The Nurse Mentoring Program

SAVING
MOTHERS&
NEWBORNS

2021

Background

The Facility Assessment Study conducted by India Health Action Trust (IHAT) in 25 High Priority Districts (HPDs) of Uttar Pradesh (2013), showed that there were significant gaps in facility preparedness for providing Reproductive, Maternal, Newborn and Child Health (RMNCH) Services. The primary care level facilities - Primary Health Centers (PHCs) and Community Health Centers (CHCs), which accounted for nearly 70% of all public health deliveries, were not adequately prepared for providing basic emergency obstetric and newborn care. Less than 20% of the clinical providers - Auxiliary Nurse Midwives (ANMs) and Staff Nurses (SNs) had been trained as Skilled Birth Attendants (SBAs). The availability of essential newborn services such as newborn resuscitation, phototherapy for newborn and Vitamin K for newborns, was low. There was also a shortage of essential medicinal supplies such as uterotonics, anti-hypertensive, injectable ampicillin and injectable gentamicin[1].

These findings pointed to the need to strengthen various aspects of facility preparedness for the provision of RMNCH services, including the need to strengthen the referral system for pregnant women and newborns with complications. Acknowledging this urgent need, Uttar Pradesh Technical Support Unit (UP TSU), a Unit implemented by IHAT, in partnership with University of Manitoba and launched the Nurse Mentoring Program in 2014, beginning with 150 blocks of 25 HPDs in Uttar Pradesh.

[1]**The 2013 facility assessment study, IHAT**

The Nurse Mentoring Program

The Nurse Mentoring program aimed to improve knowledge, skills and practices of the staff nurses around mother and newborn care, intra partum and post-partum care and management of maternal and new born complications, through its dedicated workforce/change agents called Nurse Mentors (NMs). The strategy involved creating a cadre of nursing professionals (Nurse Mentors) to improve the quality of care around birth in the facilities. This cadre was supported by a group of qualified public health professionals at district and zonal level, who provided mentoring and managerial support to the NMs and played a key role in supporting the health administration in systems strengthening at facility level. At the state level, program policy design, monitoring and clinical specialists were actively engaged in the program development.

Nurse Mentors are a new cadre of nurses trained in clinical skills and quality improvement processes in a labor room setup. They strengthen the clinical competencies of the staff nurses and ANMs and also facilitate improvement in system level components. The NMs are posted at sub-district block facilities and District Women's Hospitals, where they work with health facility administration, staff nurses/labor room service providers and outreach ANMs to enhance the quality of care across the continuum of care for mother and newborn.
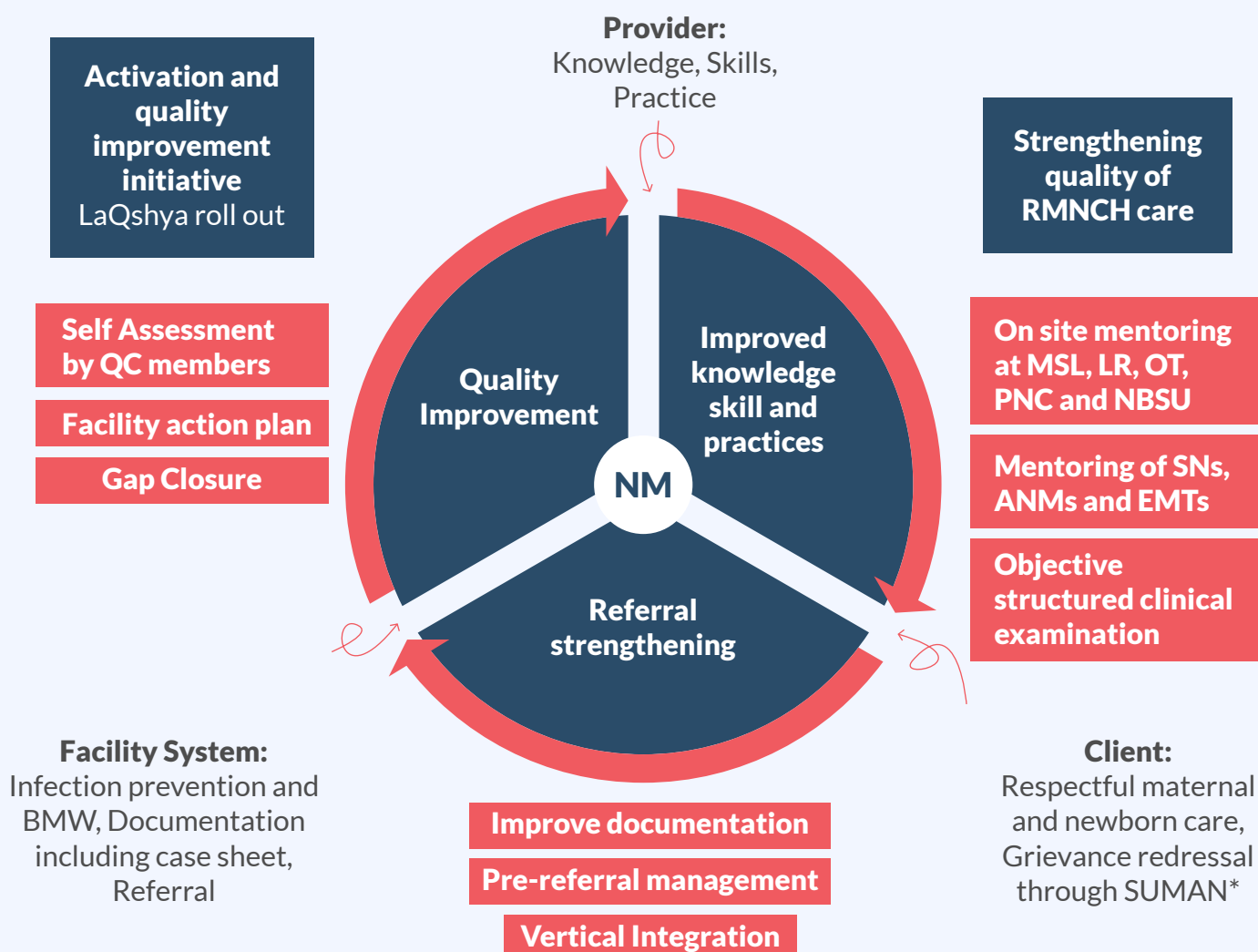
The NMs anchor the Nurse Mentoring Program and work towards improving upon five key clinical competencies of staff nurses and five critical facility systems as below:

