a comparative analysis of few indicators of government district hospital (except Medical colleges) has been done for two consecutive financial years 2020-21 and 2021-22. The indicators are: Average functional bed occupancy rate, Bed occupancy rate, C-section rate, Rate of initiation of breastfeeding, Blood replacement rate and Post- surgical site infection. The data reported on the HMIS portal was taken as a source of comparative analysis, and the data of district hospital in the financial year 2020-21 was taken as a base to compare the states performance with 2021-22 performance. In this analysis, medical colleges are excluded in the list of district hospitals.

The details of Districts Hospitals are shown below:

I. Number of district hospitals in the country

In the financial year 2020-21, there were overall 818 (excluding medical colleges) district hospitals in the country, which rose to 827 (excluding medical colleges) in the financial year 2021-22. The below map represents the number of district hospitals present in the each state of the country in the financial year 2021-22.

Figure 10.1 Number of District hospitals as on 31st March 22



II. Distribution of District hospitals based on the bed strength

National Health Policy, 2017 recommends two beds per 1000 population. It is therefore proposed that the provision of one bed per 1000 population is an 'Essential' norm for every district while two beds per 1000 is a target they should aspire towards 'Desirable'.

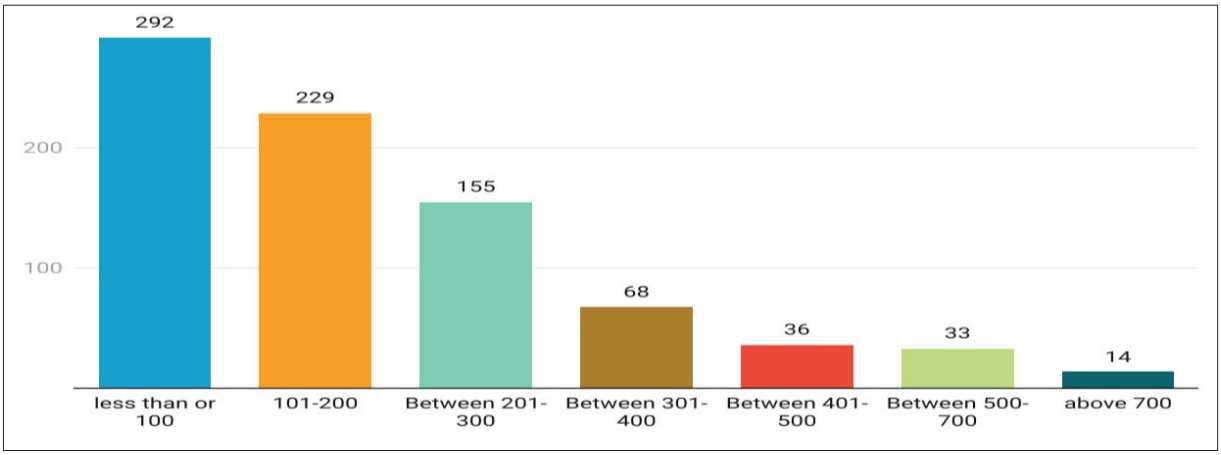
The 'Essential' number of beds in a district should be provided through the public health system of tertiary care (Medical Colleges), secondary care (DH, SDH and selected CHCs) and primary care (PHCs and remaining CHCs). 'Desirable' number of beds, the contribution of the private sector (based on the access to private health care in the local area), Railways, Armed Forces, Power Grid, Coal fields, Employees' State Insurance (ESI) and other Public Sector Undertaking (PSU) hospitals may also

be considered while continuing to strengthen and increase bed provision at public health facilities.

In 2022, Indian Public Health standards have developed guidelines to strengthen the essential and desirable beds based on the size of population serve by the district hospitals. These guidelines are helpful as it provides a systematic basis for identifying resources required at the DH according to the size of the facility. Depending upon the bed occupancy and local health needs, states can propose more beds to achieve IPHS norms. The norms for bed strength are as follows:

Population	Essential beds	Desirable beds
Less than 2 lakh	50 beds+15 additional (Emergency and day care beds)	100
Between2-5lakh	100 beds+25 additional (Emergency and day care beds)	200
Between5-10 lakh	200 beds+38 additional (Emergency and day care beds)	300
Between10-20 lakh	300 beds+49 additional (Emergency and day care beds)	400
Between20-30 lakh	400 beds+ 60 additional (Emergency and day care beds)	500
Morethan30 lakhs	500 beds+55 additional (Emergency and day care beds)	600

Figure 10.2 Distribution of District hospital as per availability of beds (as on 31st March 22)



As per data reported on HMIS in the financial year 2021-22, it can be seen that the number of district hospital having bed strength 100 or less than 100 is 292 at all India level .The number of district hospitals are decreasing with raising number of

bed strength. There are merely 14 district hospitals at all over country having bed strength above 700.

1. **Availability of functional beds in District Hospitals:**

A hospital bed constitutes the primary unit of any hospital infrastructure. The number of functional hospital beds is of fundamental importance to both the patients and staff. This indicator is largely under the control of the state. It refers to hospital beds which are regularly maintained and staffed and immediately available for the care of admitted patients.

This indicator is calculated by dividing the total number of functional beds present in district hospital in a month by the total number of District hospital in the area.

