



Data Quality Audit Report

8TH ROUND

Based on the data quality audit visits in 7 districts of Uttar Pradesh during 29 March-1 April 2022

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LIST OF ABBREVIATIONS

AdRO	Additional Research Officer
ANC	Ante Natal Care
CH	Child Health
CHC	Community Health Centre
CMS	Chief Medical Superintendent
CMO	Chief Medical Officer
DH	District Hospital
DEO	Data Entry Operator
DCH	District Combined Hospital
DPM	District Program Manager
DWH	District Women Hospital
DG FW	Director General Family Welfare
DG MH	Director General Medical Health
FP	Family Planning
FRU	First Referral Unit
HEO	Health Education Officer
HM	Hospital manager
HMIS	Health Management Information System
M&E	Monitoring and Evaluation
MH	Maternal Health
MO I/c	Medical Officer In-charge
RSK	Rogi Sahayta Kendra
SHI	State Health Index
SN	Staff Nurse
JSSK	Janani Shishu Suraksha Karyakakram
UPHMIS	Uttar Pradesh Health Management Information System
UPNHM	Uttar Pradesh National Health Mission
UPTSU	Uttar Pradesh Technical Support Unit

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1. EXECUTIVE SUMMARY

Data quality audit is a supportive supervision approach to identify the data quality gap and suggest corrective action for data quality improvement. Given the same, the state data quality audit team was constituted by MD NHM in January 2018 in compliance of government order issued by the Principal Secretary in May 2017 (संख्या- 35/2017/303/पांच-9-2017-9(127)/12). Eight rounds of audits were conducted by the team in 134 district and block-level facilities (49 DWH/DCH & 85 CHCs) of 50 districts till March-April 2022 to understand the improvements in HMIS data quality and persisting gaps.

The recent audit was conducted in 21 facilities (15 block facilities and 6 DH facilities) across seven districts which are Amethi, Ballia, Bareilly, Hardoi, Jalaun, Kaushambi & Sambhal from 29th March-1st April 2022. State data audit is a quarterly activity but it could not be planned after Feb 2020 due to the Covid-19 in the state. The data audit was conducted with the help of the revised structured tool, which was done during the 6th round of data audit, comprised of 66 critical data elements covering antenatal care, delivery/newborn care & complication, family planning, child health, mortality details and hospital services. This covers all the data elements of ranking and NITI Aayog's SHI indicators with a few additional critical indicators of state priority. In total seven teams were formed for the audit which comprised of members from DGMH, DGFw, NHM and UPTSU.

In total, 24 common data elements (from DH and CHC) were common across all the rounds of audit. There has been a continuous increase in matching of portal data with source documents¹ from first to seventh round. The overall matching of 24 data elements for both CHC & DH increased from 57% in the first round (Jan 2018) to 74% in the 7th round (Feb 2020) of data audit. However, a slight decrease in data matching was observed during the 8th round which took place two years later than the 7th round. The overall matching of 24 common data elements with source document was found to be 69% in this round (8th round).

While there has been a general improvement in data quality, a few facilities and program domains continued to show data quality issues. Some of the most common reasons for data quality issues included poor and non-uniform availability of source documents (only 54% of data elements of four major domains were having a provision in registers to record the information), printing of source formats (More than one third of CHC facilities still do not have printed HMIS and UPHMIS format), and no designated nodal to review data availability and quality (14% CHC facilities did not assigned nodal to review the data and its quality).

Non-functionality of the validation committee is one of the major bottlenecks observed during the data audit. It was observed that more than one third (35%) of the visited facilities (block facility and DH) did not conduct validation meetings during the last quarter. Lack of understanding of some of

¹ Data elements reported value matched with the value recorded in the source document. Deviance within 10 percent in the value from source document has been considered as matched for all data elements except mortality (infant, child and maternal death).

the data elements (maternal and newborn complications) was also identified as one of the reasons for low data quality during the supportive supervision process with facility staff.

Training of block officials (ARO/HEO/BPM/HM/DEO), staff nurses, and ANMs emerged as one of the main factors affecting data quality. There are only two third facilities (65%) where at least two staff have received training and only one third (33%) of SNs and ANMs have received training on HMIS/UPHMIS format definition and compilation during the last one year.

Based on the gaps identified, the action plan was developed for each of the audited facilities and shared with the facility in-charge for corrective actions. The action plan includes the gaps, suggestive actionable points, the person responsible, and the timeline. The feedback meeting was also held with all the blocks and findings were shared for overall improvement in the data quality of a district.

2. BACKGROUND

The availability of good quality data is critical for any program reviews, planning and prioritization. Uttar Pradesh has developed and implemented a robust data system which provides a holistic platform to obtain all the critical data required for the identification of low performing indicators, low performing geographies and factors associated with low/high performance of indicators.

In this regard, monthly facility wise government data portals (HMIS/UPHMIS) are the primarily reliable source for data use at all levels of the health system. Thus, ensuring availability of high-quality data is the key. Additionally, the UP Health dashboard (district and block ranking based) has also been developed based on HMIS/UPHMIS data and used by the health officials at different levels for review and planning of health programs. Recognizing the criticality of reporting quality data, the state has initiated the concept of data quality audit to improve the quality of data availability under the government data system (HMIS/UPHMIS).

