

Chapter-5

Maternity Services

5 Maternity Services

Maternal Mortality Rate (MMR) and Infant Mortality Rate (IMR)⁶⁸ are important indicators of the quality of maternity services available. National Family Health Survey (NFHS)-4 (2015-16) had reported that both MMR and IMR were higher for Uttar Pradesh as compared to the national average. The major causes of maternal deaths have been identified as Anaemia, Haemorrhage (both Ante and Post-Partum), Toxemia (Hypertension during pregnancy), Obstructed Labour, Puerperal Sepsis (Infections after delivery) and unsafe Abortions.

Antenatal care (ANC), Intra-partum care or delivery care (IPC) and Postnatal care (PNC) are the major components of facility based maternity services. ANC is the systemic supervision of women during pregnancy to monitor the progress of foetal growth and to ascertain the well-being of the mother and the foetus. Under IPC, interventions for safe delivery in labour room and operation theatre are performed. PNC includes medical care of the mother and newborn after delivery of the child especially during the 48 hours post-delivery, which are considered critical.

Norms for provisioning of various maternal health services and resources, *viz.*, human resources, drugs, consumables and equipment for different levels of hospitals and CHCs have been specified in Maternal and Neonatal Health Toolkit 2013 (MNH Toolkit) and Guidelines of *Janani Shishu Suraksha Karyakram* (JSSK), prescribed by the GoI for delivery of quality maternal health services. Separate norms for the CHCs which were upgraded to First Referral Units (FRU-CHCs) have also been prescribed to equip them for providing delivery of emergency obstetric care to pregnant women with complications.

However, scrutiny of records in the test-checked 10 DWHs/JHs⁶⁹ (hospitals) and 22 CHCs, including 10 FRU-CHCs⁷⁰, in the Performance Audit disclosed serious deficiencies in resource management and clinical efficiency, as discussed in the succeeding paragraphs:

5.1. Antenatal Care

ANC involves general and abdominal examination⁷¹ and laboratory investigations to monitor pregnancies, management of complications, such as Reproductive Tract Infection (RTI)/Sexually Transmitted Infection (STI) and comprehensive abortion care.

⁶⁸ Maternal Mortality Rate (MMR) is the number of deaths per 100,000 live births due to maternal causes. Infant mortality rate (IMR) is the number of deaths of infants (under one year) per 1,000 live births.

⁶⁹ DWHs, JHs and CHCs provide maternity services.

⁷⁰ Kheragarh, Agra; Handia, Allahabad; Pachperwa, Balrampur; Campiarganj, Pali and Pipraich, Gorakhpur; Gosaiganj, Mall and Sarojini Nagar, Lucknow; Deoband, Saharanpur

⁷¹ Weight measure, blood pressure, respiratory rate, check for pallor and oedema, abdominal palpation for foetal growth, foetal lie and auscultation of Foetal Heart Sound (FHS) *etc.*

5.1.1. ANC check-ups of pregnant women

ANC Guidelines stipulate that every pregnant woman should undergo general and abdominal examinations during each ANC visit. ANC check-ups of pregnant women are primarily conducted by Auxiliary Nurse Midwives (ANMs) and in case of any sign of complication, the pregnant women should be referred to CHC or FRU-CHC, according to the stages of pregnancy and complication, for treatment by the medical officer and gynaecologist respectively.

Audit, however, observed that against the provision of MNH Toolkit, in 09 FRU-CHCs⁷² out of the 10 test-checked, a gynaecologist was not deployed during 20 to 100 *per cent* of the sampled period. This included three FRU-CHCs⁷³ where a gynaecologist was not deployed during the entire test-checked period. In the absence/intermittent availability of a gynaecologist at these FRU-CHCs, the pregnant women remained deprived from obtaining specialised ANC care. In view of the high percentage of pregnancy related complications, such as haemorrhage, hypertension or fits and unsafe abortions, ANC by specialist doctors had significance for correct diagnosis and appropriate treatment.

The Government (May 2019) replied that quality ANC services were the first priority of the Department, and measures such as walk in interviews for hiring of specialist doctors, adoption of Bid-Model selection process, *etc.*, were being taken to address the problem of non-availability of gynaecologists at FRU-CHCs.

However, despite the efforts stated to have been made by the Government, the test-checked FRU-CHCs suffered due to suboptimal/ non-deployment of a gynaecologist who is the bed rock for delivering quality ANC services.

Pathological investigations

ANC Guidelines prescribe provision of services for conducting six pathological investigations at CHCs. These tests were to be prescribed, depending upon the condition of pregnancy during ANC visits at CHCs to identify pregnancy related complications.

Audit observed that only 06 CHCs out of the 22 test-checked had the facility for conducting all six prescribed pathological investigations but these were available intermittently⁷⁴ during 2013-18. Investigations which were not carried out in CHCs and their impact are summarised in **Table 24**.

⁷² Gynaecologist was available at FRU-CHC, Handia, Allahabad during the sampled period

⁷³ Kheragarh, Agra, Pachperwa, Balrampur and Pali, Gorakhpur

⁷⁴ CHC: Kheragarh, Agra (60 *per cent*), Gaisandi, Balrampur (20 *per cent*), Pali, Gorakhpur (40 *per cent*), Gosaiganj, Lucknow (60 *per cent*) and Mall, Lucknow (60 *per cent*); figures in per cent shows percentage of test-checked period during which pathological investigation facility was not available.