| CLINICAL COMPETENCIES OF STAFF NURSES	SYSTEMS STRENGTHENING AT THE FACILITY LEVEL
1 Initial rapid critical assessment of pregnant women and new born to identify complications	1 Infection prevention including hand washing, sterilization of instruments and bio-medical waste segregation
2 Labor monitoring through partograph	2 Supply chain particularly with regard to essential equipment, drugs and supplies in the labor room
3 Active management of third stage of labor	3 Referral system that includes early detection of complications, pre-referral management and post-referral follow up
4 Essential newborn care	4 Service integration with the community particularly antenatal care, birth planning and post-natal care home visits by ASHAs
5 Frequent assessment of the mother and the newborn in the 4th stage of labor.	5 Improved documentation including the use of case sheets and improving the Health Management Information System (HMIS) and Uttar Pradesh Health Management Information System (UPHMIS)

Key Components

The major components of the Nurse Mentoring Program include (Figure 1):

Quality improvement

Respectful maternal and newborn care

Documentation and referral strengthening

Improvement of competencies of service provider through mentoring

Facility Systems Improvement such as Infection Prevention, Bio Medical Waste, reporting

Activation and quality improvement initiative LaQshya roll out

Self Assessment by QC members

Facility action plan

Gap Closure

Provider: Knowledge, Skills, Practice

Strengthening quality of RMNCH care

On site mentoring at MSL, LR, OT, PNC and NBSU

Mentoring of SNs, ANMs and EMTs

Objective structured clinical examination

Quality Improvement

Improved knowledge skill and practices

NM

Referral strengthening

Facility System: Infection prevention and BMW, Documentation including case sheet, Referral

Client: Respectful maternal and newborn care, Grievance redressal through SUMAN*

Improve documentation

Pre-referral management

Vertical Integration

Figure 1: The Nurse Mentoring Implementation Framework

*Surakshit Matritva Aashwasan Scheme
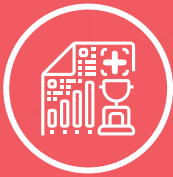
Component 1: Quality Improvement initiative

NMs played a critical role in improving the quality of services at the facility and followed systemic mechanisms as stated below:

Step 1:
Formation of a Quality Circle team

A Quality Circle (QC) team, comprising of key facility stakeholders (facility in-charge, specialists, administrative personnel, among others), was formed. The designated NM was also an integral part of the team. The QC team was entrusted with the responsibility of: (a) Identifying areas for improvement (b) Conducting a root cause analysis for the assessed gaps (c) Developing a monthly action plan (e) Day-to-day follow up and closure of gaps (f) Identifying solutions to sustain the best practices. QC team, thus, worked towards systems strengthening for achieving and sustaining LaQshya standards[2].

Step 2:
Facility Assessment

To identify gaps in facility systems on various levels, the NMs used the Facility Self-Assessment Tool, which comprised of a checklist for QC team, evaluating whether the facility meets quality standard and where there was a scope for improvement. The QC team analysed the results of the self-assessment tool and conducted a root cause analysis for the underlying gaps. Subsequently, further with the help of NMs, they developed a Facility Action Plan, which outlined the actions to be taken to fill the gaps in a time bound manner.