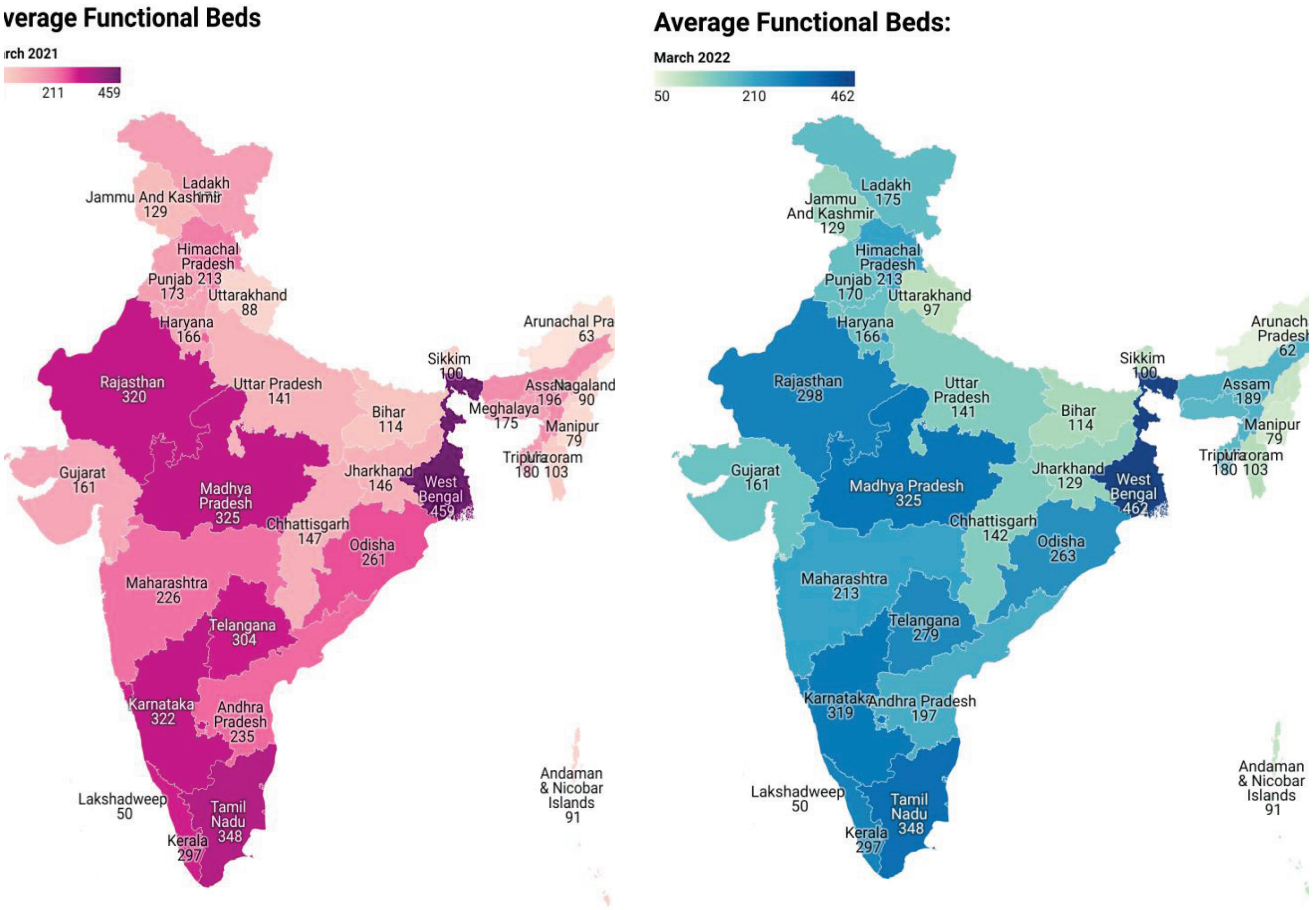
$$\text{Average functional bed availability} = \frac{\text{Total number of functional beds in District hospitals in a month}}{\text{Number of District hospitals}}$$

Significance

- A shortage of available beds can seriously impact functionality of a hospital as it is the primary cause of denial of admission, surgery cancellations, and delays in emergency admissions. Conversely, excess bed capacity may lead to additional costs and stagnant capital.
- Identifying resource allocation, such as requirement of staff, support services, diagnostic testing facilities.

Figure 10.3 shows that average bed availability in the most of the states remains same in both the financial years (2020-21 and 2021-22) except some few states. In the financial 2020-21, average bed availability in Rajasthan and Karnataka was 320 & 322 which decline to 298 and 319 in the financial year 2021-22. Similar decline in the number of average functional availability bed can be seen in Maharashtra, Andhra Pradesh, Chhattisgarh, Telangana, Jharkhand, and Punjab. Moreover, the average bed availability in Madhya Pradesh, Lakshadweep, Tamil Nadu, Haryana, Tripura and Mizoram remains same in both of these financial years.

Figure 10.3 State/UT wise average availability of functional beds in Government District Hospitals during 31st March 2021 and 31st March 2022



2. **Bed Occupancy Rate:**

Bed occupancy rate helps in determining the efficiency of a district hospital. It reflects efficiency in the use of hospital beds.

The bed occupancy rate is calculated by dividing the total number of inpatients headcounts at midnight added for a year by the number of functional beds available in the District hospital multiplied by 365 days. The ratio is multiplied by 100 to express the figure in percentage. The bed occupancy rate shows the effective utilization of available beds in a hospital.

$$\text{Bed Occupancy Rate} = \frac{\text{Total number of inpatients headcount at midnight added for a year} \times 100}{\text{Total functional beds in District Hospital} \times 365}$$

An optimal bed occupancy rate is between 80 and 85 percent, at which point a facility will run most effectively. According to IPHS recommendations from 2012, district hospitals should have 80% of their beds occupied.