Table 24: Investigations not carried out in CHCs (2013-18)

Name of pathological investigation	No. of CHCs in which facility was not available (test-checked 22)	Period (in <i>per cent</i>) during which facility not available	Possible impact
Blood group (including Rh factor) test	03	80 to 100 %	May lead to delay in blood transfusion in case of haemorrhage and improper management of Rh negative pregnancy.
VDRL ⁷⁵ /RPR ⁷⁶ test	09	20 to 100 %	Non-detection of Syphilis, which may lead to miscarriage, stillbirth and neo-natal deaths.
HIV ⁷⁷ test	13	20 to 100 %	Non-detection of HIV status of mother during ANC may lead to transmission of infection to the foetus.
Rapid malaria test	11	40 to 100 %	May lead to maternal anaemia, foetal loss, premature delivery, intrauterine growth retardation, and delivery of low birth-weight infants.
Blood sugar test	06	20 to 100 %	Non-detection of gestational diabetes, which may lead to adverse pregnancy outcomes.
HBsAg ⁷⁸ test	15	20 to 100 %	May lead to not providing prescribed vaccine to newborn within 7 hours of birth to save the life of newborn from hepatitis B infection

(Source: Test-checked CHCs)

Thus, pregnant women visiting CHCs for ANCs remained deprived of prompt diagnosis and evidence based treatment.

The Government replied that steps have been taken to conduct the prescribed pathological investigations in the CHCs. However, the situational analysis of poor availability of the facility of prescribed pathology investigations in a large number of test-checked CHCs put into question the effectiveness of the stated measures and underlined the need for high-level action with a sense of urgency to improve pathology services, which are pivotal to maternal and newborn health.

5.1.2. Management of RTI/STI

In the hospitals/CHCs, where VDRL/RPR investigation facilities were available to detect RTI/STI, there were shortages of drugs against the prescribed requirement of 13 types of drugs for the treatment of RTI/STI cases.

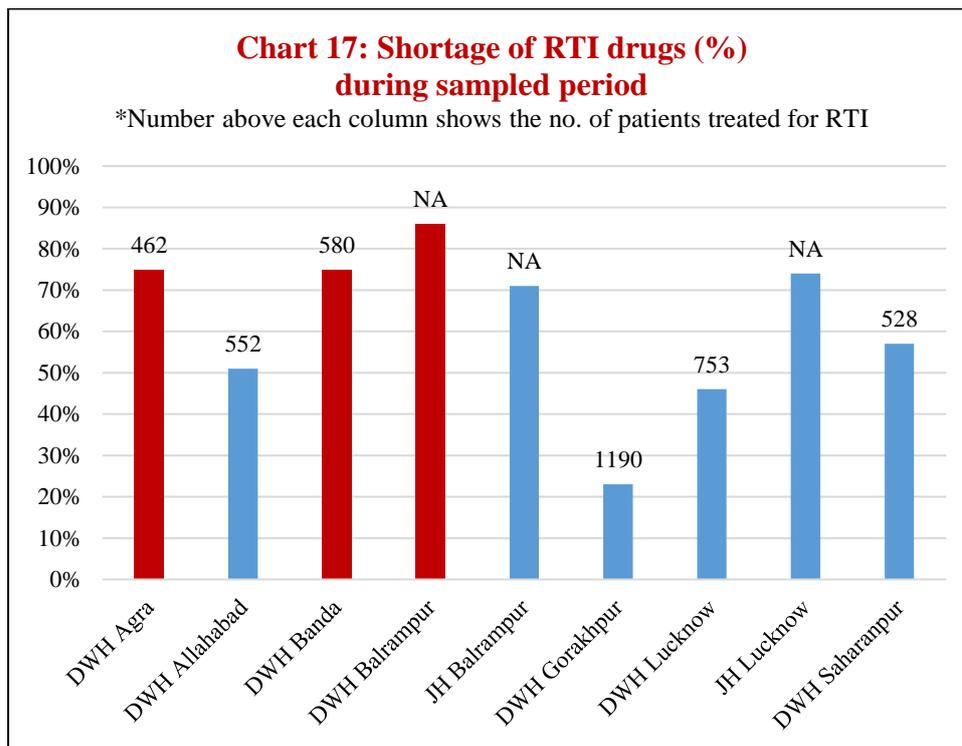
⁷⁵ Venereal Disease Research Laboratory

⁷⁶ Rapid Plasma Reagin

⁷⁷ Human Immuno deficiency Virus

⁷⁸ Hepatitis B Surface Antigen

Audit observed that 4,065 RTI patients were provided treatment during the sampled period in 09 hospitals⁷⁹ out of the 10 test-checked, wherein non-availability of RTI/STI drugs was as shown in **Chart 17**.



(Source: Test-checked hospitals)

Further, in respect of CHCs, the highest shortages of prescribed drugs during the sampled period were noticed in Gaisandi, Balrampur (97 per cent), Nagal, Saharanpur (92 per cent), Pachperwa, Balrampur (86 per cent), Kheragarh, Agra (85 per cent), Kamasin, Banda (78 per cent), and Behat, Saharanpur (75 per cent). It was also noticed that during the sampled period, 768 patients were provided treatment for RTI in CHC Pipraich, Gorakhpur, while the average shortage of prescribed drugs was 18 per cent. The remaining CHCs did not maintain records of RTI/STI cases, due to which the number of patients who suffered for want of required RTI drugs could not be ascertained in audit.

Absence of essential drugs for the management of RTI/STI in the hospitals/CHCs was indicative of poor management of RTI cases, potentially having a serious impact over the pregnancy outcomes leading to miscarriage, stillbirths and neonatal deaths.

The State Government did not furnish a reply in this regard.