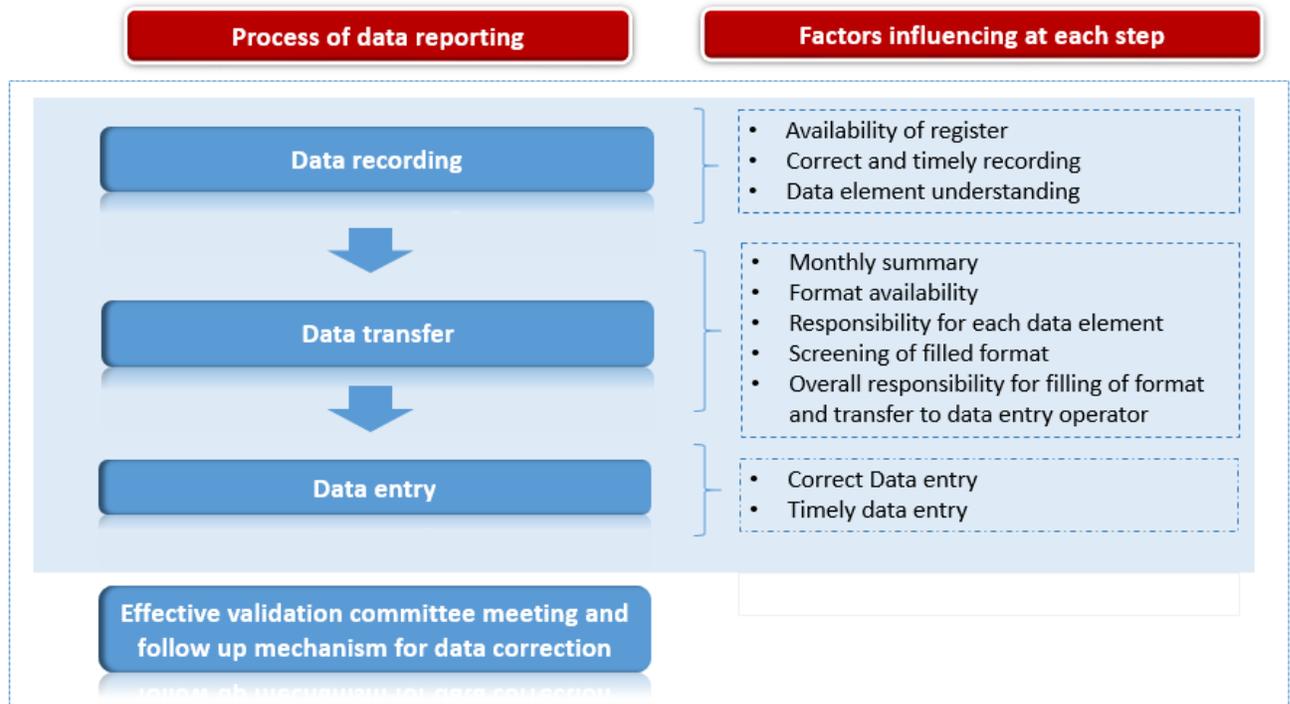
Data quality audit is a supportive supervision approach to improve the data quality of the government data system by assessment of data quality issues at the facility level and suggesting corrective actions. This process includes gap identification, joint problem-solving, handhold support and capacity building. The primarily includes validating the reported data with the source document, identifying the gaps and developing the capacity of facility staff on reporting accurate data.

The state data quality audit team was constituted in January 2018 and eight rounds of audit have been conducted by the team in 150 facilities in 50 districts till April 2022.

Data quality framework of factors affecting data quality

The complete process of correct reporting of data from service delivery to the portal can be classified into 3 steps process, a) *Data recording*, b) *Data transfer* and c) *Data entry*. There are multiple factors at each step which may affect the process to ensure the reporting of correct data. The gap in any of the components at any step may affect the reporting of quality data (*Figure 1, Data Quality Framework*)

Figure 1 Data Quality Framework



It is, therefore, important to understand the issues and challenges at each step so that effective measures could be taken to strengthen the data quality.

3. OBJECTIVES OF DATA AUDIT

The overall goal of the data audit activity was to ensure the availability of quality data for decision making. Keeping in view the issues and challenges of data quality in HMIS/UPHMIS in the state following objectives have been decided for the audit activity:

1. To validate and improve the data quality of key critical data elements
2. To assess the system level gap in the reporting of quality data
3. To assess recording and source document availability for key critical data elements

4. METHODOLOGY

The state had issued a letter (पत्रांक- SPMU/NHM/M&E/2021-21/25/8339-2) dated March 25, 2022, for data audit visits by the state team in the month of March-April 2022.

4.1 Audit area and audit team

Seven teams were constituted for audit in seven new districts comprising members from NHM, Directorate and UPTSU. The list of districts and details of the team are given below in Table 1.