Step 3:
Quality Circle Meetings

The NMs facilitated QC meetings on monthly basis. In the meetings, follow up on the action points developed as a part of the facility action plan, was done. The discussions revolved around the gaps in skill and competencies of staff, availability of essential medicines and supplies, functionality of equipment and basic infrastructure of the labor room and the postpartum wards.

Through the above mentioned steps, the Nurse Mentors led the facility improvement process in consultation with the key stakeholders at the facility.

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[2]Labour Room Quality Improvement Program (LaQshya) Guidelines 2017, National Health Mission, Ministry of Health and Family Welfare, Government of India (https://nhm.gov.in/New_Updates_2018/NHM_Components/RMNCH_MH_Guidelines/LaQshya-Guidelines.pdf)

Component 2: Mentoring

In the initial months of posting, the NMs focused on four major areas: (a) Rapport building with facility and block staff (b) Facilitating the process of gap analysis with the use of Facility Self-Assessment Tool (c) Establishing Mini Skill Labs.

The NMs carried out baseline Objective Structured Clinical Examination (OSCE) to assess the knowledge and skills of labor room service providers and ANMs on topics related to the key RMNCH components. The assessment helped the NMs in preparing individual mentoring plans, in consultation with the facility-in-charge for the staff nurses and ANMs. Spread over a period of one year, the mentoring plan aimed to bring the score of each staff to 80% and more, on the key clinical competencies related to intrapartum and post-partum care. In case the endline score was below 50%, repeat mentoring doses were provided to improve the scores.

NMs used a competency based mentoring approach to build on the existing capacities and competencies of the staff nurses and ANMs. Mentoring was done either in groups or on one-to-one basis and was a mix of semi-formal lectures, role-plays, interactive discussions, demonstration of skills, practice on mannequins, case studies, emergency drills at Mini Skill Lab and onsite handholding on real time cases.

Following methods were adopted for mentoring:

(a) Mini Skills Lab

Under the program, "Mini Skills Labs" were established in District Women's Hospitals and block level district facilities. A Mini Skills Lab (MSL) is a designated space near to labor room and nursing station, which has several skill stations. A MSL has 27 advanced skills stations which were divided into five thematic areas namely, reproductive, maternal, newborn, child health and infection prevention. These skill stations are divided into six mentoring cycles.

Skill Stations	
Reproductive	Intrauterine contraceptive device, counselling on family planning
Maternal	Triage and initial assessment, partograph & Antenatal Corticosteroid (ANCS) for preterm labor, Respectful Maternity Care (RMC), Active Management of Third Stage of Labor (AMTSL), PPH management, Severe pre-eclampsia and eclampsia management, Anemia, Antepartum Hemorrhage (APH) management, Uterine balloon tamponade, bimanual compression, aortic compression
Newborn	Essential Newborn Care (ENBC), use of radiant warmer and Neonatal Resuscitation, alternate feeding methods, Kangaroo Mother Care, breastfeeding, fourth stage monitoring of mothers and newborns
Child Health	Counting respiratory rate, nebulization, pulse oximeter, measuring heart/pulse rate, preparation and use of Oral rehydration solutions (ORS) and zinc
Infection Prevention	Instrument Processing, Handwashing, Preparation of 0.5% chlorine solution, Biomedical Waste Management
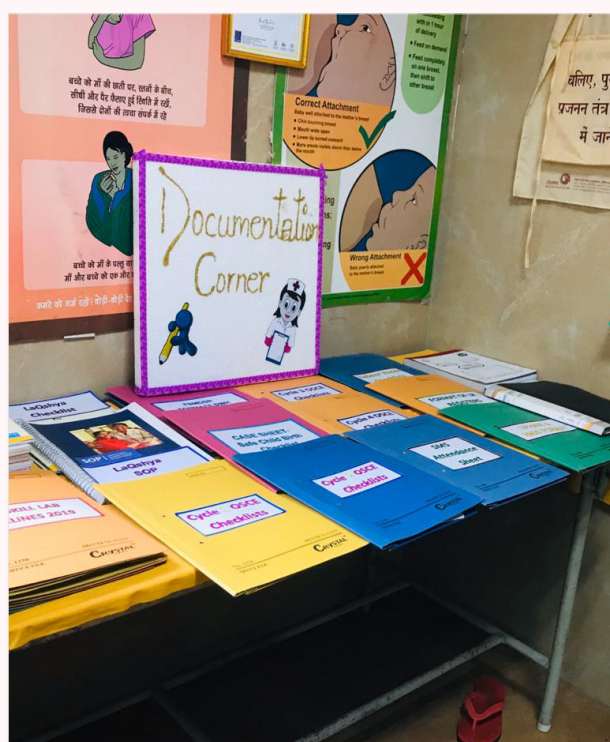
(b) On-site practice in the labor on clients

The NMs provided handholding support to SNs/ANMs of the labor room and postnatal ward for improved quality of care to mother and newborn.