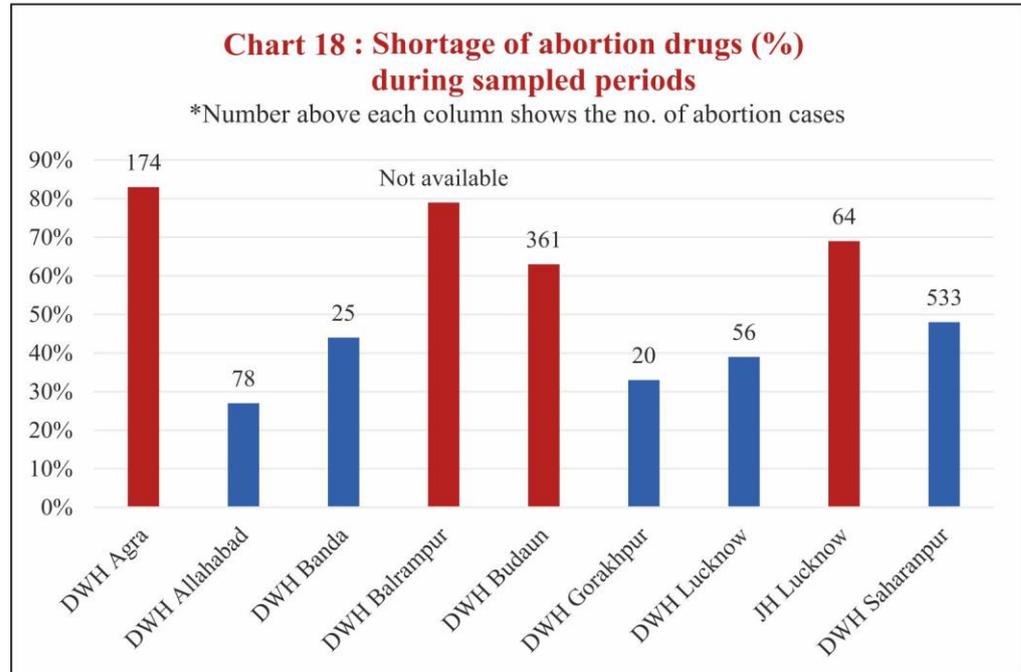
5.1.3. Comprehensive abortion care

Unsafe abortions due to pregnancy complications also contribute to maternal morbidity and mortality. MNH Toolkit prescribes the availability of Comprehensive Abortion Care (CAC) services at each hospital/CHC with

⁷⁹ DWH Budaun did not provide information.

deployment of MTP-trained⁸⁰ medical officer and availability of essential drugs.

Audit observed that out of the test-checked 10 hospitals and 22 CHCs, CAC facility was not available in JH Balrampur and 19 CHCs for want of medical officers having expertise in providing CAC. In 09 hospitals⁸¹ and 03 CHCs where CAC facility was available, the full range of 15 essential drugs was not available, falling short by 07 to 71 *per cent* in the CHCs⁸² and 27 to 83 *per cent* in the hospitals. Audit also observed that 03 CHCs did not maintain the records relating to the number of abortion cases dealt by them. In respect of hospitals, the details are given in **Chart 18**.



(Source: Test-checked hospitals)

Thus, non-availability of CAC services in the 19 test-checked CHCs indicated that access to this important maternity service was not available to the rural public. In respect of hospitals, as shown above, at least 1,311 abortions were done without full availability of essential drugs, implying that either the quality of CAC services was compromised or the patients were compelled to buy the required drugs from outside.

The State Government replied that CAC services were being improved by imparting the required training to the medical officers and efforts were being made to deploy medical officer of having expertise in CAC care to activate CAC services in CHCs and DWHs. Non-availability of CAC services in large number of CHCs (19 out of 22 test-checked), however, indicated the need for a more purposeful approach to ensure CAC services in all hospitals and CHCs.

⁸⁰ MTP – Medical Termination of Pregnancy

⁸¹ CAC service was not available in JH Lucknow during May 2013 and November 2015.

⁸² Kheragarh, Agra (71 *per cent*), Handia, Allahabad (07 *per cent*) and Deoband, Saharanpur (64 *per cent*)

5.2. Intra-partum care

Intra-partum Care (IPC) includes care of pregnant woman during intra-partum period (the time period spanning childbirth from the onset of labour). Proper care during labour saves not only mothers and their newborn babies, but also prevents stillbirths, neonatal deaths and other complications.

The quality of IPC is largely affected by availability of essential resources and clinical efficiency of the medical and paramedical staff. Specific audit observations on IPC have been discussed in the succeeding paragraphs:

5.2.1. Availability of resources

MNH Toolkit prescribes 23 drugs, 20 consumables, 15 skilled personnel⁸³ and 28 equipment⁸⁴ for maternity services at CHCs, FRU-CHCs and hospitals. Details of shortages of these essential resources are summarised in **Table 25**.

Positive feature

Community Health Centres Mall, Lucknow and Nagal, Saharanpur had all prescribed seven types of human resources and 20 types of essential consumables respectively for maternity services.

Table 25: Availability of essential resources during 2013-18

Hospital/CHC	Resources required (in number)	No. of hospitals/CHCs with per cent shortfall of					No. of test-checked hospitals not furnishing information
		No shortfall	1 to 25%	26 to 50%	51 to 75%	76 to 100%	
Human resources							
Hospitals	15	0	3	7	0	0	0
FRU-CHCs	15	0	0	5	5	0	0
CHCs	7	1	4	6	1	0	0
Drugs							
Hospitals	23	0	2	0	7	1	0
FRU-CHCs	23	0	0	8	2	0	0
CHCs	23	0	1	4	6	0	1
Consumables⁸⁵							
Hospitals	20	0	6	3	0	0	1
FRU-CHCs	20	1	0	5	4	0	0
CHCs	20	0	3	7	2	0	0
Equipment							
Hospitals	28	0	2	5	3	0	0
FRU-CHCs	28	0	0	5	5	0	0
CHCs	21	0	1	10	0	0	1

(Source: Test-checked hospitals/CHCs)

⁸³ Seven categories of manpower for CHCs

⁸⁴ 21 types of equipment for CHCs

⁸⁵ Pertains to 2017-18 only

5.2.1.1. Essential drugs

Audit scrutiny revealed that average non-availability of essential drugs during the sampled period varied from 21 to 88 *per cent* in hospitals and 20 to 69 *per cent* in respect of CHCs. Major shortfalls (more than 50 *per cent*) were in DWHs- Agra, Allahabad, Balrampur, Banda, Budaun, Saharanpur and JHs Balrampur and Lucknow, and CHCs- Baroli Ahir, Jaitpur Kalan and Kheragarh in Agra, Naraini and Kamasin in Banda, Pali in Gorakhpur and Sahaswan and Samrer in Budaun.

