

CHAPTER VIII : DATA COLLECTION, MANAGEMENT AND REPORTING

8.1 Introduction

The interventions to ensure fundamental corrections in the existing health care delivery system have increased the demand for data on population and health for use in both micro-level planning and programme implementation. A continuous flow of good quality information on inputs, outputs and outcome indicators facilitate monitoring of the objectives of National Rural Health Mission (NRHM).

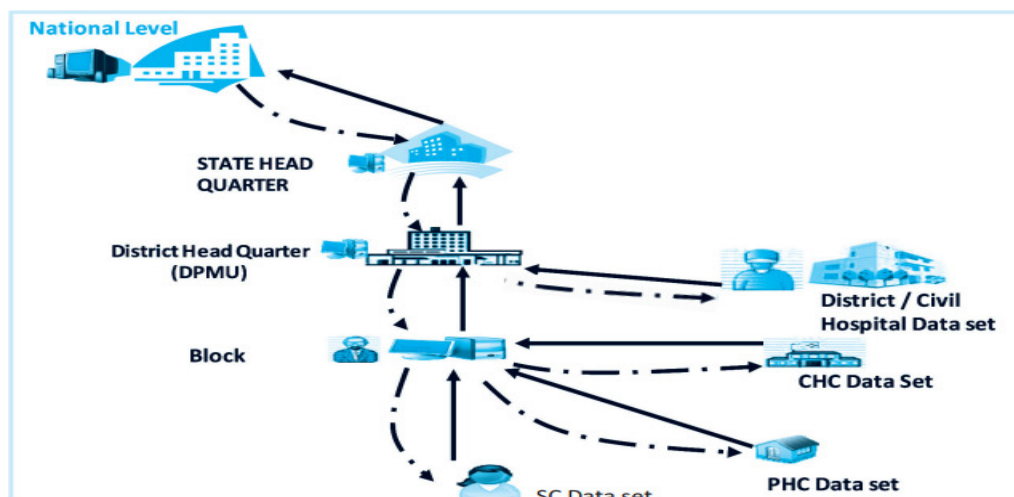
8.2 Health Management Information System

Health Management Information System (HMIS) was conceptualized as a continuous flow of quality information on inputs, outputs and outcome indicators to facilitate monitoring of the objectives of NRHM. The Ministry launched HMIS, a Geographical Information System¹ enabled web-based monitoring system in October 2008 with the objective to record information on health events² and check the quality of services at different levels of health care. NRHM framework envisages intensive accountability structures based on internal monitoring through HMIS. The HMIS comprises data relating to the parameters of service delivery and infrastructure (both physical and manpower) at different levels of the health facilities. The flow of data in HMIS from sub-Centre (SC) to national level is as given in **Diagram-8.1**:

¹ Geographical Information System is a computer based tool that analyses, stores, manipulates and visualizes geographic information on a map.

² **Antenatal Care Services** : number of pregnant women registered and received 3rd& 4th check up etc., **Deliveries**: deliveries conducted at home; deliveries conducted at public health facility etc, **Pregnancy outcome and Details of new born**: live birth; still birth; weight of newborn etc., **Post Natal Care**: women receiving post-partum check up, **Child Immunisation** etc.

Diagram-8.1³: Information flow from SC to national level



(Source: 'Service Providers Manual - Understanding HMIS (Volume-I)')

In part A of this chapter, Audit has compared the data in HMIS with the data in the basic records available at the health facilities. In part B, Audit has analysed the HMIS database provided by the Ministry using IT tools.

PART-A

Comparison of HMIS data with the data in the basic records

8.3 Quality of Data in HMIS

Data quality refers to the extent to which data measures what the stakeholders intend to measure. Data should be checked for quality to minimize errors so that it can be used for decision making. Quality of data in HMIS in terms of completeness, timeliness and accuracy has been discussed in succeeding paragraphs:

8.3.1 Data completeness

For a complete picture of health indicators, all health facilities should report data. Audit noticed that all the facilities were not reporting on the HMIS as explained below:

(i) Reporting by health facilities

The position of health facilities reporting data through HMIS during 2011-16 is depicted in **Table-8.1** below:

³ In the diagram, straight lines represent upward flow of information and the dotted lines represent downward flow of information
Performance Audit of Reproductive and Child Health under National Rural Health Mission

Table-8.1: Details of health facilities not reporting on HMIS

Sl. No.	Year	Total facilities	Facilities reporting	Facilities not reporting	Per cent facilities not reporting
1.	2011-12	2,03,245	48,655	1,54,590	76
2.	2012-13	2,03,245	1,07,605	95,640	47
3.	2013-14	2,03,245	1,67,786	35,459	17
4.	2014-15	2,04,449	1,79,676	24,773	12
5.	2015-16	2,09,964	1,96,976	12,988	6

(Source: Month wise status of Data Reporting - Standards Reports on HMIS)

The States with major shortfall as on March 2016 were **Arunachal Pradesh** (32 per cent), **Chhattisgarh** (25 per cent), **Gujarat** (17 per cent), **Manipur** (11 per cent) and **Meghalaya, Mizoram** (19 per cent).