Table 1: Data Quality Audit Team

Team	Team Members	Department	Date of Visit	Selected District
Team 1	Mr. Ved Prakash , ADRO	DGFW	29 th March to 01 st April, 2022	Sambhal
	Mr. Prashant Srivastava, Divisional Consultant–QA	NHM		
	Mr. Nazir Haider, M&E Specialist	UPTSU		
Team 2	Mr. Yogesh Chandra,ADRO	DGFW	29 th March to 01 st April, 2022	Amethi
	Mr. Indrajeet Singh, Consultant, RKSK	SPMU, NHM		
	Ms Yogita Kharkwal, M&E Specialist	UPTSU		
Team 3	Mr. Virendra Pratap (ARO)	RHFWTC, LKO	29 th March to 01 st April, 2022	Ballia
	Mr. Sonu Gautam, PC (M&E)	SPMU NHM		
	Dr. Prahlad, M&E Specialist	UPTSU		
Team 4	Dr. Arvind Kumar, JD (Paramedical)	DGMH	29 th March to 01 st April, 2022	Jalaun
	Mr. Manoz Sharma, ADRO	CMO office LKO		
	Moh. Ajam Khan, M&D Officer	SPMU, NHM		
	Mr. Ved Prakash, M&E Specialist	UPTSU		
Team 5	Mr. Dinesh Kumar, ADRO	CMO office LKO	29 th March to 01 st April, 2022	Bareilly
	Dr. Raees Ahmad, Tech Consultant MH	SPMU, NHM		
	Mr. Ankit, M&E Specialist	UPTSU		
Team 6	Dr. Y.K. Pathak, JD(Blindness)	DGMH	29 th March to 01 st April, 2022	Hardoi
	Mr. I.C. Verma, ADRO	CMO office LKO		
	Mr. Manish Soni, Consultant FP	SPMU NHM		
	Mr. Sourabh Roopchandani, , M&E Specialist	UPTSU		
Team 7	Dr. Vikas Singhal, JD (Communicable disease)	DGMH	29 th March to 01 st April, 2022	Kaushambi
	Mr. Uma Shankar Shukla, ADRO	DGFW		
	Dr. Raj Kumar Verma, Consultant, RI	SPMU, NHM		
	Mr. Om Prakash, M&E Specialist	UPTSU		

Seven new districts namely Amethi, Ballia, Bareilly, Hardoi, Jalaun, Kaushambi & Sambhal were constituted for the eighth round of data audit. The districts were selected based on the following criteria:

- **One district** – Random selection among top 5 in district performance ranking (Feb 2022)
- **One district**- Random selection among the bottom 5 in district performance ranking (Feb 2022)
- **Five districts** – Randomly selected

Further, two block facilities and one district hospital were chosen for the audit in each district. The block facilities were identified based on the reporting of non-zero data elements. One good performing and one poor-performing block facility were selected for the audit. District Women Hospital (DWH) or District Combined Hospital (DCH) as per availability in the district was selected. As there is no district hospital in Amethi, a higher level facility at headquarter was included for data audit. This exercise has been done by the state and the list of facilities was shared with the data audit team.

Thus, in total, 21 facilities (15 block facilities and 6 DH facilities) from 7 districts were identified and audited during the process.

Table 2: List of district hospital facilities selected for audit

Sr. No.	District	Block	Facility	Facility HMIS code	Type of facility
1	Ballia	Ballia Sadar	District Female Hospital Ballia	407264	DWH
2	Bareilly	Bareilly DHQ	District Female Hospital	429512	DWH
3	Jalaun	Jalaun DHQ	DH District Women Hospital	354432	DWH
4	Hardoi	Hardoi DHQ	District Women Hospital Hardoi	384295	DWH
5	Sambhal	Sambhal DHQ	DH District Combined Hospital	457004	DCH
6	Kaushambi	Kaushambi DHQ	District Combined Hospital	400034	DCH

Table 3: List of block facilities selected for audit.

Sr. No.	District	Block	Facility	Facility HMIS code	Type of facility
1	Amethi	Musafirkhana	CHC Musafirkhana	412106	CHC
2	Amethi	Gauriganj	CHC Gauriganj	412108	CHC
3	Amethi	Jagdishpur	CHC Jagdishpur	412107	CHC
4	Ballia	Bellhri	CHC Sonwani	407243	CHC
5	Ballia	Garwar	CHC Ratsar	412249	CHC

Sr. No.	District	Block	Facility	Facility HMIS code	Type of facility
6	Bareilly	Mudia Nawi Bux (Riccha/Damkhauda)	CHC Mudia Nawi Bux	400931	CHC
7	Bareilly	Faridpur	CHC Fareedpur	400933	CHC
8	Jalaun	Kuthound	CHC Kuthound	329826	CHC
9	Jalaun	Madhougarh	CHC Madhougarh	329853	CHC
10	Hardoi	Ahirori	CHC Ahirori	384270	CHC
11	Hardoi	Madhoganj	CHC Madhoganj	384288	CHC
12	Sambhal	Asmoli	CHC Manauta	462398	CHC
13	Sambhal	Bahjoi	CHC Bahjoi	425579	CHC
14	Kaushambi	Kara	CHC Kara	458063	CHC
15	Kaushambi	Sirthu	CHC Sirathu	400030	CHC

4.2 Process

The data quality audit is a supportive supervision approach to improve the data quality of the government data system (HMIS/ UPHMIS). This process includes hand hold support, joint problem-solving and capacity building.