Even the vital drugs for maternity care such as Ringer Lactate, Calcium Gluconate, Oxytocin and Misoprostol were out of stock in 04 to 10 hospitals and 09 to 20 CHCs during 20 to 100 *per cent* of the sampled period. It is pertinent to note that Oxytocin and Misoprostol are used as Uterotonic drugs during the process of labour for various indications to induce and/or augment uterine contractions and also to prevent and control postpartum haemorrhage, which is one of the major causes of maternal mortality. Further, Ringer Lactate solution is used for fluid replenishment after blood loss and Calcium Gluconate is used to treat conditions arising from calcium deficiency in pregnancy.

Thus, shortages in critical drugs during majority of the sampled period compromised the ability of the hospitals to provide emergency and critical care in maternity cases.

The Government replied that funds had been made available to all the concerned health facilities to ensure the availability of essential drugs including Uterotonic drugs as per their demands. Reply of the Government was flawed and glossed over the actual evidence which showed that none of the test-checked hospitals sent the details of consumption and demand of drugs, as was required in the Government Order of October 2006⁸⁶, to the DGMH for release of funds.

5.2.1.2. Essential consumables

Scrutiny of records revealed that the following essential consumables were not available: draw sheets (in 04 hospitals and 16 CHCs), cord clamps (in 03 CHCs), baby wrapping sheets (in 05 hospitals and 18 CHCs), Nasogastric tube (in 06 hospitals and 17 CHCs) and chromic catgut "0" (in 03 hospitals and 10 CHCs), which were required for delivery and other maternity services. This adversely impacted the achievement of the objective of providing a clean and safe environment for mother and newborn care in the labour room and wards.

The Government replied that funds were provided to all the districts both under State budget and NHM to ensure availability of all essential consumables. The Government reply was not convincing as none of the test-checked hospitals carried out a gap analysis and sent the demand for allotment of funds according to actual needs.

⁸⁶ As order of October 2006, the CMOs and CMSs were to send the details of consumption of drugs to DGMH on the basis of which DGMH was to allocate funds to them.

5.2.1.3 Essential human resources: Analysis of availability of essential human resources disclosed the following:

- Average non-availability of essential human resources required for the delivery of maternity services ranged between 13 and 47 *per cent* in hospitals, 35 and 64 *per cent* in FRU-CHCs, and 14 and 51 *per cent* in CHCs test-checked⁸⁷ during the sampled period.
- Major shortfalls were in DWHs Balrampur (44 *per cent*) and Banda (40 *per cent*), JH Balrampur (40 *per cent*), FRU-CHCs Pali, Gorakhpur (64 *per cent*), Kheragarh, Agra (60 *per cent*) and Pachperwa, Balrampur (59 *per cent*), CHCs Kamasin, Banda (51 *per cent*) and Samrer, Budaun (49 *per cent*).
- Gynaecologists for specialised maternity care were not deployed in JH Balrampur and DWH Banda during 20 to 80 *per cent* of the sampled period and in FRU-CHCs Kheragarh, Agra, Pachperwa, Balrampur, Campiarganj Pipraich and Pali, Gorakhpur, Gosaiganj, Sarojini Nagar and Mall, Lucknow and Deoband, Saharanpur during 20 to 100 *per cent* of the sampled period.
- ANMs, whose services are critical for the delivery of maternity services, were not deployed in CHCs Naraini, Banda; Samrer, Budaun and Behat, Saharanpur during the sampled period.
- Deployment of nurses in the test-checked 09 hospitals⁸⁸ to deal with delivery cases during the sampled period (2013-18) was as shown in **Table 26**.

Table 26: Average no. of deliveries dealt by a nurse per shift per day

Hospital	Average number of deliveries dealt by a nurse per day		
	1st shift (8 am to 2 pm)	2nd shift (2 pm to 10 pm)	3rd shift (10 pm to 8 am)
DWH Agra	31	61	61
DWH Allahabad	3	6	6
DWH Balrampur	7	9	9
JH Balrampur	6	6	6
DWH Banda	16	16	16
DWH Gorakhpur	21	21	21
DWH Lucknow	15	35	34
JH Lucknow	7	9	9
DWH Saharanpur	12	12	41

(Source: Test-checked hospitals)

Thus, the situation was particularly grim in DWHs Agra and Lucknow. The corresponding figures for FRU-CHCs ranged between 03 (Sarojini Nagar, Lucknow) and 12 (Campiarganj, Gorakhpur) and in respect of the remaining CHCs⁸⁹, on an average a nurse cared for 04 (Behat, Saharanpur) to 15

⁸⁷ In CHC Nagal all types of prescribed human resources were available.

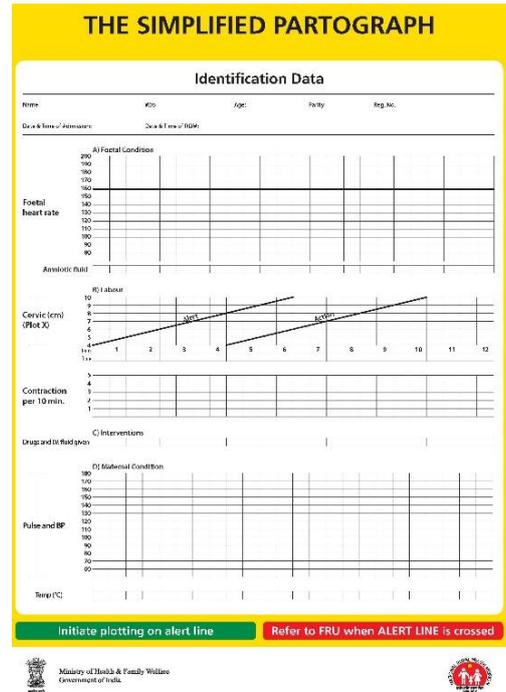
⁸⁸ DWH Budaun did not provide information.