Significance

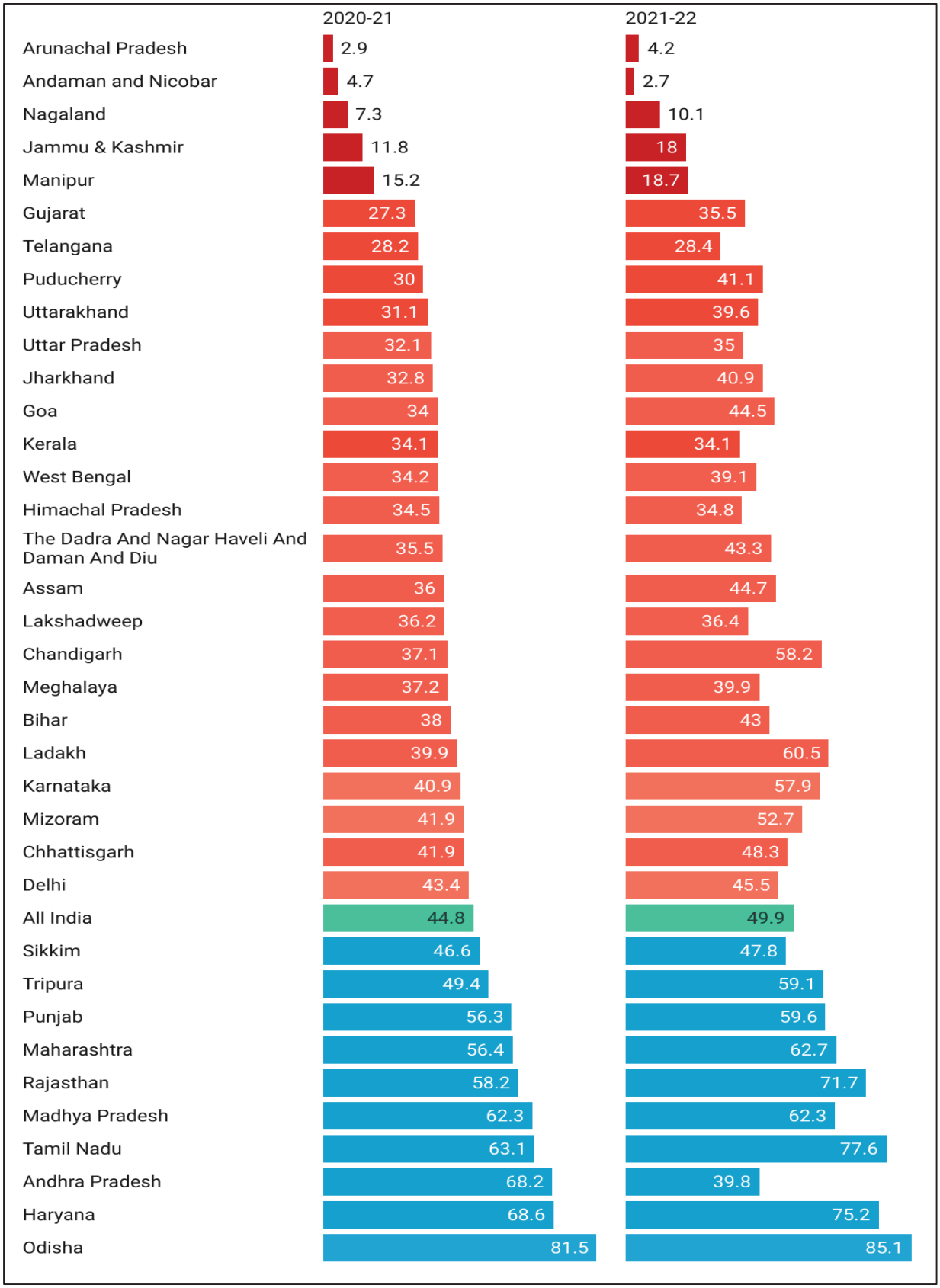
The bed occupancy rate aids in identifying facilities with the best resource utilization rates from the perspective of public health planning as high bed occupancy rate reflects the good quality of services, infrastructure, trained staff, patient care and satisfaction provided by the facility whereas low bed occupancy rates (<42%) at primary health care level indicated lack of medically trained personnel, sporadic supply of drugs and other medical supplies and a complete breakdown in the transfer and referral system.

- Hospitals cannot operate at 100% occupancy, as spare bed capacity is needed to accommodate variations in demand. Lack of available beds increase delays in emergency departments, cause patients to be placed on clinically inappropriate wards and increase the rate of hospital-acquired infections. This also puts staff under pressure to free up beds that can pose a risk to patient safety.
- Utilizing the indicator, hospitals can evaluate their performance and identify opportunities for development. The reasons for the respective level of utilization can be identified and future decisions can be made based upon this.
- This indicator can be further used for comparison among facilities at the state/region/national level and help to find out their efficiency.

The below **figure no 10.4** shows the bar graph which compares the bed occupancy rates of all states in the financial year 2020-21 and 2021-22. The red highlighted bars represent the states having bed occupancy rate less than the national average (which is highlighted in green colour) whereas blue colour horizontal bars represent the states having bed occupancy rate higher than the national average.

The given chart shows that there are overall 26 states which has bed occupancy rate lower than the national average. It can be clearly seen that, in the both the financial years, Arunachal Pradesh and Andaman and Nicobar Island have lowest bed occupancy rate whereas Odisha has highest bed occupancy rate in both these financial years (2020-21 & 2021-22).

Figure 10.4 State/UTs wise comparison of average bed occupancy rate in Govt. District Hospitals during financial year 2020-21 and 2021-22



3. C-section rate:

A caesarean section is a form of childbirth in which a surgical incision is made through mother's abdomen and uterus into deliver one or more babies. It was introduced in clinical practice as a lifesaving procedure both for the mother and the baby. C-section deliveries are absolutely critical to save lives in situations where vaginal deliveries would pose risks, so all health systems must ensure timely access for all women when needed.

C-section rate is calculated by dividing the number of Caesarean section deliveries performed in a year with the total number of deliveries in the year. The figure is multiplied by 100 in order to express it in percentage.

$$\text{C-section rate} = \frac{\text{Number of C-section deliveries performed in the year}}{\text{Total number of deliveries in the year (Normal + Assisted Deliveries + C Section)}} \times 100$$

The cases that come to district hospitals are often emergency or complicated cases. A surgical procedure cannot be avoided in such cases. As per the **WHO report, "At population level, C-section rates higher than 10% are not associated with reductions in maternal and new born mortality rates**. A district hospital would receive multiple complicated cases of pregnancy that require performing C-section surgery. The WHO states that every effort should be made to provide caesarean sections to women in need, rather than striving to achieve a specific rate.