(c) Mentoring of Outreach ANMs on ANC

The NMs built the capacity of outreach ANMs to provide proper ANC services like Blood Pressure (BP) and Hemoglobin (Hb) measurement, identifying and tracking high risk pregnancies including severely anemic pregnant women, birth planning, among other aspects.

Component 3: Documentation Strengthening

A comprehensive case sheet was developed and was used as a job-aid for documentation and management of care. It follows the logical sequence of patient arrival, initial assessment, admission for labor monitoring and delivery, postnatal care, newborn care and discharge of the mother and baby. The job-aid complies with the SBA, Navjaat Shishu Suraksha Karyakram (NSSK), and WHO guidelines in terms of recommended management protocols. The job-aid provided clear guidance on the recommended drugs, dosage, and administration for management of complications. Hands on support in the use of new tools was provided by the NMs so that questions and problems in the utilization of documentation processes could be addressed directly at the facility level. The NMs ensured that all the facility registers were maintained and were up-to date. (List of Facility Registers mentioned in the Annexure).

Component 4: Referral Strengthening

An effective referral system and a complication-tracking system are critical for reducing the case fatality rate. Effective communication channels between facilities providing Basic Emergency Obstetrics and Newborn Care (BEmONC) and Comprehensive Emergency Obstetric and Newborn Care (CEmONC) is vital to identify complications and address referral management. To improve communication between service providers in different facilities, the following initiatives were undertaken:

(a) Vertical Integration Meetings

The Vertical Integration (VI) meetings were an effort to create effective linkages between peripheral delivery points that provide basic emergency obstetric and new born care with First Referral Units (FRUs) that can provide advanced care. It is a forum, where the facility administration reviews 'saved' as well as 'missed' cases and everyone learns from the shared experiences. The VI meetings also aim at improving pre-referral management, management of complications, making appropriate referrals, addressing delays and fostering teamwork.

(b) Improving Referral Management through Leveraging Technology

In 25 HPDs, in order to improve sharing and tracking of patients referred between delivery points, FRUs and medical colleges, district-wise WhatsApp groups were formed. This was used as a platform for sharing essential information related to complication cases referred to higher facilities for further management. In each WhatsApp group, the Staff Nurses, Medical Officers In-Charge (MOICs), Chief Medical Officers (CMOs)/Chief Medical Superintendents (CMSs) and concerned NMs were included. The NMs/SNs shared the details of complication cases on a daily basis in order to improve the chances of survival for the patient (Figure 2).
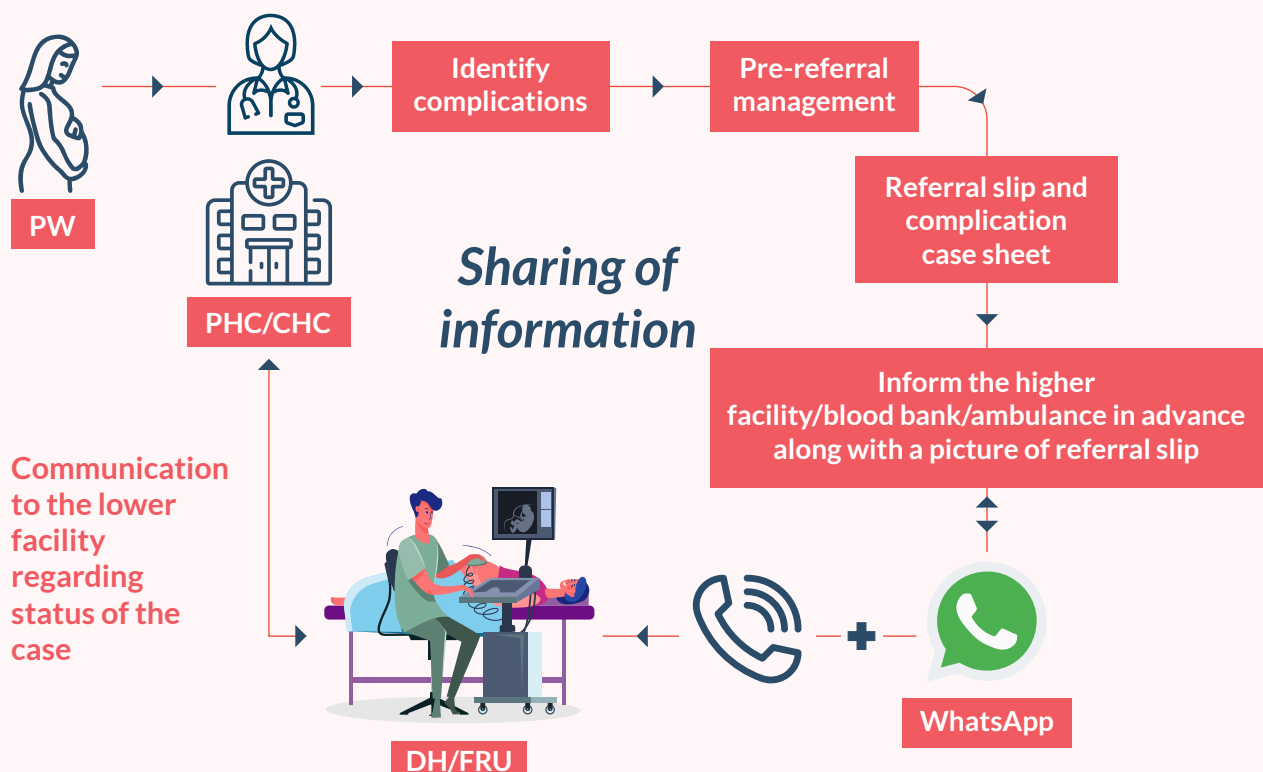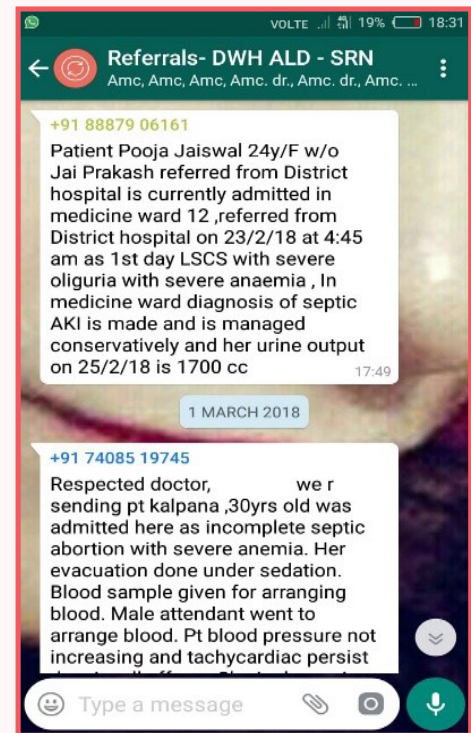