⁸⁹ CHCs Asafpur, Sahaswan and Samrer of Budaun did not provide information.

(Naraini, Banda) delivery cases in a day. It was also observed that the ratio of nurses to delivery cases was higher in second and third shifts as compared to the first shift.

Shortage of key resources in the hospitals was indicative of lack of capability of the hospitals to manage the pregnancy related complications, ensure satisfactory newborn care and manage other maternal health emergencies.

Government replied that efforts were being made to augment the human resources by hiring medical and para-medical staff and/or by imparting special training to the existing staff. However, the stated efforts did not adequately improve the human resource availability with a consequential deficiency in many significant interventions related to maternity services in the hospitals and CHCs during 2013-18.



5.2.2. Clinical efficiency

5.2.2.1. Preparation of partographs

A partograph⁹⁰ enables the birth attendant to identify and manage the complication of labour promptly or to take a decision to refer the patient to a higher medical facility, if required for further management. Overall quality of care as provided by the health centres during labour is also monitored through the partograph.

Scrutiny of records, however, revealed that partographs were not plotted during 2013-18 in the 09 out of 10 hospitals and 18 out of 19 CHCs⁹¹ test-checked. DWH Allahabad and CHC Campiarganj, Gorakhpur prepared the partographs partially during 2016-18. This compromised the ability of the hospitals to measure and seek improvement in the quality of service in the labour room to reduce the chances of adverse pregnancy outcomes.

The Government did not furnish a specific reply and stated that skilled birth attendants have been imparted training to make partographs.

The reply is not acceptable, as partographs were not being plotted in almost all the test-checked hospitals and CHCs.

⁹⁰ Partograph consists of a graphic representation of the process of labour to analyse cervix, uterine contraction and foetal presentation in relation to time.

⁹¹ CHCs Baharia, Handia and Meja did not provide information.

5.2.2.2. *Management of preterm labour*

As per NHM Guidelines, babies born before completion of 34 weeks of pregnancy, termed as pre-term babies, have numerous challenges including difficulty in feeding, maintaining body temperature and increased susceptibility to infections also leading to neonatal deaths. The Guidelines also state that these complications can be largely prevented by administering injection of Corticosteroids (Betamethasone Phosphate/Dexamethasone)⁹² to a woman as soon as she is diagnosed with preterm labour.

Scrutiny revealed that age of pregnancy (gestation period) at the time of delivery was not recorded in the labour room records in 36 *per cent* cases out of the total 35,515 delivery cases during the sampled period. Out of the remaining, 348 deliveries were recorded as pre-term deliveries, which needed administration of Corticosteroid injection. The injection, however, was not administered in 138 deliveries, while no records regarding administration of the injection were available for the remaining 210 pre-term deliveries, thus constraining audit examination as detailed in **Table 27**.

Table 27: Administering Corticosteroids in pre-term deliveries (2013-18)

Hospital/ CHC	No. of delivery cases test- checked	Deliveries in which age of pregnancy not recorded ⁹³	Pre-term delivery cases requiring Corticosteroids		
			No. of pre-term delivery cases	Deliveries not administered Corticosteroid	Deliveries with no documentation
Hospitals (10)	20,172	32%	282	30%	70%
CHCs (22)	15,343	42%	66	80%	20%
Total	35,515	36%	348	40%	60%

(Source: Test-checked hospitals/CHCs)

Further, out of the above mentioned 348 pre-term delivery cases, it was observed that Corticosteroid injections were not available in stock during 183 pre-term deliveries in hospitals and 50 pre-term deliveries in CHCs.

Thus, pre-term babies remained at risk of serious post-natal complications and neonatal deaths due to non-administration of Corticosteroid to the mothers.

The Government replied that instructions regarding the use of Corticosteroid injections had been issued to all concerned health units. However, the stated directions of the Government were not adhered to as in at least 36 *per cent* cases even gestation periods were not recorded and in 40 *per cent* of the remaining pre-term delivery cases, the required Corticosteroid injection was not administered to the mothers, putting the life of newborns at risk of serious post-natal complications.

5.2.3. *Caesarean deliveries (C-section)*

MNH Toolkit designates all FRU-CHCs and hospitals as the central facility for providing Caesarean (C-section) services with the provision of specialised human resources (gynaecologist/obstetrician and anaesthetist) and equipped