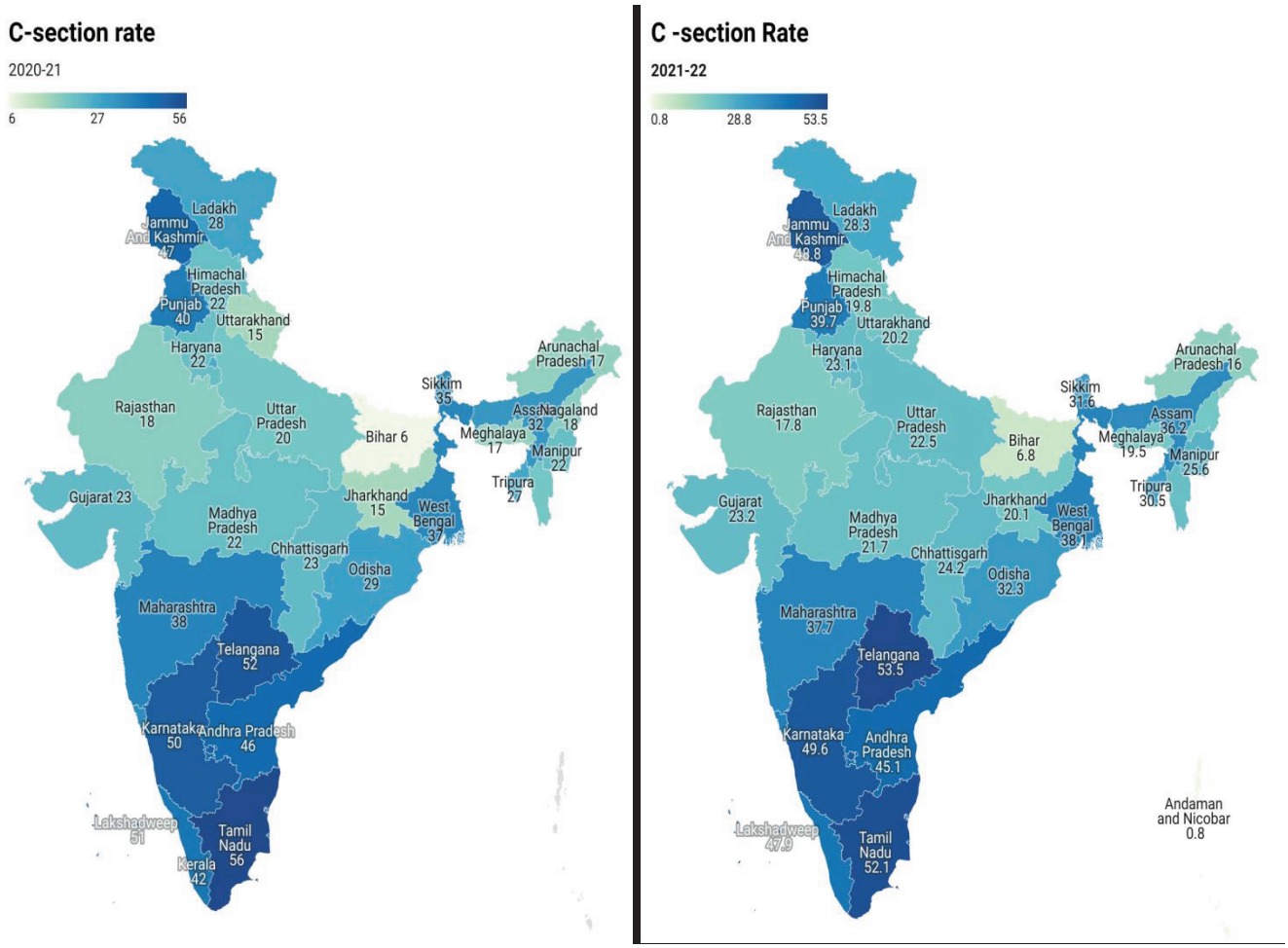
Significance

- C-section deliveries are absolutely critical to save lives in situations where vaginal deliveries would pose risks, so all health systems must ensure timely access for all women when needed.
- Both extremely low and extremely high rates of C-section deliveries pose adverse effects within maternal health care, and therefore, observing the trend of the C-section rate is crucial in identifying its reasons.
- C-section deliveries are associated with longer hospital stays, delayed initiation of breastfeeding and higher out-of-pocket expenses due to longer duration of stay.
- A high rate of C-section deliveries can be associated with both short- and long-term risks which can extend for many years beyond the current delivery and affect the health of the woman, her child, and future pregnancies.

The below map depicts the comparative analysis of C-section rate in all states of the country in the financial year 2020-21 and 2021-22. In the financial year 2020-21, C-section rate at national level was around 27% which rose to 28.8% in the next financial year 2021-22.

Overall, in the financial year 2021-22, C-section rate has increased in the most of the Indian states except some states such as Rajasthan, Tamil Nadu, Himachal Pradesh and Punjab. Furthermore, Bihar and Andaman and Nicobar island have lowest C-section rate in the both the financial years whereas Tamil Nadu has highest C-section rate (56%) in the financial year 2020-21 and Telangana (53.5%) has highest C –section rate in the financial year 2021-22.

Figure 10.5 Average percentage of C-section deliveries in Govt. district hospital of State/UTs during financial year 2020-21 and 2021-22



4. <u>Rate of early initiation of breastfeeding</u>:

Early initiation of breastfeeding, within one hour of birth, protects the new-born from acquiring infection and reduces new-born mortality. It facilitates emotional bonding of the mother and the baby and has a positive impact on duration of exclusive breastfeeding. When a mother initiates breastfeeding within one hour after birth, production of breast milk is stimulated. The yellow or golden first milk produced in the first days, also called colostrum, is an important source of nutrition and immune protection for the new-born.

The rate of early initiation of breastfeeding is calculated by dividing the total number of

new-borns breastfeed within 1 hour of birth by total number of live births. The figure is multiplied by 100 in order to express it in percentage.

$$\text{Rate of early initiation of breastfeeding} = \frac{\text{Total no. of new-borns breastfeed within 1 hr of birth}}{\text{Total number of live births}} \times 100$$

Significance

- Early initiation of breastfeeding has different health benefits like increase ability to defense infections, reduce the risk of diarrhea, and increase the survival rate of children.
- Neonatal mortality can be prevented by 33% if early initiation of breastfeeding is practiced by mothers.

The below bar graph compares the rate of initiation of breastfeeding in all states of the country in the financial year 2020-21 and 2021-22. As seen from the graph, the red highlighted bars represent the states having rate of initiation of breastfeeding lower than the national average. The national average of (which is highlighted in green color) rate of initiation of breastfeeding is 89.6 and 90 percent in the financial year 2020-21 and 2021-22.The states having rate of initiation of breasting is higher than the national average is represented by blue color.

From the figure no 10.6 it is clearly seen that, Delhi has the lowest rate of initiation of breastfeeding while Lakshadweep and Mizoram has highest rate of breastfeeding in the financial year 2020-21.

Figure 10.6 Average rate of early initiation of breastfeeding in public district hospitals of State/UTs during the financial year 2020-21 and 2021-22

5. **Blood Bank Replacement Rate**

In this indicator, blood units issued in a year includes voluntary donation replacement. Number of blood units issued on replacement donation means that a patient's attendant is being asked to give blood units, for getting blood from the blood bank. Replacement needs to be phased out as the replacement donor has a chance of higher sero-positivity (giving a positive result in a test of blood serum, e.g. for the presence of a virus.)

It is calculated by dividing the total number of blood units issued on replacement in the year by the total number of blood units issued in that year and then multiplied by 100.