The major steps to conducting the data quality audit include the following:

- **Identification of facilities** to be audited
- **Visit and conduct audit:** The audit includes the **matching of the reported data value in HMIS and UPHMIS with source documents** and identifying the reasons for identified gaps if any.
- **Preparation and sharing of an action plan** based on data quality issues identified with the facility in charge. The action plan for each of the audited facilities was developed and attached as annexure 2.
- **Feedback meeting** with all the concerns responsible for reporting.

4.3 Tool used for data audit

A structured tool comprised of 61 critical data elements was used for the eighth round of audit. It covers the following domains (*Table 4*):

Table 4 Domains covered in data quality audit checklist

#	Domain	# of data elements from HMIS and UPHMIS
1	Antenatal care	10
2	Delivery/newborn care & complication	21
3	Family planning	4
4	Child health	7

#	Domain	# of data elements from HMIS and UPHMIS
5	Mortality details	6
6	Hospital services	13
	Total	61

The data elements were selected considering indicators recommended by NITI AYOg's state health index, district/ block ranking, and current program priority.

The original tool captured information on domains like human resource, training, drugs & supply and on critical data elements. In total, there were 115 data elements. This tool was revised during 6th round of data audit after incorporating the finding of previous rounds of audit. The number of data elements in revised tool reduced to 61 and the revised tool focused more on critical data elements along with system level information and source document availability. This primarily includes format availability, validation committee, summary preparation, person responsible etc. A separate section was added to source document availability to understand the variation and availability of records across different facilities. The tool is attached as *Annexure 1*

The data quality assessment of data collected on the tool was done on four major parameters defined below:

- **% of matched-** Data elements reported matched with the value recorded in the source document. Deviance within 10 percent in the value from source document has been considered as matched for all data elements except mortality (infant, child and maternal mortality).
- **% of over reported-** Reported value of the data element is greater than the value recorded in the source document.
- **% of under-reported-** Reported value of the data element is less than the value recorded in the source document.
- **% of not able to audit-** Data elements for which the team was not able to audit source documents were not available at the facility

4.4 Data and period of audit

HMIS and UPHMIS reported data on HMIS & UPHMIS portals respectively for February 2022 were decided to be audited.

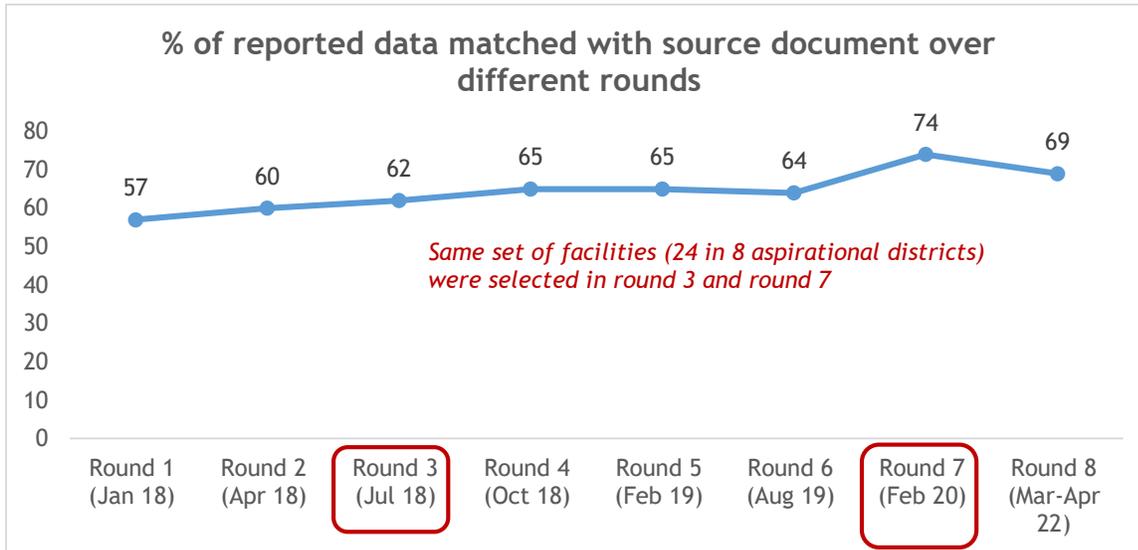
5. DATA AUDIT FINDINGS

A. Comparison over different rounds

There are 24 data elements which were common across all eight rounds and were compared to understand the change in data quality status across different rounds of data quality audit. These data

elements are spread across 7 different domains. The summary of the data audit over different rounds is given below in Fig 2:

Fig 2 Trend of matching of reported value with source document



There has been a continuous increase in matching with source documents from round first to seventh. It increased from 57% in the first round to 74% in the 7th round of data audit. However, a slight fall in matching was observed during the 8th round that was done after a gap of two years from the previous round.