(ii) Incomplete reporting by health facilities

Even in cases where the health facilities were reporting on HMIS, the data was not complete. While such issues were observed in a number of states like **Bihar, Chhattisgarh, Gujarat, Madhya Pradesh, Meghalaya and Uttar Pradesh**, the case of **Bihar** is discussed in **Table-8.2** below:

Table-8.2: Details of data item/services reported by PHC⁴s in Bihar during 2014-15

Sl. No.	Item code	Data Item/Service	Number of PHCs in the State	Number of PHCs reporting			Number of PHCs not reporting data
				Service available	Number	Total PHCs	
1.	1.2.b	Emergency services (24 Hours)	1,883	No	915	1,515	368
				Yes	600		
2.	1.2.d	In-patient Services		No	837	1,512	371
				Yes	675		
3.	1.6.1.a	Ante-natal care		No	129	1,290	593
				Yes	1161		
4.	1.6.1.d	New born Care		No	647	1,277	606
				Yes	630		
5.	4.1	Routine urine, stool and blood tests		No	774	1,034	849
				Yes	260		
6.	4.7	Rapid tests for pregnancy	No	576	1,025	858	
			Yes	449			
7.	5.17.a	Labour room available	No	433	909	974	
			Yes	476			
8.	9.1	Citizen's charter (Yes/No)	No	436	814	1069	
			Yes	378			

⁴ Primary Health Centre

Sl. No.	Item code	Data Item/Service	Number of PHCs in the State	Number of PHCs reporting			Number of PHCs not reporting data
				Service available	Number	Total PHCs	
9.	9.3	Internal monitoring (Social audit through PRI/RKS etc.)		No	267	821	1062
				Yes	554		

It can thus be seen that PHCs were not uniformly reporting on the availability of services making further analysis and taking corrective action difficult. The Ministry stated that it had highlighted the cases of non-reporting or incomplete reporting on various platforms like National level workshops, Regional workshops, National Programme Coordination Committee meetings, visits of senior officials of Ministry etc.

However, incomplete reporting by facilities would have huge bearing on the assessment of outcome indicators and taking remedial measures based on such assessment.

8.3.2 Timeliness of data

The Ministry rolled out the concept of data freezing on HMIS in December 2014, when the data of 2008-09 to 2011-12 was frozen for the first time. The Ministry specified the dates for year wise data freezing as given in **Table-8.3** below:

Table-8.3: Year wise details of HMIS data freezing

Year	Date of data freezing
Upto 2011-12	31 December 2014
2012-13	12 January 2015
2013-14	15 February 2015
2014-15	31 August 2015
2015-16	20 August 2016

Audit noted that HMIS remained open for modification/addition by the users which resulted in delay of finalization or freezing of data for use by the stakeholders prior to 2014-15.

The Ministry stated that HMIS does not permit users to modify data after freezing. The reply of the Ministry is not tenable because our concern is on delayed freezing.

8.3.3 Accuracy of data in HMIS

Accuracy refers to the correctness of data reported such as actual number of services provided, health events organised etc.

Audit observed significant discrepancies in the data as reported in HMIS *vis-à-vis* the information available as per basic records/registers in the selected health facilities of 14 States. These are discussed State wise in the succeeding paragraphs:

(a) Assam

The discrepancies were noticed under various parameters *viz.*, pregnant women receiving antenatal care (ANC) and postnatal care (PNC), pregnant woman and infants receiving immunization, etc., as per the details given in **Table-8.4** below:

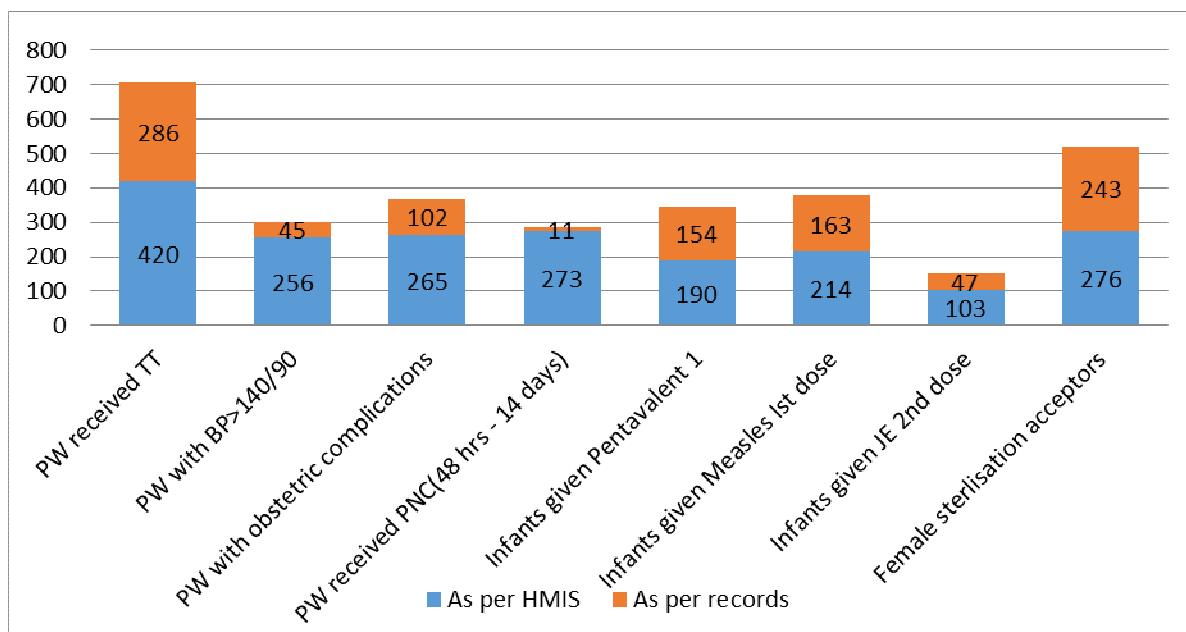
Table-8.4: Discrepancy in data as per HMIS and basic records, Assam for March 2016