This indicator has negative valence, implying that lower the score, better the performance.

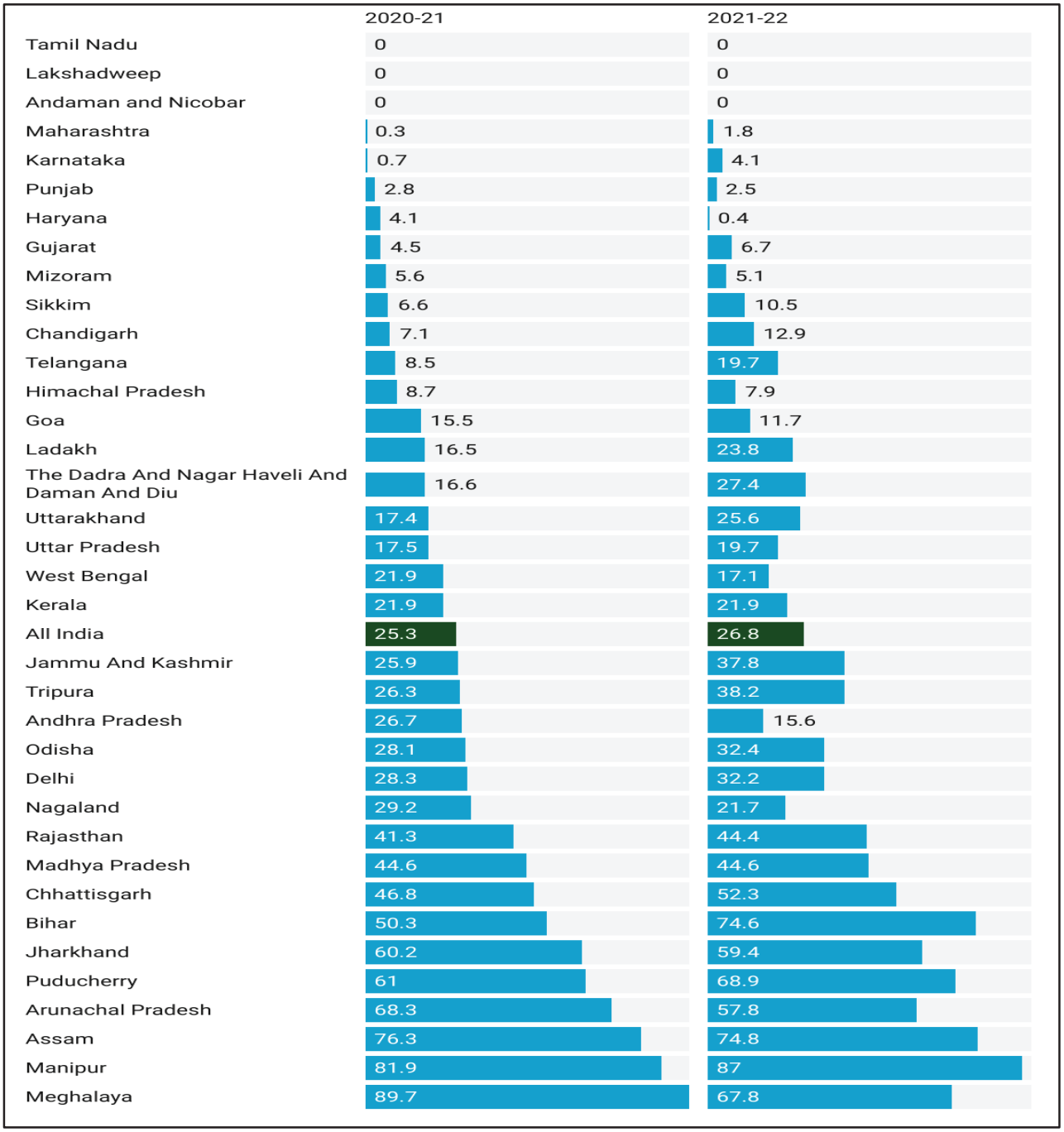
$$\text{Blood bank replacement rate} = \frac{\text{Total number of blood units issued on replacement in the year}}{\text{Total number of blood units issued in year}} \times 100$$

This indicator measures the ability of the hospital to provide as well as manage the supply of blood from low-risk donors.

Significance

- This indicator measures the ability of the hospital to provide as well as manage the supply of blood from low-risk donors.
- This indicator helps in identifying how much voluntary replacements are made and how many are paid. In an ideal situation the blood bank should be replenished with voluntary donations rather than asking the patient's caretakers to replace the blood units being issued to the patient.
- This indicator is to encourage voluntary donations and maintain a replenished blood bank. The spirit is not to refuse blood units by the patients' caretakers when issued, but also not insist upon replacing the blood units issued.

Figure 10.7: Average blood replacement rate in Govt. district hospitals of States/UTs during the financial year 2020-21 and 2021-22



The above chart reflects the blood replacement rate of all states in the financial year 2020-21 and 2021-22. Overall, there are 20 states /UTs which have blood replacement lower than the national average.

The national average of blood replacement in the financial year 2020-21 was 25.3% which rose to 26.8%in the next financial year 2021-22 which indicates blood replacement score going downwards. In Andaman and Nicobar islands for this indicator there was no data reported on HMIS portal.

Apart of this, as per reported data on HMIS, Tamil Nadu state is performing quite impressive in this indicator. As in the financial year 2020-21, 30,294 blood units and in the financial year 2021-22, 34,477 blood units are issued by Govt. district hospitals but in replacement they have zero reported data.