Figure 2: Diagrammatic flow of community-facility linkages

Component 5: Data Systems Strengthening

Use of data for decision making is necessary to bring improved health outcomes. Gap analysis, prioritization, hands-on support, concurrent monitoring, and problem-solving were applied to the Nurse Mentoring program for evidence based decision making. Program Monitoring involved monitoring of key MNCH related indicators for analyzing program progress and course corrections based on gaps identified.

Tools adopted for program monitoring:

(a) Monthly Facility Report

The Monthly Facility Report is a diagnostic of maternal, newborn child health at a facility, reported from the labor room, ANC and other key registers of the facility. This report is uploaded in the government data monitoring system (UPHMIS) for use and review at various levels. NMs were responsible for strengthening the HMIS/UPHMIS through onsite support and supervision to ensure timely and quality reporting of MNCH data in UPHMIS. They supported the facility staff to build their knowledge related to the definition of data elements/indicators and the source documents for accessing the required information.

(b) Competency Tracking Tool

The NMs entered the data related to mentoring and OSCE scores of staff nurses and ANMs recorded in the NM register regularly on a real-time basis. This data helped the key facility staff to track the improvements in competencies of service providers.

Progress

Coverage and Chronology

The NM program initially started in 2014 -15 placing one NM in each of the 150 blocks of 25 HPDs[3]. In 2016, the program expanded to cover 50 more blocks within the HPDs. In 2017, through advocacy meetings with the government, the program again expanded its coverage to cover the 26 district women hospitals and centers/tertiary level facilities in 25 HPDs of UP. This intervention catered to around 61% of delivery load in the public sector. Outside the HPDs, the Dakshata program of Government of India (GoI) has been operational in 31 districts of UP since 2016, where 124 facilities with 40% of the public sector delivery load are being covered through district level Quality Improvement mentors. Seeing the positive results of the program in 2018, GoUP, scaled the program to remaining 620 blocks in 75 districts through nominated nurse mentors selected from amongst existing staff nurses (Figure 3). Over a period of five years, the NMs have mentored over 2400+ Staff Nurses and 800+ ANMs in 25 HPDs, covering 240 facilities including 26 District Women Hospitals. In 2019, the program is being scaled up in all 820 blocks of 75 districts of Uttar Pradesh with nominated nurse mentoring model.