⁹² Single course consisting of four doses of 4 mg each

⁹³ Including 3368 deliveries in which hospitals did not provide records

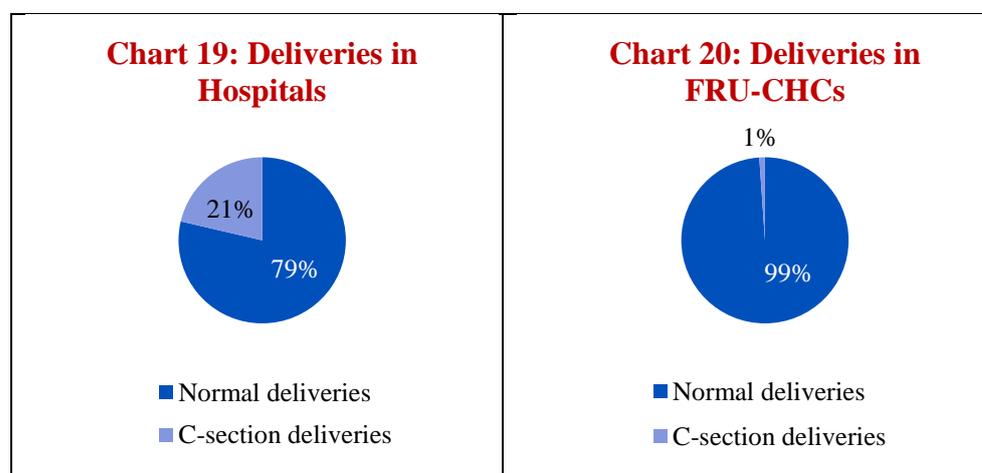
operation theatre to provide Emergency Obstetric Care (EmOC) to pregnant women. In this respect, *Janani Shishu Suraksha Karyakram*⁹⁴ (JSSK), entitles all pregnant women to C-section services with provision for free drugs, consumables, diagnostics *etc.*

Examination of records of the test-checked FRU-CHCs and hospitals disclosed that C-section services were either not available or stymied by shortages of essential resources wherever available. Specific audit findings are discussed in the succeeding paragraphs:

5.2.3.1. *Inadequate access to C-section services*

Audit ascertained the availability of C-section services in the test-checked 10 FRU-CHCs and 10 hospitals during the sampled period for 2013-18. It was noticed that in FRU-CHC Handia, Allahabad, C-section service was available for the entire sampled period, whereas in 04 FRU-CHCs⁹⁵ C-section services were available during 40 to 80 *per cent* of the sampled period. In the remaining 05 FRU-CHCs⁹⁶, C-section services remained absent. Intermittent/non-availability of C-section services in 09 FRU-CHCs was due to non-deployment of gynaecologist and/or anaesthetist. In respect of hospitals, C-section services were not available in DWH Banda and JH Balrampur during 20 and 80 *per cent* periods respectively for the reasons as stated above.

NHM Guidelines on “Engaging General Surgeons for Performing Caesarean Sections and Managing Obstetric Complications” state that around 8-10 *per cent* of total delivery cases require C-section. However, in respect of the 20,172 delivery cases test-checked in hospitals and 7,551 delivery cases in FRU-CHCs, Audit observed that the proportion of deliveries performed through C-section was much less in FRU-CHCs as compared to hospitals, as shown in **Charts 19 and 20**.



(Source: Test-checked hospitals/CHCs)

⁹⁴ GoI-sponsored programme for maternal and child health care under NHM

⁹⁵ Pipraich, Gorakhpur (80 *per cent*), Mall (40 *per cent*) and Gosaiganj (40 *per cent*), Lucknow and Deoband, Saharanpur (60 *per cent*)

⁹⁶ Kheragarh, Agra; Pachperwa, Balrampur; Sarojini Nagar, Lucknow; Campianganj and Pali, Gorakhpur

Further, JSSK Guidelines itemize 39 types of drugs and 26 types of consumables for performing C-section deliveries and these drugs and consumables are to be provided to pregnant women free of cost.

Audit, however, observed that all the 39 essential drugs were not available in the test-checked hospitals where C-section services were available. Major shortfalls were in DWHs Balrampur (67 per cent), Agra (56 per cent), Banda (54 per cent), Saharanpur (52 per cent), JH Balrampur (62 per cent) and JH Lucknow (58 per cent). In respect of FRU-CHCs, major shortfalls were noticed in Pipraich, Gorakhpur (67 per cent), Deoband, Saharanpur (50 per cent), and Mall, Lucknow (47 per cent).

Similarly, full range of 26 essential consumables for C-section was also not available in any of the test-checked hospitals⁹⁷ and CHCs. Major shortfalls were in DWHs Banda (52 per cent), Gorakhpur (46 per cent), JH Balrampur (37 per cent). In respect of FRU-CHCs, shortfalls in the availability of essential consumables ranged between 18 and 52 per cent during the sampled period.

Thus, intermittent/non-availability of C-section services in FRU-CHCs coupled with insufficient availability of resources put the pregnant women residing in rural areas at-risk of pregnancy complications, impelling them to go to DWHs for C-section, if required. Therefore, DWHs became overburdened in the absence of adequate resources for catering to their usual footfall and additional patient load coming from CHCs. DWHs, however, were also not fully capable of providing quality C-section services in the absence of adequate resources.

The Government did not furnish a specific reply to the audit observations. It merely stated that required training related to surgeries to MBBS doctors was being imparted regularly by the State Institute of Health Family Welfare Training, Lucknow to overcome the shortage of trained doctors at FRUs. In respect of non-availability of essential drugs and consumables it stated that funds for the same were provided to the hospitals. The fact remains that there was a substantial gap in the front-line delivery of C-section services in most of the FRUs.

5.2.3.2. C-section medical records

NHM Assessor's Guidebook stipulates recording patient evaluation before surgery⁹⁸, use of surgical safety check-list⁹⁹ and writing of post-operative notes during surgery and post-operative monitoring¹⁰⁰ before transferring the patient to the ward. This provides assurance towards observance of all procedures and care required for surgeries of the requisite quality.

⁹⁷ DWHs Allahabad did not provide consumable stock register.

⁹⁸ Pre-surgery evaluation records of patients are made to ensure that the patient is in a fit state to undergo surgery and there is no adverse indication for the surgery.

⁹⁹ It is made before every surgery to ensure there are no errors during the surgery.

¹⁰⁰ Post-surgery evaluation records of patients are made to record and monitor patient's health after surgical procedure.