B. Comparison over sixth, seventh & eighth rounds

Common data elements (49) across all CHC and DH facilities were examined. The overall matching with the source document decreased slightly from 67% in the 7th round to 64% in the 8th round but was still better than matching from the 6th round (58%). The matching was higher for data elements on delivery & outcome, mortality and newborn health. However, the matching of the reported data with the source document was low for ANC and maternal & newborn complications. The matching of data elements with source documents improved across all domains except ANC, maternal complication & delivery & its outcome.

Figure 3.1: Trend of matching with source records over different domains

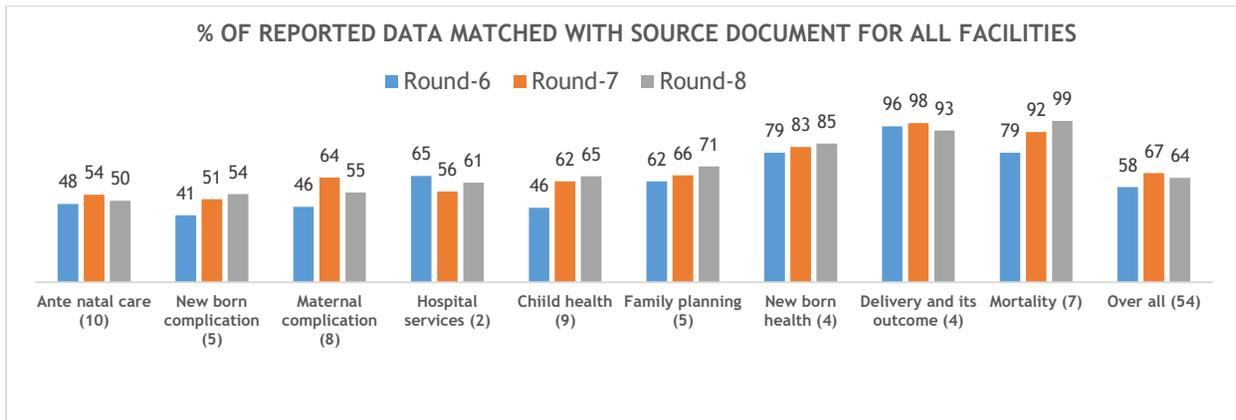


Figure 3.2: Trend of matching with source records over different domains for DH facilities

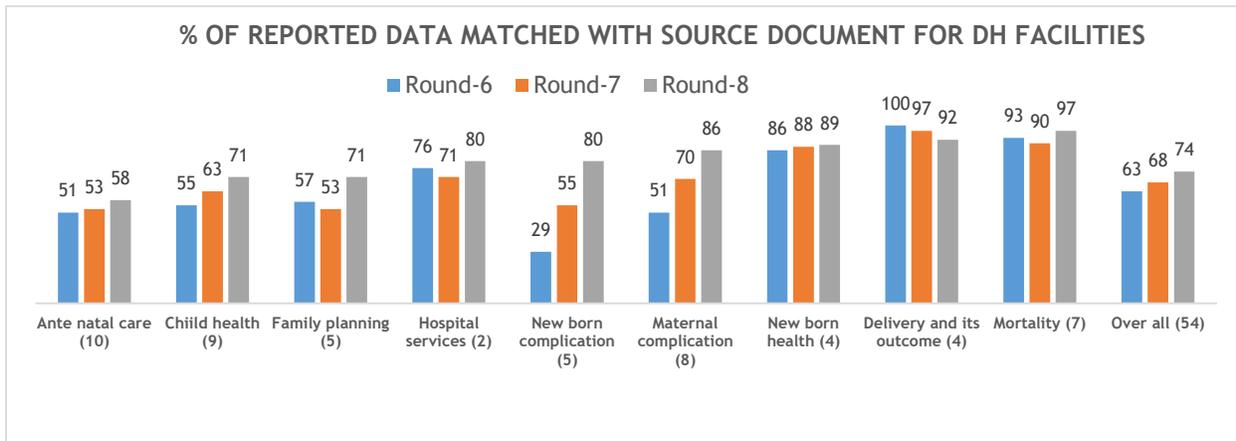
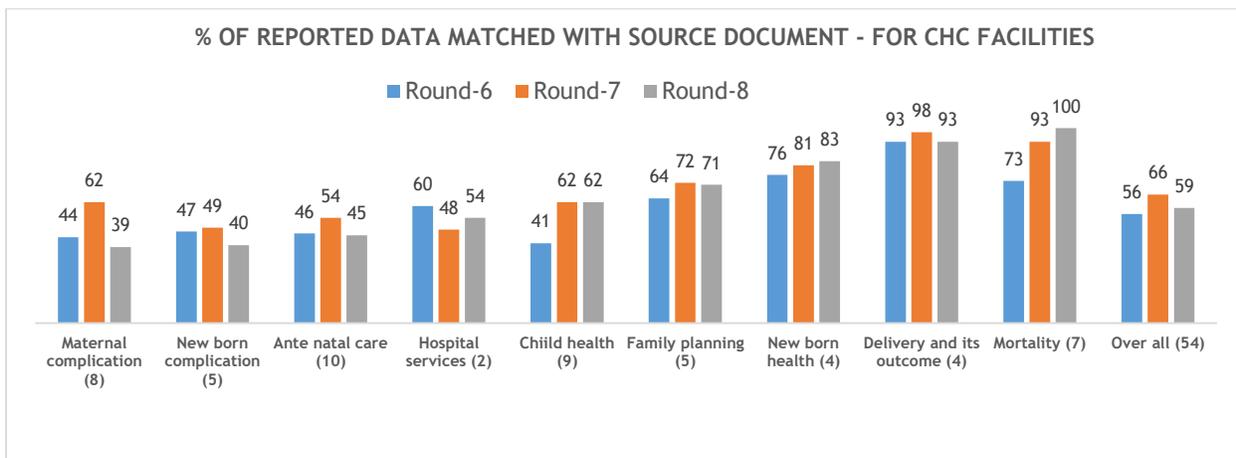