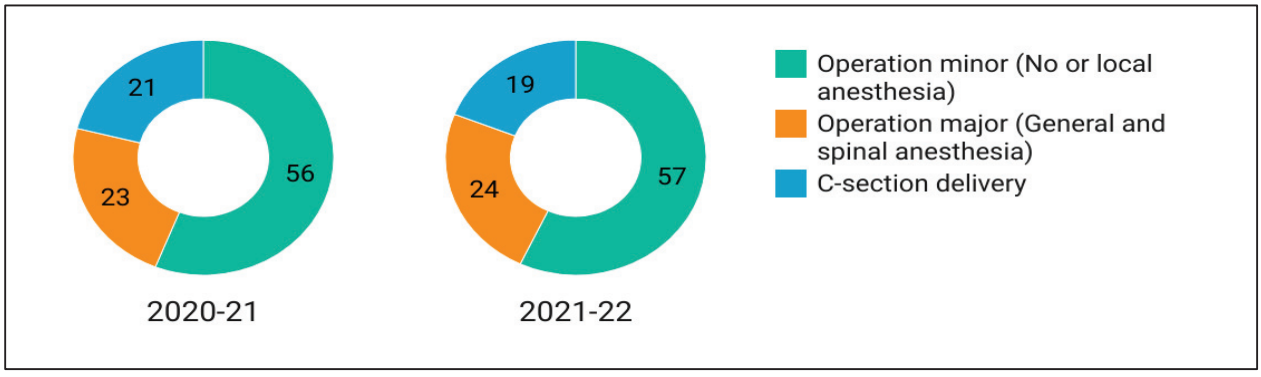
6. **Surgeries**

Surgery is the branch of medicine that deals with the physical manipulation of bodily structure to diagnose, prevent or cure diseases. Due to increase in traumatic injuries, cancers, and many other diseases, surgical interventions on public health systems are also growing. Also at many instances, surgeries are the only intervention that alleviates disabilities and reduce the risk of deaths from various ailments.

Generally the patients are referred to District Hospitals or FRUs for surgical treatment related to trauma, obstetric, abdominal, orthopedic emergencies etc. Therefore, surgical department should have surgical specialists available in these facilities for providing quality of surgical and acute care to patients. If there is, unavailability of apparatus, drugs, and various other essential supplies, it limits the good quality of surgical care.

Overall 32 lakh surgeries were performed in financial year 2020-21 which rose to 37 lakh in next financial year 2021-22. The graph given below compares the operation major, operation minor and C –section surgeries performed during the financial year 2020-21 and 2021-22.

Figure 10.8 Average Percentage of various surgeries conducted at govt. district hospitals across all over the country during the financial year 2020-21 and 2021-22



It can be seen from the graph that there is a slight change in the proportion of surgeries performed during the financial year 2020-21 and 2021-21.In the financial year 2020-21 , 56% surgeries comes under operation minor and the rest 21% and 23% comes under C section and operation major. In the next financial year 2021-

22, proportion of operation minor and operation major reaches to 57% and 24% whereas the percentage of C section during performed decline from 21% to 19% during the financial year 2020-21.

7. **Post-surgical site infection**

Surgical site infection (SSI) is an infection related to an operative procedure that occurs at or near the surgical incision within 30 days of the procedure, or within 90 days if prosthetic material is implanted at surgery. Sometimes be superficial infections involving the skin only. Other surgical site infections are more serious and can involve tissues under the skin, organs, or implanted material.

It is calculated by dividing total number of cases developed surgical site infection to total surgeries performed. The figure is multiply by 100.

$$\text{Post-surgical site infection} = \frac{\text{Total number of cases developed SSI}}{\text{Total surgeries performed}} \times 100$$

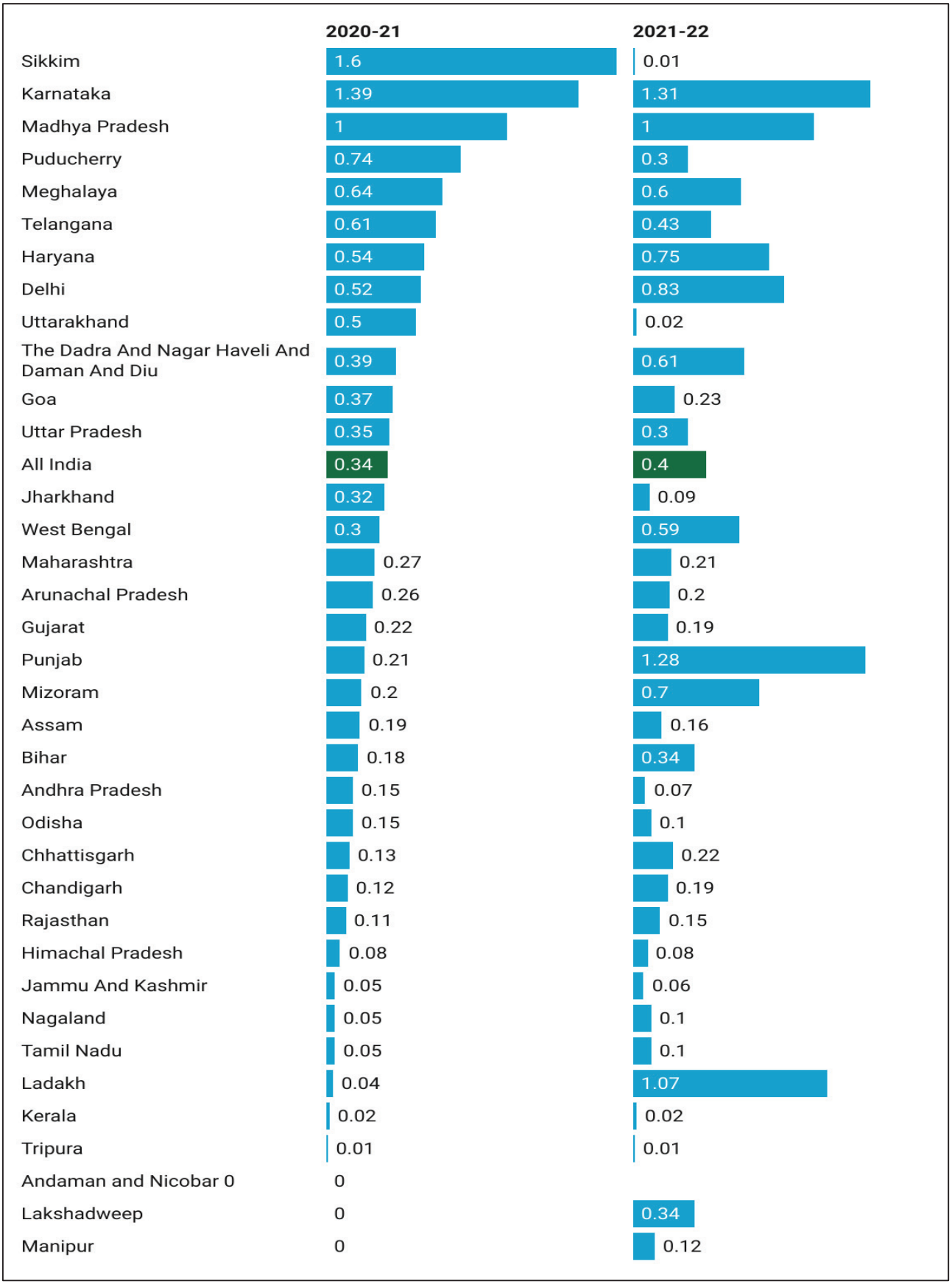
In total surgeries addition of operation major, operation minor and C section surgeries is done as SSI can develop also after C-section delivery.