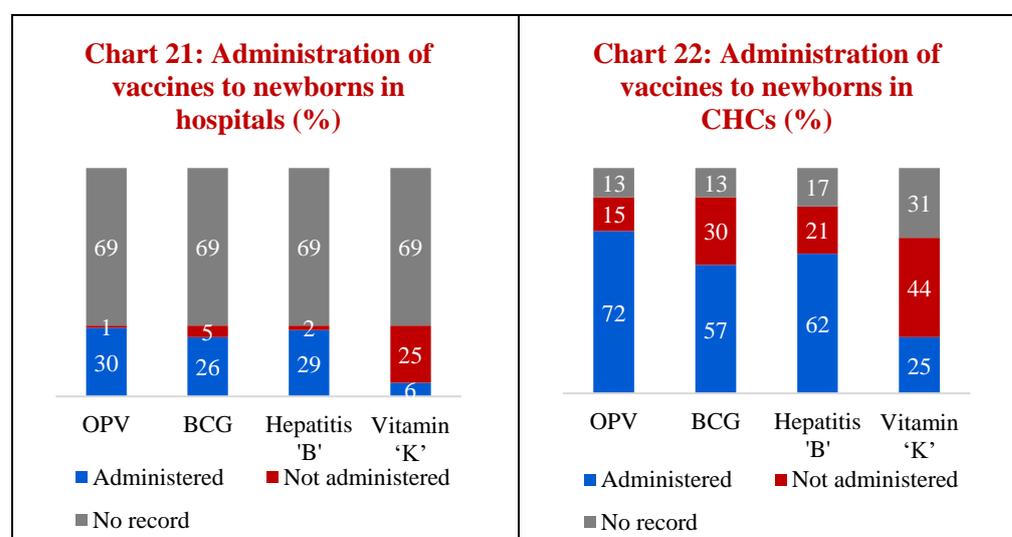
Audit examined 412 Bed Head Tickets (BHTs) of C-section surgery cases in the test-checked 09 hospitals¹⁰¹ and 04 FRU-CHCs¹⁰² where C-section services were available. Scrutiny disclosed that records of patient evaluation before surgery, use of surgical safety check-list and post-operative notes were available in only 02, 17 and 17 *per cent* BHTs, respectively. In the absence of documentation, there was no assurance that the doctors and other support staff took sufficient measures to deliver quality C-section surgery services.

The Government replied that for proper documentation of pre and post-surgery procedures, comprehensive format of Bed Head Ticket had been provided to all units and the staff was being trained for filling the BHTs. The evidence, however, points to the fact that documentation of the process prescribed in the BHTs was negligible in most of the test-checked hospitals and CHCs.

5.3. Postnatal maternal and newborn care

Prompt postnatal care (PNC) is important for early detection and management of any post-delivery complications such as post-partum haemorrhage and eclampsia, which can lead to maternal death. MNH Toolkit specifies health check-ups of the mother and infant to be monitored and recorded in the PNC register. Audit observed the following:

- None of the CHCs and hospitals maintained the PNC register during the sampled period. Therefore, an assurance could not be derived in audit whether the prescribed post-partum health check-ups of the mother and newborn were carried out by the hospitals/CHCs test-checked; and
- Newborns are to be administered doses of four vaccines *viz.* OPV¹⁰³, BCG¹⁰⁴, Hepatitis ‘B’ and Vitamin ‘K’ on the day of birth. Test-check of labour room records in respect of 19,634 and 14,821 newborns in hospitals and CHCs respectively during 2013-18 revealed significant lapses in record keeping *vis-à-vis* immunisation, as detailed in **Charts 21 and 22**.



(Source: Test-checked hospitals/CHCs)

¹⁰¹ DWH Budaun did not provide BHTs.

¹⁰² FRU-CHC Handia did not provide BHTs.

¹⁰³ Oral Poliovirus Vaccine

¹⁰⁴ Bacillus Calmette–Guérin (BCG) vaccine, used against tuberculosis

The substantial gap in documentary evidence regarding the immunisation status of newborns compromised the ability of the hospital/CHC to monitor neonatal health.

The Government replied that instructions had been issued to all districts to keep a vaccine carrier daily in the labour room with the requisite vaccines to provide new born vaccination within 24 hours.

However, the lack of critical documentation in respect of the immunisation status of newborns needs to be seriously addressed by the Government and accountability ensured, in view of its ramifications for the vulnerability of infants and the achievement of a reduction in their mortality rate.

5.4. Pregnancy outcomes

With a view to gauge the quality of maternity care provided by the hospitals, Audit test-checked the pregnancy outcomes in terms of live births, stillbirths¹⁰⁵ and neonatal deaths pertaining to 2013-18, as discussed below:

5.4.1. Stillbirths

The stillbirth rate is a key indicator of quality of care during pregnancy and childbirth. Stillbirth and/or intrauterine foetal death is an unfavourable pregnancy outcome and is defined as complete expulsion or extraction of the baby from its mother with no signs of life. As per NFHS-4 (2015-16), the average stillbirth rate of Uttar Pradesh was 1.63 per 100 pregnancy outcomes.

Audit observed that stillbirth rate was between 2.0 and 2.4 *per cent* in the test-checked hospitals and CHCs, as given in **Table 28**.

Table 28: Stillbirths during 2013-18

Hospital/CHC	Total no. of deliveries	Total no. of live births	Stillbirths	Outcomes not recorded
Hospital	20,172	19,634 (97.3%)	475 (2.4%)	0.3% ¹⁰⁶
CHC	15,343	14,821 (96.6%)	308 (2.0%)	1.4% ¹⁰⁷
Total	35,515	34,455 (97.0%)	783 (2.2%)	0.8%

(Source: Test-checked hospitals/CHCs)

High stillbirth rates were observed in DWHs Balrampur (6.9 *per cent*), Saharanpur (4.0 *per cent*), Banda (2.5 *per cent*) and JH Balrampur (3.6 *per cent*). Similarly, out of the 22 test-checked CHCs, 13 CHCs had stillbirth rates above the State average rate of 1.63 *per cent*. CHCs Handia and Meja, Allahabad; Gaisandi, Balrampur; Kamasin and Naraini, Banda; Asafpur, Sahaswan and Samrer, Budaun were amongst the poor performers with average stillbirth rates being above 2.0 during 2013-18. DWH in Balrampur district, which was identified as “High Priority District” in 2015 by GoI on the basis of poor health outcomes, fared the worst in terms of stillbirth rate. The reasons for stillbirths were, however, not available on record.