Figure 3.3: Trend of matching with source records over different domains for DH facilities



However, considerable improvements in matching data with source documents was observed in DH facilities over the last three rounds; it improved from 68% in the 7th round to 74% in the 8th round (Fig 3.1). All domains at DH have shown improvement except in the delivery & its outcome domain. The improvement in data matching across majority of the indicators in DH as compared to CHC may be attributed to more supportive supervision visits by Divisional M&E Officers (NHM) and District M&E Specialist (TSU) at DHs (50%) as compared to CHCs (29%) by the divisions (Indicator 7 in Table 6).

Besides matching, many of the data elements were also found to be over-reported and under-reported. Antenatal care and family planning are domains where some over-reporting were observed. Interestingly, the newborn complications, maternal complications and hospital services were the domains where significantly under-reporting was observed. Also, some of the data elements from antenatal care and child health domains were not even able to be audited due to the non-availability of documents at facilities. The details are given in Table 5.

Table 5 Data audit summary

Domain	% of matched with source			% of over reported			% of under-reported			% of not able to audit		
	Round-6	Round-7	Round-8	Round-6	Round-7	Round-8	Round-6	Round-7	Round-8	Round-6	Round-7	Round-8
Ante Natal Care (10)	48	54	50	15	30	21	16	12	11	20	5	19
Delivery and Outcome (4)	96	98	93	0	1	2	4	1	5	0	0	0
Maternal Complication (7)	46	64	55	23	12	13	27	24	32	3	0	0
Newborn Health (3)	79	83	85	11	7	12	5	10	2	5	0	2
Newborn Complication (5)	41	51	54	21	8	14	30	40	32	8	1	0
Child Health (7)	46	62	65	4	17	6	5	2	10	46	18	19
Family Planning (4)	62	66	71	20	18	18	8	14	6	10	3	5
Hospital Services (3)	65	56	61	6	19	7	21	21	26	8	4	6
Mortality (6)	79	92	99	1	4	0	5	3	1	15	1	0
Over All (49)	58	67	64	12	15	10	14	14	13	15	4	12

C. Assessment of process related gaps

There are many factors that affect the reporting of quality data (*Figure 1, Data quality framework*). It is essential to have these components in place at a facility for reporting quality data. The revised checklist also captured the different factors (*availability of correct format, validation committee meeting, nodal person for data reporting, training etc*) which can affect the data quality of the facility. System-level gaps over the last three rounds are given in Table 6.

Table 6: Percentage of facility reported system-level gap over six, seven & eight rounds of data audit

S.no.	Particulars	Round-6 (N=21)	Round-7 (N=24)	Round-8 (N=20)
1	% of facility with appropriate printed HMIS format	67	88	75
2	% of facility with appropriate printed UPHMIS format	62	75	70
3	% of facilities where a nodal is assigned to review the data and its quality	90	83	90
4	Training on HMIS/UPHMIS during last one year			
4.1	% of facilities where at least two staff among ARO/HEO/BPM/HM/DEO have received training on HMIS/UPHMIS format definition and compilation	29	58	65
4.2	% of SN/ANM trained on HMIS/UPHMIS format definition	37	38	33
5	Last validation meeting conducted			
5.1	% of facilities where VCM held in last quarter including current month	62	79	65
5.2	% of facilities where VCM never held	14	4	0
6	Use of HMIS & UPHMIS			
6.1	% of facilities where facility staff was comfortable using two or more modules of HMIS & UPHMIS (<i>HMIS standard & live report download/data quality app/Excel import/Report download-UPHMIS customized report/Pivot table</i>) (Yes/No)	81	88	80
7	% of facilities where any data quality supportive supervision visit/audit done in the past six months by district, division or state officials (Yes/No)	43	21	35
7.1	DH	43	25	50
7.2	CHC	43	19	29

C.1 Format availability

Availability of correct format is essential at the facility to collect the required information. A majority of the facilities have appropriate printed HMIS and UPHMIS formats. A slight fall in the availability of format has been observed in the current round compared to the previous round. One-fourth of the

facilities still do not have printed HMIS formats and more than one fourth (30%) percent haven't printed UPHMIS format.

C.2 Nodal to review the data and its quality

Considerable improvement has been observed for the assignment of a nodal to review the data & its quality. But there are still 10% of facilities that have not assigned a nodal. BPM/ARO at block facility and Hospital manager at district hospital are working as data nodal at a majority of the facilities.