Significance-

- SSIs occur in 2% to 4% of all patients undergoing inpatient surgical procedures. Risk factors for SSI include patient factors (such as age, tobacco use, diabetes, and malnutrition) and procedure-specific risk factors (including emergency surgery and the degree of bacterial contamination of the surgical wound at the time of the procedure).
- SSIs remain a significant cause of morbidity and mortality after surgery. They are the leading cause of readmissions to the hospital following surgery, and approximately 3% of patients who contract an SSI will die as a consequence.

The below chart shows the average percentage of post-surgical infection in the all states/UTs of the country during the financial year 2020-21 and 2021-22.The national average (highlighted green bar) for post-surgical infection rate in the financial year 2020-21 is 0.34% which rose to 0.4 % in the next financial year 2021-21. The lowest post infection rate is found in Manipur and Lakshadweep in the financial year 2020-21.

Figure 10.9 Average Percent of post-surgical infection in Govt. district hospital of State/UTs during the financial year 2020-21 and 2021-22



Conclusion

District hospitals cater to a wide spectrum of the population, including people from neighbouring states and districts, depending on its ease of accessibility. The service delivery, maintenance of records and accurate data reporting are equally important to assess the performance of the hospitals and analyse their outputs and outcomes.

District hospitals that had adopted digitized data reporting formats and had a dedicated staff to monitor data not only fared better in the performance assessment but also were able to utilize the data for internal decision-making and output improvement.

Based on the analysis of these health indicators, among bigger states, bed occupancy rate was highest in Odisha in both the financial year (2020-21 & 2021-22), and in smaller states and UTs Tripura and Ladakh were highest bed occupancy rate. Moving towards the lowest performing states in bed occupancy rates were Jammu & Kashmir, Arunachal Pradesh and Andaman and Nicobar islands among the bigger, smaller states and UTs for both the financial years (2020-21 & 2021-22).

Considering C –section rate among bigger states, Tamil Nadu conducted 56% and 52% in the financial year 2020-21 and 2021-22 which the highest percentage of C –section rate in the bigger states. In smaller states and UTs, Goa and Lakshadweep conducted highest percentage of C –section in-comparison to other smaller states and UTs.

Apart of this, in Blood replacement rate, among bigger states, Tamil Nadu was the ideal state for blood replacement rate during both these financial year (2020-21 & 2021-22) and in UTs, Chandigarh (7.1% in financial year 2020-21 & 12.9% in financial year 2021-22) and in smaller states, Mizoram (5.6% in financial year 2020-21 & 5.1% in financial year 2021-22) performed best in terms of blood replacement rate.

Furthermore, the performance of UTs in rate of initiation of breastfeeding is quite impressive during these financial years. All UTs have breastfeeding rate higher than 90%. Additionally, among bigger states of the country, the rate of initiation of breasting in one hour was lowest in Govt. district hospital of Delhi and highest in Govt. district hospitals of Kerala during the whole financial year of 2020-21 & 2021-22. In smaller states, Manipur has highest rate of initiation of breastfeeding in both the financial years.

As far as post-surgical infection rate is concerned, all Govt. district hospitals were performing well except Andaman and Nicobar Islands, Sikkim, Karnataka and Madhya Pradesh. The district hospitals should have work more to reduce the surgical site infection.

Annexure 10.1

Number of district hospitals as on 31st March 2022

State	No of District hospitals
Andaman & Nicobar Islands	2
Andhra Pradesh	7
Arunachal Pradesh	19
Assam	27
Bihar	36
Chandigarh	2
Chhattisgarh	27
Delhi	40
Goa	2
Gujarat	20
Haryana	22
Himachal Pradesh	9
Jammu And Kashmir	16
Jharkhand	21
Karnataka	26
Kerala	48
Ladakh	2
Lakshadweep	1
Madhya Pradesh	51
Maharashtra	59
Manipur	7
Meghalaya	11
Mizoram	12
Nagaland	12
Odisha	32
Puducherry	4
Punjab	26
Rajasthan	29
Sikkim	4
Tamil Nadu	20
Telangana	12
Dadra And Nagar Haveli And Daman And Diu	2
Tripura	7
Uttar Pradesh	162
Uttarakhand	13
West Bengal	37
Grand Total	**827**

Annexure 10.2
State/UT distribution of Average functional bed strength during 2020-21 and 2021-22

	2020-21			2021-22		
State/UTs	**No. of Functional Bed Count**	**No of district Hospitals**	**Average functional bed strength**	**Sum of Functional Bed Count**	**No of district Hospitals**	**Average availability of functional beds**
Andaman and Nicobar	182	2	91	182	2	91
Andhra Pradesh	2580	11	235	1380	7	197
Arunachal Pradesh	1133	18	63	1183	19	62
Assam	5304	27	196	5098	27	189
Bihar	4096	36	114	4096	36	114
Chandigarh	597	2	299	597	2	299
Chhattisgarh	3681	25	147	3831	27	142
Delhi	8769	36	244	9789	40	245
Goa	590	2	295	590	2	295
Gujarat	3218	20	161	3218	20	161
Haryana	3647	22	166	3647	22	166
Himachal Pradesh	1914	9	213	1914	9	213
Jammu And Kashmir	2068	16	129	2068	16	129
Jharkhand	3203	22	146	2703	21	129
Karnataka	8048	25	322	8298	26	319
Kerala	14232	48	297	14232	48	297
Ladakh	350	2	175	350	2	175
Lakshadweep	50	1	50	50	1	50
Madhya Pradesh	16600	51	325	16600	51	325
Maharashtra	11968	53	226	12593	59	213
Manipur	551	7	79	551	7	79
Meghalaya	2100	12	175	2000	11	182
Mizoram	1231	12	103	1231	12	103
Nagaland	987	11	90	1017	12	85
Odisha	7842	30	261	8423	32	263
Puducherry	1227	4	307	1227	4	307
Punjab	4316	25	173	4416	26	170
Rajasthan	8646	27	320	8636	29	298
Sikkim	400	4	100	400	4	100
Tamil Nadu	6957	20	348	6957	20	348
Telangana	3042	10	304	3342	12	279
The Dadra And Nagar Haveli And Daman And Diu	240	2	120	240	2	120
Tripura	1260	7	180	1260	7	180
Uttar Pradesh	23527	167	141	22853	162	141
Uttarakhand	1406	16	88	1264	13	97
West Bengal	16539	36	459	17097	37	462
Grand Total	172501	818	211	173333	827	210