2014
- Recruitment of 150 NMs
- Training of NMs

2015
- Initiation of on-site mentoring
- Establishment of 150 skill labs

2016
- Hiring of 50 NHM NMs
- Establishment of 50 skill labs
- On-Site mentoring initiated
- Dakshata Program: started- QI mentors hired & national ToT completed

2017
- Posting of NMs in 25 DHs
- Establishment of skill labs in 25 DHs and expansion of skill stations to include complication management
- 620 NM proposed
- State Tot of Dakshata completed & district level training intitiated

2018
- Selection of 620 NMs initiated (319 joined)

2019
- Rapid Improvement plan is linked with LaQshya
- Mentoring guideline revised and scaled up across state
- 584 Nms have been selected out of 620 block 329 of them were trained in Daksh and 194 in Division Dakshata
- Dakshata training has been completed in 18 Districts and 3180 providers were trained

2020
- 496 Nms trained in Mentoring Methodology
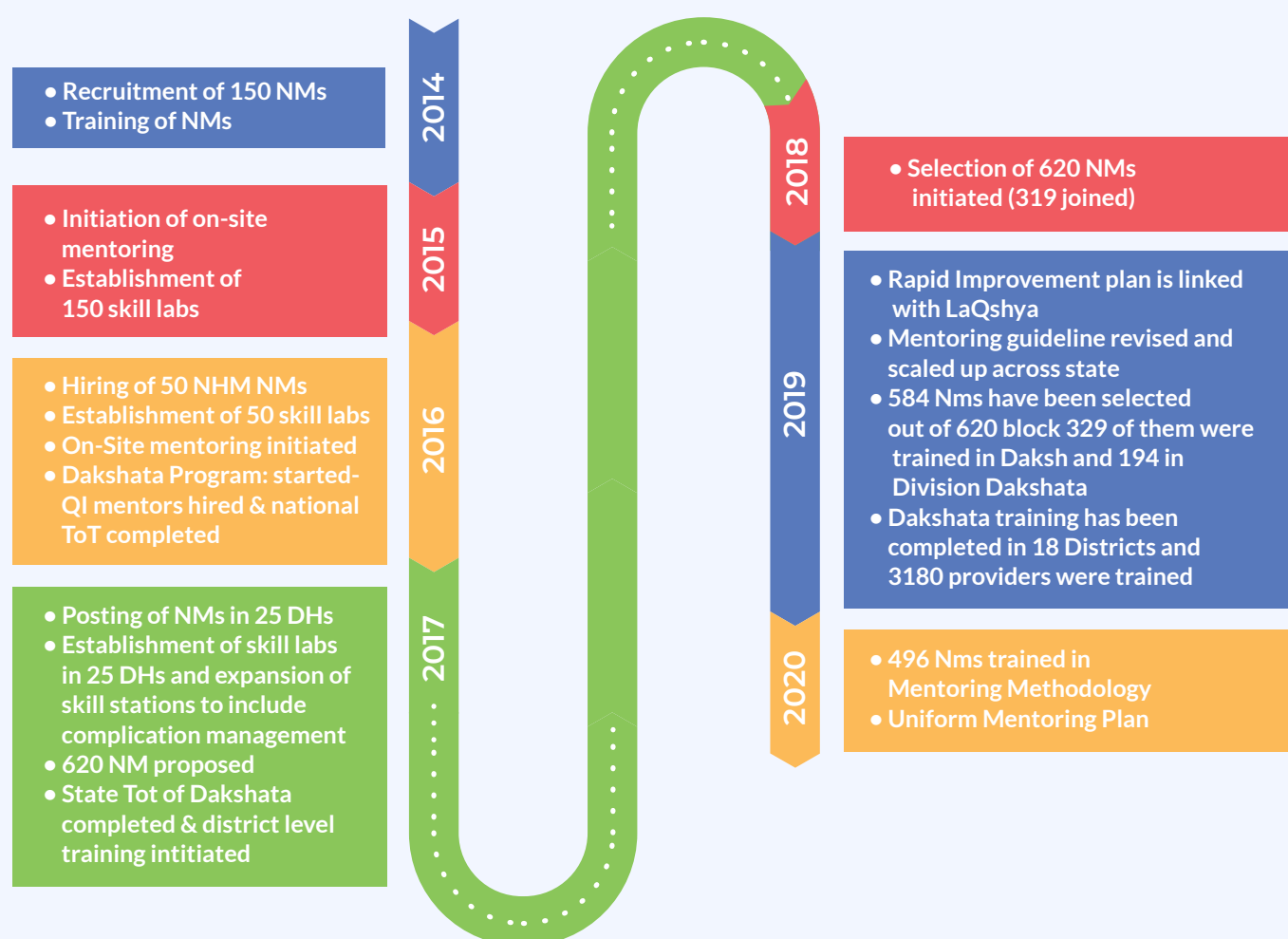- Uniform Mentoring Plan