C.3 Validation committee meeting

The validation committee was constituted to validate the reported data and ensure the quality of reported data. The validation committee meeting is to be held monthly. However, it was observed that one-third of the facilities haven't conducted the meeting during last quarter.

C.4 Training on HMIS/UPHMIS

There has been considerable improvement in the training of block officials but concerns for SNs & ANMs persist. Two third of block officials and only one-third of SNs and ANMs have received training on HMIS/UPHMIS format definition and compilation during the last one year.

C.5 Skill to use portal

The ability to use different modules especially downloading *HMIS standard & live reports from the HMIS portal, using data quality application, Excel import, Report download-UPHMIS customized report and Pivot table on UPHMIS portal* were observed by the demonstration by Hospital manager/BPM and DEO. A slight fall has been observed in the skill compared to the previous round. Hospital managers/BPM and DEO are comfortable using two or more modules of HMIS & UPHMIS in 80 percent of facilities. In the case of three or more modules, the Hospital manager/BPM and DEO are comfortable to use only 60% of the facilities during the eighth round of data audit.

C.6 Data quality supportive supervision visit/audit

There has been one of the recommendations based on data audit in almost all rounds to conduct data quality supportive supervision by the district team to support block facilities. The support by the district/division/state team remained poor, however, it improved in the current round (35%) compared to the last round (21%). Only one-third of facilities (35%) have been supported by any data quality visit.

D. Source documents availability for the recording of data elements

The availability of registers with the provision of recording of information is the base for reporting accurate information every month. Besides the audit of 61 data elements, the recording provision of 4 critical domains (*ANC, Delivery, Family Planning, Child Health*) with the availability of different types of registers in the facility were also assessed during the audit (*Table 7 & 8*). The average number of registers remained almost the same at DH and CHC over the sixth, seventh & eighth rounds, however, high variations have been observed across same type of facilities in the last three rounds across all the

domains. Also, about half of the registers available at the facility were prepared manually and frequently used across all domains. The average number of source documents by facility type and by type of register over the last three rounds are given in Tables 8 & 9.

Table 7: Source document availability over the last three rounds by type of facility

Domain	Average number of source documents (printed & manual both) (Min-Max) (N=24)					
	DH			CHC		
	R-6	R-7	R-8	R-6	R-7	R-8
Ante natal care	4(1-4)	4(2-5)	4(2-5)	3(0-6)	3(1-5)	3(1-4)
Delivery/Newborn care & complications	9(4-12)	10(8-13)	11(7-13)	7(3-12)	9(5-13)	7(4-11)
Family planning	8(5-11)	6(4-8)	7(3-9)	6(0-11)	5(2-8)	6(2-8)
Child health	3(0-3)	2(0-3)	1(0-3)	2(0-3)	2(0-3)	1(0-3)

Table 8: Source document availability over the last three rounds by type of register

Domain	Average number of source documents (printed & manual both and manual only) (Min-Max) (N=24)					
	All (Printed & manual)			Manual only		
	R-6	R-7	R-8	R-6	R-7	R-8
Ante natal care	3(0-8)	3 (1-5)	3(1-5)	2(0-7)	1(0-4)	2(0-4)
Delivery/Newborn care & complications	8(3-12)	9(5-13)	8(4-13)	2(0-7)	4(0-10)	4(0-8)
Family planning	7(0-10)	6(2-8)	6(2-9)	1(0-10)	1(0-4)	1(0-6)
Child health	2(0-3)	2(0-3)	1(0-3)	1(0-3)	1(0-3)	1(0-2)

Four major domains are captured through 217 data elements from the monthly reporting formats of HMIS and UPHMIS. The recording of these data elements has been assessed by observing the presence of source documents only. Data captured by type of facility is given in Table 9. There has been considerable improvement in the capture of data elements through records from 31% during the sixth round to 54% during the seventh round and it sustained till the eighth round. This improvement has been across all four domains. More than half (54%) of the data elements are currently recorded by the audited facilities. This ranges from 34% of child health (out of 80 data elements) to 74% of delivery and complication (out of 64 data elements) related information during the eighth round. Still, there are a considerable number of data elements across different domains to be captured.

Table 9: Data elements captured at the facility

Domain (# of data elements)	% of data elements recorded (N=24)								
	DH			CHC			Total		
	R-6	R-7	R-8	R-6	R-7	R-8	R-6	R-7	R-8
Ante natal care (37)	29	66	62	32	52	49	31	56	54
Delivery/Newborn care & complications (64)	49	80	80	37	61	72	41	67	74
Family planning (36)	39	81	56	40	58	52	40	65	53
Child health (80)	17	36	45	11	23	31	13	27	34
Total	34	66	60	30	49	51	31	54	54

The facility wise gaps and action plan are annexed as *Annexure 2*.

6. MAJOR CHALLENGES

The challenges found in eight round of audit were almost same as observed during the last round. However, in the recent time, the program priority of district, block and DH facilities shifted towards Covid-19 management since the last round of audit conducted in Feb 2020. The services of DWH/DCH were less affected as compared to CHCs during COVID. It not only hampered the record keeping at CHCs but also the TSU Nurse mentors moved from CHC to DH during covid which might be resulting into a dip in data matching. During this period, supportive supervision visits could not be routinely planned by division and state officials which also resulted into the marginal dip of the data matching levels from the previous rounds.