Sl No.	Facility type (Number of facilities)	Data as per	Pregnant women receiving 1st ANC	Pregnant women given TT Immunization		Pregnant women with Haemoglobin less than 11 grams/dl	Pregnant women receiving PNC between 48 hours and 14 days after delivery	Infants (0 to 11 months old) immunized	Total number of condom pieces distributed
				TT1	TT2				
1.	CHC ⁵ (8)	HMIS	260	241	219	110	69	7	1,060
		Register	251	217	204	185	57	47	285
2.	PHC (30)	HMIS	340	279	191	226	125	199	1,660
		Register	367	231	134	358	129	179	1,535
3.	SC (41)	HMIS	362	296	278	128	114	299	2,726
		Register	341	285	222	152	104	296	2,488

Audit observed similar discrepancies in the seven selected District Hospitals (DHs) as depicted in **Chart-8.1** below:

⁵ Community Health Centre
Performance Audit of Reproductive and Child Health under National Rural Health Mission

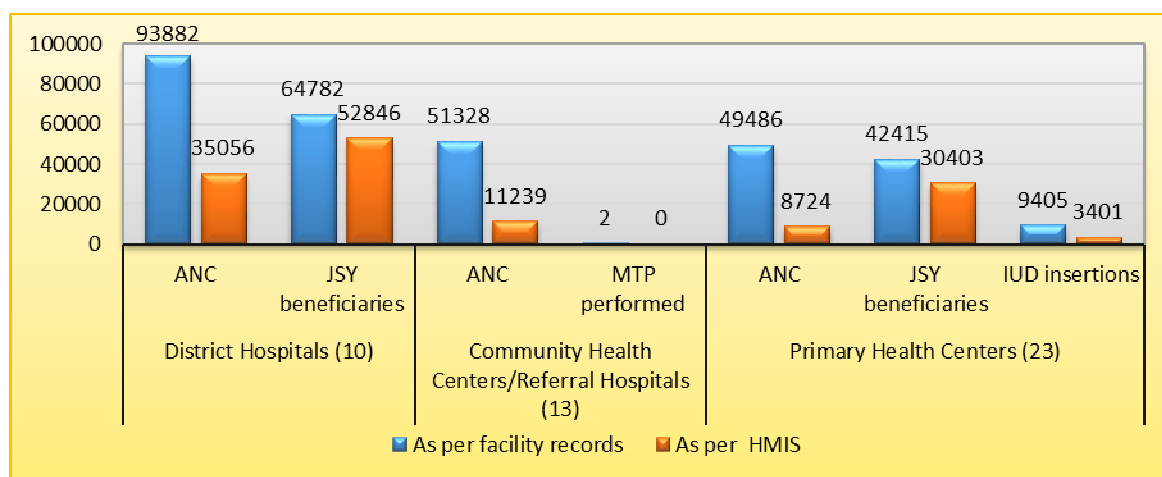
Chart- 8.1: Discrepancy between the data as per HMIS and records in DHs Assam, March 2016



(b) Bihar

Discrepancy in the data on services provided by the selected facilities is depicted in **Chart-8.2** below:

Chart-8.2: Discrepancy in data of services delivery in Bihar, during 2015-16



(MTP: Medical Termination of Pregnancy, IUD: Intra Uterine Device)

(c) Chhattisgarh

(i) The discrepancy in data in the selected SCs in four districts is detailed in **Table-8.5** below:

Table-8.5: Difference in the figures as per HMIS and records in Chhattisgarh, during 2015-16

Sl. No.	District(Number of SCs)	Institutional Delivery			Home Delivery		
		As per Records	As per HMIS	Difference (+/-)	As per Record	As per HMIS	Difference (+/-)
1.	Bilaspur(12)	103	59	(-) 44	254	334	(+)80
2.	Jashpur(12)	92	105	(+)13	159	141	(-)18
3.	Mahasamund(12)	966	379	(-)587	52	102	(+)50
4.	Rajnandgaon(12)	270	282	(+)12	90	261	(+)171

- (ii) As per the guidelines of HMIS, number of pregnant woman is to be reported when the number of Iron Folic Acid (IFA) tablets given to her exceeds 100. However, audit found that total available IFA tablets as per records was insufficient for the number of pregnant women shown to have been given such tablets. **Table-8.6** below illustrates the point:

Table-8.6: Details of Pregnant women registered and IFA tablets provided

Sl. No.	Period	(State/ Block)	Number of pregnant women registered	Number of pregnant women shown given IFA tablets as per HMIS	Number of IFA tablets available	Number of pregnant women for whom the available IFA tablets were sufficient	Excess number of pregnant women shown in the data
1	2013-16	State (Chhattisgarh)	20,18,614	17,86,063	5,45,40,000	5,45,400	12,40,663
2	2014-16	Bagbahra	9,547	9,250	2,10,600	2,106	7,144
3	2012-16	Belha	45,015	37,813	5,72,100	5,721	32,092
4	2011-16	Ghumka	23,473	15,708	1,96,700	1,967	13,741
5	2011-16	Khairagarh	22,107	13,731	12,49,672	12,497	1,234
6	2015-16	Lodam	1,649	1,406	1,06,800	1,068	338

- (iii) In 20 SCs, auxiliary nurse and mid-wife (ANMs) were not trained as skilled birth attendant (SBA) but HMIS data showed that delivery was conducted by SBA trained ANMs.
- (iv) Mismatch was observed in the data on retaining of women after delivery for 48 hours as per Delivery register and HMIS as detailed in **Table-8.7** below:

Table-8.7 Discrepancy in data as per HMIS and Records in CHC Khairagarh, Chattisgarh

Sl. No.	Month	Total deliveries	Discharged within 48 hours	
			As per Delivery register	As per HMIS
1.	June 2015	62	34	21
2.	July 2015	62	40	23
3.	August 2015	66	36	26
4.	September 2015	78	52	17

Sl. No.	Month	Total deliveries	Discharged within 48 hours	
			As per Delivery register	As per HMIS
5.	October 2015	91	56	27
6.	November 2015	81	62	22
7.	December 2015	93	55	20
8.	January 2016	61	44	19
9.	February 2016	54	31	9
10.	March 2016	61	39	31

(d) Himachal Pradesh

As per records, number of pregnant women registered in the State under JSY during 2011-12 and 2014-15 was 21,811 and 36,493 whereas the corresponding numbers reported in HMIS was 28,966 and 39,416 respectively. Similar variations were noticed in the selected districts as detailed in **Table-8.8** below:

Table-8.8: Details of difference in data, Himachal Pradesh

Sl. No.	Year	Hamirpur		Kullu		Sirmour	
		Records	HMIS	Records	HMIS	Records	HMIS
1.	2011-12	1,788	1,517	997	Data not available	873	1,818
2.	2012-13	2,143	1,531	2,009	876	1,932	1,932
3.	2013-14	2,061	1,325	2,537	1,629	2,902	2,902
4.	2014-15	1,939	1,185	2,469	1,612	3,271	3,538
5.	2015-16	2,065	1,231	2,611	1,477	3,219	3,219

The State Mission Director stated that the discrepancy in HMIS might be due to error in compilation. The Ministry stated that facility in charge was expected to look into the data regularly. Block MIS officer and district MIS officers were also expected to monitor the data quality on regular basis.

The reply was however silent on the corrective action to be taken to resolve the issues.

(e) Jharkhand

Discrepancy in the selected health facilities of five selected districts⁶ are given in the **Table-8.9** below:

⁶ Dumka, Giridih, Gumla, Jamtara and West Singhbhum.

Table-8.9: Difference in data as per HMIS and records in Jharkhand during 2015-16

Sl. no.	Name of Service	DH		CHC		PHC		SC	
		As per records	As per HMIS	As per records	As per HMIS	As per records	As per HMIS	As per records	As per HMIS
1.	ANC Registration	8,795	6,383	18,736	15,854	2,443	2,652	6,317	6,364
2.	Deliveries	34,207	34,341	10,932	13,612	597	1,105	869	678
3.	JSY beneficiaries	59,220	59,163	14,368	10,894	1,254	2,108	5,303	5,616
4.	Maternal Deaths	43	0	113	23	1	0	113	14
5.	Infant Deaths	69	18	40	8	2	0	127	4

(f) Maharashtra

Instances of discrepancy in respect of a few indicators are given in the **Table-8.10** below:

Table-8.10: Difference in data in HMIS and records in Maharashtra during 2015-16

Sl. no	District	Institutional Delivery		Number of live births		Number of Pregnant women given IFA tablets	
		HMIS	Records	HMIS	Records	HMIS	Records
1.	Bhandara	16,826	19,967	19,599	19,617	8,939	8,943
2.	Buldhana	19,203	42,491	29,882	42,246	37,776	40,055
3.	Nanded	57,642	29,313	84,295	29,094	22,166	25,404
4.	Ratnagiri	7,885	20,334	20,164	20,163	13,909	21,540
5.	Yavatmal	24,168	44,977	32,098	44,333	30,555	32,781

Similar differences were noticed during 2011-15 (**Annexure-8.1**).

Inconsistent data in Rajasthan

For online tracking of pregnant women, infant and children, monitoring of immunization and institutional deliveries *etc*, Pregnancy, Child Tracking and Health Services Management System (PCTS) was implemented in Rajasthan from September 2009. Cross examination of data on activities as per PCTS and HMIS with records maintained at facilities revealed differences in selected districts as given in the **Table- 8.11** below:

Table-8.11: Discrepancy in data as per PCTS, HMIS and Records in Rajasthan

Sl. no	Name of Service	2013-14			2014-15			2015-16		
		Records	PCTS	HMIS	Records	PCTS	HMIS	Records	PCTS	HMIS
1.	Pregnant women registered for ANC	2,75,961	2,74,656	2,74,820	2,77,576	2,76,473	2,76,485	2,76,286	2,77,642	2,62,371
2.	Pregnant women received 3 ANCs	2,10,574	2,09,663	2,09,771	2,09,308	2,07,891	2,07,892	1,91,096	1,90,321	1,84,101

3.	Pregnant women given 100 IFA tablets	2,07,954	2,06,085	2,49,598	2,13,651	2,11,913	2,63,390	2,03,474	2,01,524	2,53,955
4.	Institutional Deliveries	2,25,529	2,31,893	2,33,542	2,19,768	2,22,549	2,23,337	2,23,532	2,23,703	2,17,853
5.	Women discharged within 48 hours of Delivery	44,273	42,645	95,783	44,981	38,525	24,708	65,923	44,200	27,721
6.	Newborn having weight less than 2.5 kg	62,632	74,367	74,402	58,737	58,390	58,491	33,271	30,797	59,137

(g) Tripura

Comparison of HMIS data with records maintained in the selected facilities revealed difference as given in **Table-8.12** below:

Table-8.12: Difference in data as per HMIS and records during 2011-16

Sl. No.	Name of Service	SC		PHC		CHC		DH	
		HMIS	Records	HMIS	Records	HMIS	Records	HMIS	Records
1.	Pregnant women registered for ANC	8,194	6,951	4,597	5,562	1,601	21,491	No difference	
2.	Pregnant women registered under JSY	NA	NA	2,764	3,185	173	5,980	806	2,017
3.	Pregnant women received 3 ANC's	4,919	2,355	2,284	3,766	270	8,272	No difference	
4.	Pregnant women given 100 IFA tablets	4,355	3,270	2,982	4,199	1,106	8,061	No difference	
5.	Pregnant women discharged under 48 hours of delivery	NA	NA	983	714	2,798	1,926	No difference	

(h) Uttarakhand

Comparison of data on various activities in HMIS and the records revealed mismatches between the two as mentioned in **Table-8.13** below:

Table-8.13: Difference in data as per HMIS and records in Uttarakhand, during 2015-16

Sl. No.	Data Item	HMIS	Records
1.	Pregnant women Registered for ANC	2,21,686	2,20,273
2.	Pregnant women given 100 IFA tablets	59,841	59,018
3.	Institutional deliveries	95,812	95,664
4.	Home deliveries	29,058	28,991
5.	Deliveries with obstetric complications	9,419	9,346
6.	Live Birth Male	77,547	77,454
7.	Live Birth Female	70,264	70,184
8.	Administration of Vitamin A	74,798	51,743
9.	Vasectomy	1,143	1,176
10.	Third ANC	1,77,171	1,76,213
11.	Maternal Death	54	123

(i) **Discrepancy of data in a few other States****Table-8.14: Discrepancy of data in States**

Sl. No.	State	Details of discrepancy
1.	Gujarat	<ul style="list-style-type: none"> ➤ Two maternal deaths took place at PHC, Hadiyol during 2015-16. However, HMIS showed no such data. ➤ Number of infant deaths during 2015-16 was 23, 1, 17 and 56 at PHC, Hadiyol, Jaswantgadh, Nava Revas and Nadiad respectively. HMIS showed no such data.
2.	Madhya Pradesh	<ul style="list-style-type: none"> ➤ Number of First Referral Units (FRUs) in HMIS ranged from 979 in 2011-12 to 3,082 in 2015-16, whereas only 148 FRUs were functional in 2015-16. ➤ As per HMIS, number of functional 24x7 PHCs in 2015-16 was 4,778, while only sixty-eight 24x7 PHCs were functional. ➤ As per HMIS, number of functional Sick New Born Care units (SNCUs) was 2,566 in 2015-16, whereas only 54 SNCUs were functioning in the State. ➤ SHS stated (August 2016) that data entry in the HMIS portal was carried out at field level where some of the operators did not take action on the error after data entry, hence wrong data was exhibited in the HMIS reports.
3.	Manipur	<ul style="list-style-type: none"> ➤ As per Delivery Register of DH, Ukhrul, 361 deliveries were conducted during 2015-16. However, as per HMIS, 314 deliveries were reported. ➤ 4 and 3 C-Section deliveries were conducted in June and July 2015 at DH, Ukhrul however, HMIS showed five C-Section deliveries in June 2015 and none during July 2015.
4.	Meghalaya	<ul style="list-style-type: none"> ➤ There was discrepancy in data on various data elements <i>e.g.</i> Total number of pregnant woman registered for ANC, number of pregnant woman registered under Janani Suraksha Yojana (JSY), number of pregnant woman who received Tetanus Toxoid1 (TT1) <i>etc.</i> during 2015-16 (Annexure-8.2).
5.	Odisha	<ul style="list-style-type: none"> ➤ Data Discrepancy was noticed under various services <i>viz.</i>, ANC/PNC, number of deliveries, maternal/infant deaths <i>etc.</i> as per HMIS and as per records of the facility during 2015-16 (Annexure-8.3).

8.4 Validation checks

For maintaining data accuracy, various validation checks had been incorporated in HMIS so that the user is highlighted with probable cases of

data issues at the time of data entry itself. Some examples of validation⁷ issues are given in the **Table-8.15** below:

Table-8.15: Details of validation issues in HMIS

Sl. No.	Year	State	District	Number of issues ⁸
1.	2011-12	Bihar	Aurangabad	54
2.	2012-13	Chhattisgarh	Bastar	32
3.	2013-14	Meghalaya	East Garo Hills	11
4.	2014-15	Madhya Pradesh	Tikamgarh	45
5.	2015-16	Uttar Pradesh	Allahabad	49

However, these issues had not been resolved. The Ministry stated that Probable Outliers and Validation Reports identify the probable cases where there might be a data discrepancy. However, the cases which get highlighted in the report may not be an error and could be actual performance for that particular state/UT.

Audit however observed that the data in HMIS inconsistent with the prescribed validation checks remained unresolved. Some examples are given in **Annexure-8.4**.

Thus the data reported in HMIS did not tally entirely with the data available in the records of health facilities. This indicates that the data was not verified at appropriate level before being uploaded on HMIS portal. The variations and mismatch in two sets of data indicates the need for institutionalizing a mechanism for reliable data capture and reporting.

The Ministry stated that more than 1.96 lakh facilities across country upload monthly performance data and annual infrastructure data on HMIS portal. On the basis of a small sample drawn from few districts (that too on random basis, which may not be proper representative of the National scenario), the judgment on reliability or lack of integrity cannot be drawn. Such a huge system is bound to have some challenges related to monitoring but on the basis of some pitfalls the integrity of the system should not be doubted. Further, during exit conference, Ministry stated that data from different sources viz. registers and HMIS have variations as data entry is a cause of concern everywhere.