¹⁰⁵ Mismanaged ANC and delivery process convert a normal delivery into stillbirth.

¹⁰⁶ DWH Budaun did not record delivery outcome in respect of 13 deliveries during February 2017.

¹⁰⁷ CHCs Handia and Baharia did not record delivery outcome in the delivery register.

High stillbirth rates were a sign of badly managed antenatal care and delivery process in the test-checked hospitals/CHCs.

The Government replied that emphasis was being laid on early registration of pregnant women and to conduct all four prescribed ANC's through which high risk pregnancies could be identified. Government further replied that the required measures to reduce the risk of still births were being taken through implementation of specific programmes such as *Pradhan Mantri Surakshit Matratva Abhiyan, Anaemia mukt Bharat Abhiyan, Janani Suraksha Yojana, etc.* However, the fact remains that high stillbirth rate in the test-checked hospitals and CHCs was indicative of poor implementation of these schemes/programmes.

5.4.2. Neonatal deaths

Neonatal death rate is also an indicator of quality of maternity and newborn care services. MNH Toolkit requires hospitals to record the number of neonatal deaths per month with causes of such deaths in the labour room register.

Audit observed that in none of the test-checked CHCs¹⁰⁸, cases of neonatal deaths were recorded in the prescribed labour room register during 2013-18. In 04 out of the test-checked 10 hospitals, 143 neonatal deaths¹⁰⁹ occurred during the sampled period.

Lack of documentation relating to neonatal deaths compromised the ability to seek continuous quality improvement towards neonatal health, impacting neonatal morbidity and mortality.

The Government replied that to gauge the status of stillbirth and neonatal deaths, periodic reports were being obtained from the concerned units. However, scrutiny in audit revealed that the test-checked CHCs were not in a position to report neonatal deaths since they were negligent in maintaining the required records. It underlines the need for concerted efforts towards ensuring the provision of reliable information and actionable feedback *vis-à-vis* neonatal health.

5.5. Outcomes *vis-à-vis* availability of resources

The relative performance of the test-checked DWHs¹¹⁰ on certain outcome indicators evaluated by audit (*Appendix-VI*) and the corresponding availability of resources was as shown in **Table 29**.

¹⁰⁸ Except CHC Pachperwa, Balrampur where one neonatal death was recorded in May 2017

¹⁰⁹ DWH Banda (11), DWH Budaun (13), DWH Lucknow (72) and DWH Saharanpur (47)

¹¹⁰ Due to non-maintenance of bed head tickets in DWH Budaun, outcome indicators could not be evaluated.

Table 29: Outcomes vis-à-vis availability of resources in DWHs

DWH	Productivity	Efficiency	Clinical care	Service quality	C-section Rate (%)	Availability of resources		
	Bed Occupancy Rate (%)	Discharge Rate (%)	Average Length of Stay (days)	LAMA & Absconding Rate (%)		Human resources ¹¹¹ (%)	Drugs (%)	Equipment (%)
Agra	98	96	2.4	4	14	69	13	69
Allahabad	94	58	4.7	36	34	80	46	81
Balrampur	114	83	1.2	12	10	56	30	26
Banda	94	14	1.1	82	0	60	44	46
Gorakhpur	57	2	2.4	95	20	61	78	33
Lucknow	97	78	2.5	21	25	87	79	64
Saharanpur	129	86	2.6	13	30	73	41	55
Benchmark ¹¹²	80-100%	67%	2.6	31%	21%	69%	47%	53%

(Source: Test-checked hospitals)

As seen from above, DWHs Allahabad, Banda and Gorakhpur underperformed the most compared to the other test-checked hospitals, as discussed below:

- DWH Allahabad performed poorly on outcome indicators despite higher than average availability of human resources and equipment compared to the other DWHs, indicating ineffectual management.
- DWH Gorakhpur had the highest combined Leave against Medical Advice (LAMA) & Absconding Rate (95 per cent), indicating poor service quality despite the lowest bed occupancy (57 per cent).
- In DWH Banda, the combined LAMA & Absconding Rate was at a very high level of 82 per cent while the ALoS was the lowest at just more than a day, indicating unsatisfactory clinical care of patients. Pertinently, this hospital was dealing with normal deliveries only; thus, obstetric care level expected of a DWH was not available here.

The Government did not furnish a reply to the audit observation.

To sum up, varying levels of deficiencies were observed in early identification and management of complications during pregnancy, child birth and the post-partum period. Capability to provide adequate ante-natal care was especially lacking in CHCs including FRUs, with substantial shortage of human resources and investigation facilities. Provision of intra-partum care also suffered from lack of vital drugs and equipment, more so in CHCs. Management of complications during delivery in both hospitals and CHCs showed ad hocism as partographs were not prepared, while DWH Banda and FRU-CHCs did not provide even C-section delivery services. In respect of post-natal care, inadequate documentation of the processes impaired the ability of the hospitals/CHCs to monitor the health of mothers and newborns, potentially impacting maternal and infant mortality rates.

¹¹¹ Refers to percentage of availability out of the 15 categories of skilled personnel as per MNH Toolkit

¹¹² Benchmarks: BOR – as per IPHS, weighted average for rest of the outcome indicators with average annual IPD patients as the respective weight for each hospital while weight for percent C-Section deliveries was average number of deliveries, and simple mean for availability of human resources, drugs and equipment