In addition, following challenges were observed by the team during data audit:

- a. **Non-functional validation committee meeting:** The validation committee was constituted to validate the reported data and ensure the quality of reported data at the block, DH & district levels. Facilities during the eighth round have shown a fall in validation committee meetings; it was observed that one third (35%) of the visited facilities (block facility and DH) did not conduct validation meetings during the last quarter compared to one fifth (21%) during the previous audit. The majority of the blocks where validation meeting took place, it was not as per the guideline. The following issues were observed while interacting with the committee members:
 - i. Validation committee meetings were not conducted regularly as per norms.
 - ii. No focus on key data elements related to ranking, NITI AYOOG and hospital performance in the meeting

iii. No clear action plan was not developed and followed up.

- b. Understanding issue with some data elements:** While data audit it came to notice that there is an understanding issue for the reporting ANC data elements specially 4ANC & 4HB, and data elements on maternal & newborn complications and full immunization. Training of service delivery staff may be a major reason as two-thirds of SNs & ANMs are yet to receive training on HMIS & UPHMIS format reporting.
- c. Absence of preparation of monthly summary in a register:** HMIS and UPHMIS are the two monthly reporting portals which require a monthly compilation of information from the source documents. Child health, OPD and IPD were the domains where a monthly summary was not prepared at the majority of the facility. However, it was also observed that monthly summary preparation was usually less across most of the domains. The absence of a monthly summary leads to wrong or blank reporting of the services provided by the facilities.
- d. Data element-wise accountability of staff is missing:** There are 317 data elements in HMIS format now and almost the same in UPHMIS format. There are many reporting points in a facility (PHC/CHC/DH). To ensure complete reporting all staff are supposed to share the information such as LT to share lab information, SN to share delivery & newborn related data elements, MO to share OPD related details and so on. However, many of the staff are not aware of regarding reporting. Therefore, the completeness of the format is affected.
- e. Non-uniform and non-availability of source documents (registers):** Correct and optimal recording of individual information in the register is the base for any reporting. The correct recording involves the availability of source documents and having a provision to record all the information supposed to be reported without any duplication. The non-uniform and unavailability of source documents were observed as the major bottleneck for reporting quality data. There was no provision for recording around half (46%) of the data elements (in four major domains) of HMIS/UPHMIS which were supposed to be reported by the facilities. This varied significantly for different domains and facilities but the overall level remained low across all the domains (34% of recording provision in child health to 54% in ante-natal care) during the eighth round of data audit also.

Besides this, a huge disparity in the available number of registers was also observed among different facilities. Also, about 50% of the registers were manually prepared by facility staff which had duplicate information and added a burden to the data capturing.

7. SUGGESTIVE SOLUTIONS

a. State-level data quality review meeting with divisional M&E hub

The validation committee was constituted to validate the reported data and ensure the quality of reported data. The state office has also issued a guideline to conduct the meeting at block, district and DH.

A quarterly state-level data quality review meeting can be a good platform to review the data quality of the state with divisional M&E hub and their accountability can also be established.

b. Data element-wise accountability of staff

Data element-wise accountability of staff need to be fixed and verified by MOIC at the block and by CMS at the DH. A suggestive in-charge & source document for all data fields in HMIS & UPHMIS monthly reporting format at DH & CHC has been attached as *Annexure-3*.

c. Scale-up of data quality audit (data quality supportive supervision) at division level by divisional M&E hub

It is important to have supportive supervision visits of the districts by divisional M&E for continuous improvement in data quality. The divisional M&E officer must build the capacity of district (DPM/DDM/HMIS operator/Hospital Manager) and block-level staff (BPM/DEO/Nurse mentor) to analyze and report quality data. It is equally important to prioritise the facilities/blocks by the divisional M&E officers. This prioritization can be based on the identified gaps through data analysis. The continuous support by the divisional M&E hub will also strengthen the validation committee meeting at the district and block levels.

d. Monthly summary of reporting data elements in the record

All reporting staff must prepare a monthly summary for reporting data elements on the record. It shows accountability for reporting data elements.

e. Standardization of source documents

The availability of non-uniform registers causes a lot of burden on facility staff which further leads to duplication of their efforts too. There is a need to review the available registers and recommend a standard register to fulfil all the program need based on the findings over the last three rounds.

f. Promoting enhance data use: Increased data use leads to improved data quality. The district must be skilled to analyse the data available in the district for tracking the progress of different health schemes/programs for corrective actions on time. NHM M&E officers and TSU M&E specialist at division can capacitate the district and block for the data analysis which may lead correct reporting and data use in the district.

GLIMPSES OF DATA AUDIT

Picture 1: Feedback meeting on data quality audit at CMO office, Jalaun



Picture 2: Data Quality Audit at CHC Ratsar, Garwar Block, Ballia



Picture 3: Feedback meeting on data quality findings with CMS, Sambhal



Picture 4: Data quality audit at CHC Kara, Kaushambi