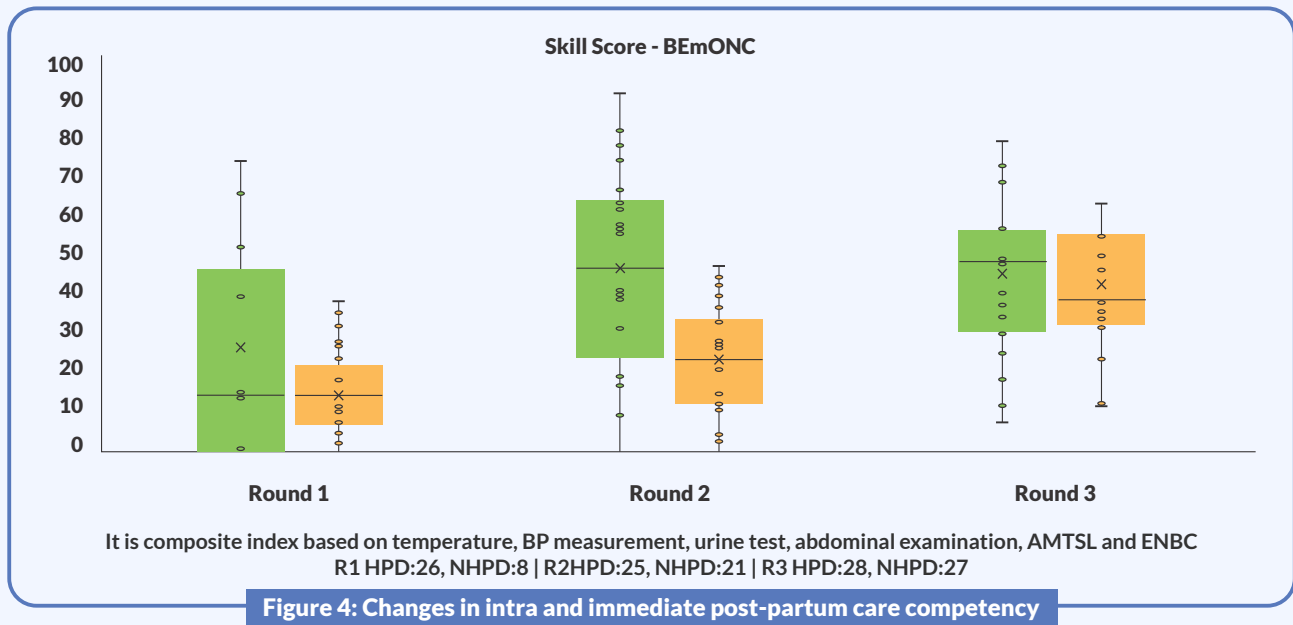Figure 3: Coverage and chronology of the Nurse Mentoring Program

Rolling Facility Surveys were conducted to assess the output of the program; whereas, external monitoring and evaluation agency was engaged to assess the outcomes of the program.

[3]Relative ranking of districts was done by Government of India (based on a composite index) and 19 bottom districts were selected as High Priority Districts for the state of UP. The Government of Uttar Pradesh (GoUP) added six districts based on the same composite index to arrive at 25 HPDs. These indicators were based on the Annual Health Survey, covering one impact indicator and one outcome indicator representing maternal health, child health, and family planning.

Key Achievements

## (a) Improved clinical competency of SNs and ANMs

There is significant improvement in the composite index based on the indicators - temperature, blood pressure, urine, abdominal examination, AMTSL & ENBC, over a period of time from round 1 and round 3. Median score has reached above 50 percent in HPDs as compared to less than 40 in Non HPDs (Figure 4).

It is composite index based on temperature, BP measurement, urine test, abdominal examination, AMTSL and ENBC
R1 HPD:26, NHPD:8 | R2HPD:25, NHPD:21 | R3 HPD:28, NHPD:27

Figure 4: Changes in intra and immediate post-partum care competency

(b) Improvement in knowledge/skill and clinical practices of intrapartum care

Composite index was calculated based on eight knowledge/skill and nine clinical practice indicators. There is a significant improvement of skills, knowledge and practice in last two Rolling Facility Survey (RFS) rounds conducted between 2017 and 2019 (Figure 5).

(Each bubble represents the delivery points and size is an indicator of delivery load. Dark blue bubbles represent optimization blocks whereas light blue, pink and orange represent NHM NMs facility where implementation started later).