⁷ In HMIS, validation report discrepancy is highlighted on the basis of certain pre-defined rules and logic.

⁸ As per the standard report viz. "Outlier and Validation issues" on HMIS portal
[Performance Audit of Reproductive and Child Health under National Rural Health Mission](#)

The reply of the Ministry is not tenable as samples are selected on a scientific basis and inferences based on them, to a large extent, represent the entire population.

8.5 Computerisation and networking

NRHM envisaged accountability through computer based HMIS. A robust information system which could provide accurate, up to date and timely information was needed at every level. Accordingly, network facility was required at the ground level to transmit data. It was, however, observed that there was no adequate computerization, networking and human resources in the selected facilities. As a result, the facilities had to upload the reports on HMIS portal from the district headquarters or the nearest internet accessible area. This resulted in delayed availability or non-availability of data. State wise observations are given in **Annexure-8.5**.

These observations were also supported by the facility survey conducted in 134 DHs, 300 CHCs and 514 PHCs as detailed in **Table 8.16** below:

Table-8.16: DHs, CHCs and PHCs

Sl. No.	Facility	Per cent of selected health facilities where the facility was not available		
		DHs	CHCs	PHCs
1.	Computer	2	8	54
2.	Internet connection	13	12	64
3.	Data Entry Operator	18	35	76

8.6 Non-maintenance of records

Proper maintenance of records at the health facility was necessary for assessing the health situation in the area. IPHS 2012 envisaged maintenance of 12 registers⁹ across all health facilities. These registers are primary records and help in taking corrective actions for improvement of the healthcare facilities. Hence, these records are required to be maintained and preserved.

⁹ Eligible Couple Register (including contraception), (2) Maternal and Child Health Register (a. Antenatal, intra-natal, postnatal b. Under-five register: i. Immunization ii. Growth monitoring c. Above Five Child immunization d. Number of HIV/STI screening and referral), (3) Births and Deaths Register, (4) Drug Register, (5) Equipment, Furniture and other Accessory Register, (6) Communicable diseases/Epidemic Register/Register for Syndromic Surveillance, (7) Passive Surveillance Register for malaria cases, (8) Register for records pertaining to Janani Suraksha Yojana, (9) Register for maintenance of accounts including untied funds, (10) Register for water quality and sanitation, (11) Minor Ailments Register, (12) Records/Registers as per various National Health Programme guidelines (National Leprosy Eradication Programme, Revised National TB Control Programme, National Vector Borne Disease Control Programme, etc.)

It was observed that the required registers/records were not maintained or were incomplete in the selected health facilities. This also calls into question the integrity of data reported by the facilities in the HMIS. State wise details on non-maintenance of registers/records are given in **Annexure-8.6**.

PART-B

Data analysis of HMIS database provided by the Ministry

8.7 HMIS data-dump

The Ministry furnished data-dump of HMIS for service delivery for 2012-16 in August 2016 and for 2011-12 in September 2016 with the certificate that ‘the data dump shared by the Ministry for 2011-12 to 2015-16 was complete and consistent across all the financial years’. However, Audit observed that the data for 2015-16 were not available for five States/UT (**Andaman and Nicobar Islands, Andhra Pradesh, Odisha, Puducherry and Telangana**), in the Table¹⁰ analysed. In addition, the data-dump on infrastructure was missing for the period 2011-12 to 2015-2016 which was subsequently provided in February 2017. Audit analysed HMIS database for the period 2011-2016 by using Computer Assisted Audit Techniques (CAATs). Audit also compared the data provided by the Ministry with the data of facility survey conducted during Audit.

8.8 Service delivery data

The Service delivery data contains, inter alia, data on various RCH interventions viz. ANC, immunization, administration of IFA tablets etc. Comparative analysis between the data derived from HMIS database¹⁰ and similar data collected during field audit revealed substantial variations (from -911 per cent to 100 per cent) for the 11 major/significant selected RCH indicators/parameters on either side (positive as well as negative) across the years (2011-2016) countrywide (**Annexure-8.7**). Only in a few cases did the figures for both the datasets matched.

Ministry replied (December 2016) that in the district consolidated table (which was used for data analysis by audit), information of all health facilities for a particular district may not be there, as some facilities might not have started reporting in that year or the “Compile” button was not pressed to incorporate the same in the district consolidated table. Hence, the Ministry’s reply implied that the data in the District Consolidated transaction table may be under-reported. The reply of the Ministry is not tenable as the comparison of the

¹⁰ District Consolidated Table (MISCONSOLIDATED_LIVE_TRN_RAW_DATA)
Performance Audit of Reproductive and Child Health under National Rural Health Mission

data derived from the district level table in HMIS with the data collected by the States shows substantial number of instances of over-reporting also.

The Ministry also stated that the data dump provided to audit was raw data and a process/algorithm/program/application/software is run on this data dump to generate the reports which are used by the Ministry for decision making and for use by all the stakeholders. In response, audit requisitioned (December 2016) the data tables which were being used for preparation of standard reports/decision making. The Ministry provided (February 2017) a fresh data-dump with a disclaimer that “Standard Report may not match with the summary of data-dump provided because of ongoing essential activities in HMIS such as migration, upgradation of facilities, Blocks etc. as requested by States/UTs”. Thus, the data dump that was later provided by the Ministry could not be compared with the standards reports of the Ministry.

Analysis of the earlier data dump by Audit revealed instances of missing data, as mentioned earlier, even though the data dump was provided by the Ministry along with a certificate stating the said data dump was complete. The Ministry attributed this deficiency to “inadvertent error”.