Annexure 10.3

Comparison of various indicators during financial year 2020-21 and 2021-22

	Bed occupancy rate		C section rate		Blood replacement rate	
State	2020-21	2021-22	2020-21	2021-22	2020-21	2021-22
All India	44.8	49.9	27.1	28.8	28.6	25.3
Andaman and Nicobar	4.7	2.7	2.0	0.8	0.0	0.0
Andhra Pradesh	68.2	39.8	46.5	45.1	15.6	26.7
Arunachal Pradesh	2.9	4.2	17.5	16.0	57.8	68.3
Assam	36.0	44.7	31.8	36.2	74.8	76.3
Bihar	38.0	43.0	6.0	6.8	74.6	50.3
Chandigarh	37.1	58.2	37.7	39.6	12.9	7.1
Chhattisgarh	41.9	48.3	22.7	24.2	52.3	46.8
Delhi	43.4	45.5	26.0	26.7	32.2	28.3
Goa	34.0	44.5	34.6	39.2	11.7	15.5
Gujarat	27.3	35.5	22.5	23.2	6.7	4.5
Haryana	68.6	75.2	22.3	23.1	0.4	4.1
Himachal Pradesh	34.5	34.8	22.2	19.8	7.9	8.7
Jammu And Kashmir	11.8	18.0	46.9	48.8	37.8	25.9
Jharkhand	32.8	40.9	15.5	20.1	59.4	60.2
Karnataka	40.9	57.9	49.6	49.6	4.1	0.7
Kerala	34.1	34.1	41.8	41.8	21.9	21.9
Ladakh	39.9	60.5	27.5	28.3	23.8	16.5
Lakshadweep	36.2	36.4	50.8	47.9	0.0	0.0
Madhya Pradesh	62.3	62.3	21.7	21.7	44.6	44.6
Maharashtra	56.4	62.7	38.4	37.7	535.8	0.3
Manipur	15.2	18.7	21.9	25.6	87.0	81.9
Meghalaya	37.2	39.9	16.7	19.5	67.8	89.7
Mizoram	41.9	52.7	19.7	22.1	5.1	5.6
Nagaland	7.3	10.1	17.9	19.6	21.7	29.2
Odisha	81.5	85.1	29.3	32.3	32.4	28.1
Puducherry	30.0	41.1	42.8	44.6	68.9	61.0
Punjab	56.3	59.6	39.8	39.8	2.5	2.8
Rajasthan	58.2	71.7	17.8	17.8	44.4	41.3
Sikkim	46.6	47.8	34.6	31.6	10.5	6.6
Dadra And Nagar Haveli And Daman And Diu	35.5	43.3	42.2	44.0	27.4	16.6
Tamil Nadu	63.1	77.6	56.0	52.1	0.0	0.0
Telangana	28.2	28.4	52.4	53.5	19.7	8.5
Tripura	49.4	59.1	26.6	30.5	38.2	26.3
Uttar Pradesh	32.1	35.0	19.9	22.5	19.7	17.5
Uttarakhand	31.1	39.6	15.0	20.2	25.6	17.4
West Bengal	34.2	39.1	37.2	38.1	17.1	21.9

Annexure 10.3
Comparison of various indicators during financial year 2020-21 and 2021-22 (Contd.)

	Rate of early initiation of breastfeeding		Post-surgical infection rate	
State	**2020-21**	**2021-22**	**2020-21**	**2021-22**
All India	89.6	90.0	0.34	0.40
Andaman and Nicobar	97.6	91.8	0.00	0.00
Andhra Pradesh	93.9	99.7	0.15	0.07
Arunachal Pradesh	89.2	90.4	0.26	0.20
Assam	94.0	92.4	0.19	0.16
Bihar	87.8	91.1	0.18	0.34
Chandigarh	96.1	95.4	0.12	0.19
Chhattisgarh	92.0	86.4	0.13	0.22
Delhi	79.8	78.7	0.52	0.83
Goa	96.8	96.5	0.37	0.23
Gujarat	90.4	89.3	0.22	0.19
Haryana	89.2	89.7	0.54	0.75
Himachal Pradesh	84.9	86.1	0.08	0.08
Jammu And Kashmir	92.9	93.7	0.05	0.06
Jharkhand	93.0	91.3	0.32	0.09
Karnataka	91.5	92.5	1.39	1.31
Kerala	96.1	96.1	0.02	0.02
Ladakh	93.5	84.8	0.04	1.07
Lakshadweep	98.4	97.3	0.00	0.34
Madhya Pradesh	89.2	89.2	1.00	1.00
Maharashtra	95.6	94.7	0.27	0.21
Manipur	82.0	77.3	0.00	0.12
Meghalaya	86.1	88.2	0.64	0.60
Mizoram	98.4	98.0	0.20	0.70
Nagaland	93.2	93.8	0.05	0.10
Odisha	93.0	93.7	0.15	0.10
Puducherry	95.0	93.3	0.74	0.30
Punjab	85.0	79.9	0.21	1.28
Rajasthan	87.1	87.9	0.11	0.15
Sikkim	94.6	93.9	1.60	0.01
Dadra And Nagar Haveli And Daman And Diu	86.7	81.0	0.39	0.61
Tamil Nadu	86.6	90.9	0.05	0.10
Telangana	91.4	83.4	0.61	0.43
Tripura	87.2	95.0	0.01	0.01
Uttar Pradesh	87.8	88.9	0.35	0.30
Uttarakhand	89.3	86.5	0.50	0.02
West Bengal	89.5	91.6	0.30	0.59

Contributors

Ms. Ritu Arora
Dr. Ugra Mohan Jha
Ms.Richa Saxena
Mr. Sheo Prasad Jaiswal
Dr. Rakesh Sharma
Dr. Nidhi Tiwari
Dr. Abhishek Kumar
Ms. Manisha Verma
Dr. Priyanka Bajaj
Cover page designed by Mr. Pradeep Mishra