8.8.1 Outliers: abnormal variations

In order to check internal data inconsistencies, common validation rules as envisaged in HMIS were referred to. Data analysis revealed that for some major RCH parameters, the achievement shown was more than hundred *per cent* in a number of instances, which was beyond normal range such as number of pregnant women who availed the benefit of ANC, immunisation, JSY etc. was more than the pregnant women registered etc., as detailed in (**Annexure-8.8**).

These instances relate to HMIS data for 2011-2016, the data for which had already been frozen by the Ministry except for 2015-16. It implies that the Ministry did not take any remedial steps to address the data discrepancies which may result in incorrect MIS reports being generated through the system.

8.8.2 Blank fields in data

Twelve test checked fields of District Consolidated Transaction Table (2011-2016), contained ‘Blank fields’ as given in **Table 8.17** below:

Table-8.17: Cases of blank fields in HMIS database

Sl. No.	Indicators	Blank fields (Out of 37,850)
1.	Total number of pregnant women Registered for ANC	54
2.	Number of pregnant women received 3 ANC check-ups during pregnancy	59
3.	Deliveries conducted at Private Institutions (Including C-Sections)	10,871
4.	Deliveries conducted at Public Institutions (Including C-Sections)	164
5.	Number of ASHAs paid JSY Incentive for deliveries conducted at accredited Private Institutions	16,164
6.	Number of ASHAs paid JSY Incentive for deliveries conducted at Public Institutions	585
7.	Number of female live births	137
8.	Number of male live births	137
9.	Total number of male and female live births	29
10.	Number of Pregnant women registered under JSY	230
11.	Total number of pregnant women given 100 IFA tablets	101

Presence of major 'Blank fields' in important fields viz. 'Deliveries conducted at Private Institutions' and 'Number of ASHAs paid JSY Incentive for deliveries conducted at accredited Private Institutions' of service deliveries renders the Ministry's key Management Information System unreliable.

8.9 Human and physical infrastructure

The database of Human and physical infrastructure contains data on availability of manpower and physical infrastructure viz. building, electricity, water, doctors, paramedical staff etc. at health facilities. Findings of data analysis on the same have been discussed below:-

8.9.1 Reporting status of health facilities

All the health facilities (DH, SDH, CHC, PHC and SC) have to report data inputs in the HMIS database. Audit noticed that 14 to 64 per cent of the health facilities were not reporting infrastructure data on HMIS for 2015-16 as given in **Table-8.18** below:

Table-8.18: Reporting status of health facilities

Sl. No.	Name of facility	Total number of facilities			Facilities not Reporting			Facilities not reporting (per cent)		
		Public	Private	Total	Public	Private	Total	Public	Private	Overall
1.	DH	1,092	175	1,267	348	161	509	32	92	40
2.	SDH	1,745	1,105	2,850	797	1,031	1,828	46	93	64
3.	CHC	6,550	5,135	11,685	1,224	4,816	6,040	19	94	52
4.	PHC	33,379	496	33,875	7,266	355	7,621	22	72	22
5.	SC	1,75,816	280	1,76,096	24,492	195	24,687	14	70	14
	Total	2,18,582	7,191	2,25,773	34,127	6,558	40,685	16	91	18

Thus, due to non-reporting by substantial number of health facilities, the MIS reports failed to present a comprehensive picture.

8.9.2 Incomplete reporting

The details of count of total entries to be filled and count of blank fields during 2015-16 are given in **Table-8.19** below:-

Table-8.19: Details of blank fields

Sl. No.	Details	DH	SDH	CHC	PHC	SC
1.	Total number of data field	2,71,955	3,06,627	16,07,139	48,94,659	1,34,38,379
2.	Number of data field left blank	32,545	32,204	1,84,939	4,53,915	11,15,211
3.	Percentage of number of blank field to total number of data field	12	11	12	9	8

It is evident from the above table that 8 to 12 *per cent* of data field were not filled up by various health facilities making the data reporting under MIS reports unreliable.

8.9.3 Unrealistic data on men-in-position

(i) Community Health Centre

IPHS provides for deployment of one Obstetrician/Gynaecologist, Paediatrician, Physician and General Surgeon each at CHC. Audit noticed that the men-in-position was abnormally high in 462 cases in 370 CHCs during 2015-16, as given in **Table-8.20** below:

Table-8.20: Discrepancy in data of Personnel

Sl. No.	Category of Personnel	Number of Personnel in position shown in database			
		2 to 4	5 to 10	More than 10	Total
1.	General Surgeon	84	11	-	95
2.	Obstetrician/ Gynaecologist	130	5	1	136
3.	Paediatrician	57	-	-	57
4.	Physician	155	19	-	174
Grand total					462

Audit further analysed that out of these 370 CHCs, 16 cases in 15 CHCs pertained to sampled CHCs. The comparison of men-in-position of 16 test checked cases revealed that in only one case, HMIS data matched with the records of the health facilities.

(ii) Primary Health Centre

IPHS provides for deployment of one medical officer for type A and two for type B, one Laboratory Technician and one Pharmacist each for PHC. Audit noticed that the men-in-position was abnormally high in 2,732 cases in 2,038 PHCs, during 2015-16, as given in **Table-8.21** below:

Table-8.21: Discrepancy in data of Personnel

Sl. No.	Category of Personnel	Number of Personnel in position shown in database			
		2 to 4	5 to 10	More than 10	Total
1.	Medical Officer	855 ¹¹	247	11	1,113
2.	Pharmacist	990	37	6	1,033
3.	Laboratory Technician	574	11	1	586
Grand Total					2,732

Audit further analysed that out of these 2,038 PHCs, 70 cases in 55 PHCs pertained to sampled PHCs. The comparison of men-in-position of 70 test checked cases revealed that only in 24 cases, HMIS data matched with the records of the health facilities.

(iii) Sub-Centre

IPHS provides for deployment of one female health worker for Type-A and two for Type-B, and one male health worker at each sub-Centre. Data analysis of HMIS revealed that 1,238 and 840 SCs respectively reported abnormally higher number of health worker (both female/male) in position against the provision during 2015-16 as given in **Table-8.22** and **Table-8.23** below:

Table-8.22: Discrepancy in data of female health workers

Sl. No.	Number of Female Health workers in position shown in database	Number of SCs	State (Number of SCs)
1.	3 to 10	1,123	Assam (77), Haryana (174), Jharkhand(160), Madhya Pradesh (77), Rajasthan (89), Uttar Pradesh (160) and 26 other States (386).
2.	11 to 20	20	Andhra Pradesh (3), Arunachal Pradesh (1), Bihar (1), Delhi (2), Haryana (1), Karnataka (2), Rajasthan (1), Tamil Nadu (2) and Uttar Pradesh (7).
3.	21-25	35	Andhra Pradesh (1), Bihar (1), Chhattisgarh (1), Delhi (2), Madhya Pradesh (1), Puducherry (1), Punjab (2) and Uttar Pradesh (26).
4.	26	21	Uttar Pradesh (21)

¹¹ Since IPHS provide for at most two Medical Officers, the figure depicts number of PHCs having three to four Medical Officers.

Sl. No.	Number of Female Health workers in position shown in database	Number of SCs	State (Number of SCs)
5.	38	1	Nagaland (1)
6.	54	36	Kerala (2) and Uttar Pradesh (34)
7.	222	1	Jammu & Kashmir (1)
8.	259	1	Uttar Pradesh (1)
Total		1,238	

Audit further analysed that out of these 1,238 PHCs, 13 SCs pertain to sampled SCs. The comparison of men-in-position of 13 test checked SCs revealed that only in three cases, HMIS data matched with the records of the health facilities.

Table-8.23: Discrepancy in data of male health workers

Sl. No.	Number of Male Health workers in position shown in database	Number of SCs	State (Number of SCs)
1.	2 to 10	769	Assam (63), Jammu and Kashmir (131), Meghalaya (32), Odisha (37), Tamil Nadu (34), Tripura (50), Uttar Pradesh (143), West Bengal (30) and 20 other States (249).
2.	11 to 14	29	Gujarat (1), Jammu and Kashmir (1), Kerala (1), Maharashtra (3), Tamil Nadu (2) and Uttar Pradesh (21).
3.	54	3	Andhra Pradesh (1), Kerala (1) and Telangana (1)
4.	100	34	Uttar Pradesh (34)
5.	111	1	Jammu & Kashmir (1)
6.	114	1	Tripura (1)
7.	154	3	Kerala (1) and Tamil Nadu(2)
Total		840	

Audit further analysed that out of these 840 SCs, 14 SCs pertain to sampled SCs. The comparison of men-in-position of 14 test checked SCs revealed that only in three cases, HMIS data matched with the records of the health facilities.

The unrealistic data on availability of human resources at different levels of health facilities reflected inadequate monitoring of data entry.

8.9.4 Comparison of HMIS data and survey sheet

Comparison of data for availability of various infrastructure facilities in CHCs, PHCs and SCs as per HMIS for 2015-16 and the data collected during the survey conducted by Audit revealed mismatch of figures, as given in **Table-8.24, Table-8.25 and Table-8.26** below:

Table-8.24: Community Health Centre

Sl. No.	Type of Service	Total Number of CHCs	Number of CHCs where the service was not available as per	
			HMIS	Survey
1.	Blood storage facility	227	186	184
2.	New-born care	227	25	29
3.	Personal computer	222	21	14
4.	Referral transport service	227	14	22
5.	Separate wards for male and female	224	28	44
6.	X-ray facility	224	82	76

Table-8.25: Primary Health Centre

Sl. No.	Type of Service	Total Number of PHCs	Number of PHCs where the service was not available as per	
			HMIS	Survey
1.	Ante natal care	471	41	69
2.	New-born care	471	153	220
3.	Operation theatre	458	271	284
4.	Personal Computer	457	199	196
5.	Separate wards for male and female	458	236	292

Table-8.26: Sub-Centres

Sl. No.	Type of Service	Total number of SCs	Number of SCs where the service was not available as per	
			HMIS	Survey
1.	Ante Natal Care	1,371	50	61
2.	Child care including immunization	1,371	51	52

It is evident from the above tables that the data of HMIS was not consistent with the results of the survey conducted by Audit.

The Ministry stated that strengthening of HMIS is an ongoing process due to inclusion of new data items as per requirement of NHM and other programmes of the Ministry. Moreover, it is the only portal which is having access to all public health facilities and provides facility wise information of about 1.96 lakh facilities. The system is bound to have some issues related to lack of registers, incomplete reporting etc. at some places. Further, lack of computerization or integrated MIS in the facilities leads to human/typographical/manual compilation errors.

Conclusion:

The primary objective of HMIS i.e., continuous flow of quality information on inputs, outputs and outcome indicators for monitoring of objectives of NRHM remained only partially fulfilled. Inconsistent data, incomplete reporting and unrealistic values in HMIS are likely to influence the decision making. Non-