**Figure 5: Composite index (knowledge, skill and practice)**
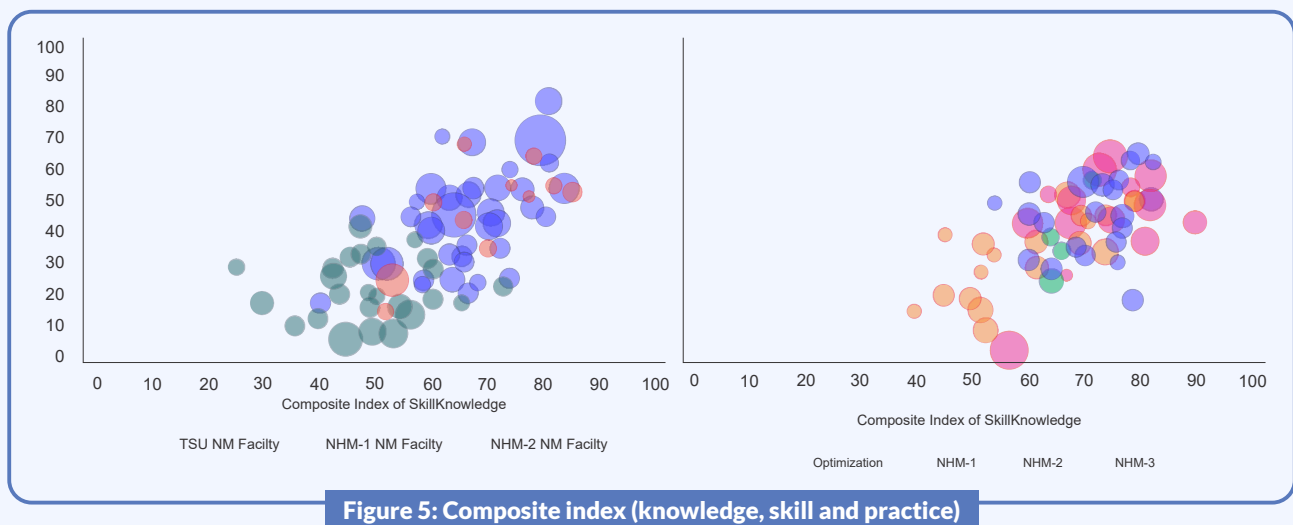
In RFS 4, it was observed that National Health Mission (NHM) NM facilities are catching up the blocks, where UP TSU had deployed the NMs and there is a clustering of facilities in right upper quadrant showing improvement in skill, knowledge and practice with few outliers with facility having poor practices although skills are on higher side.

(c) Changes in labor room practices

The Nurse Mentoring Program resulted significantly in improved routine labor room practices that have a high potential of reduction in maternal and newborn deaths including AMTSL (which prevents postpartum hemorrhage (PPH) and its consequent case fatalities) and routine newborn care (which can significantly reduce the number of newborn deaths).

Figure 6: Changes in labor practices (External MLE)

Figure 7: Changes in labor practices (RFS)
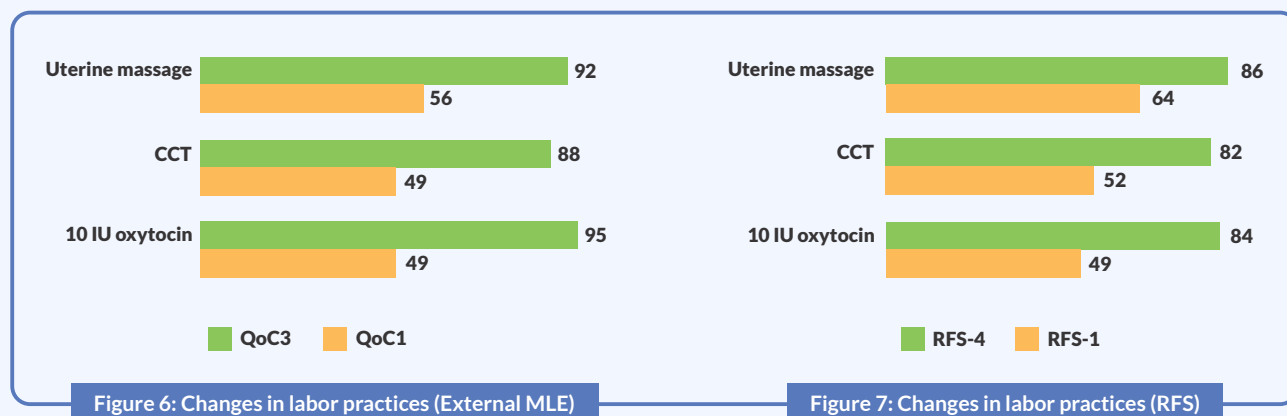
The RFS and external MLE data shows that, there was considerable improvement in different steps in active management of third stage of labor (AMTSL which by itself can prevent 70% of maternal deaths due to PPH[4]). The most important step of AMTSL (administration of 10 IU oxytocin) improved from 49% in 2015 to 95% (94%) in 2019 as per External MLE data and from 49% in 2014 to 84% (71%) in 2019 as per RFS data (Figure 6 and 7).

(d) Improvement in detection and management of maternal and newborn complications

Figure 8 shows that the rate of identification of maternal complication increased from 19.0% in 2016 to 34.0% in 2020, the detection of PPH increased from 1.6% to 5.4% with 70% reduction in referral out at district hospital level. The changes at block level facilities for detection of maternal complication, PPH detection and referral out of PPH cases changed from 9.5% to 19.1%, 1.0% to 4.9% with 66% reduction in referral out of PPH cases between 2015 and 2020.
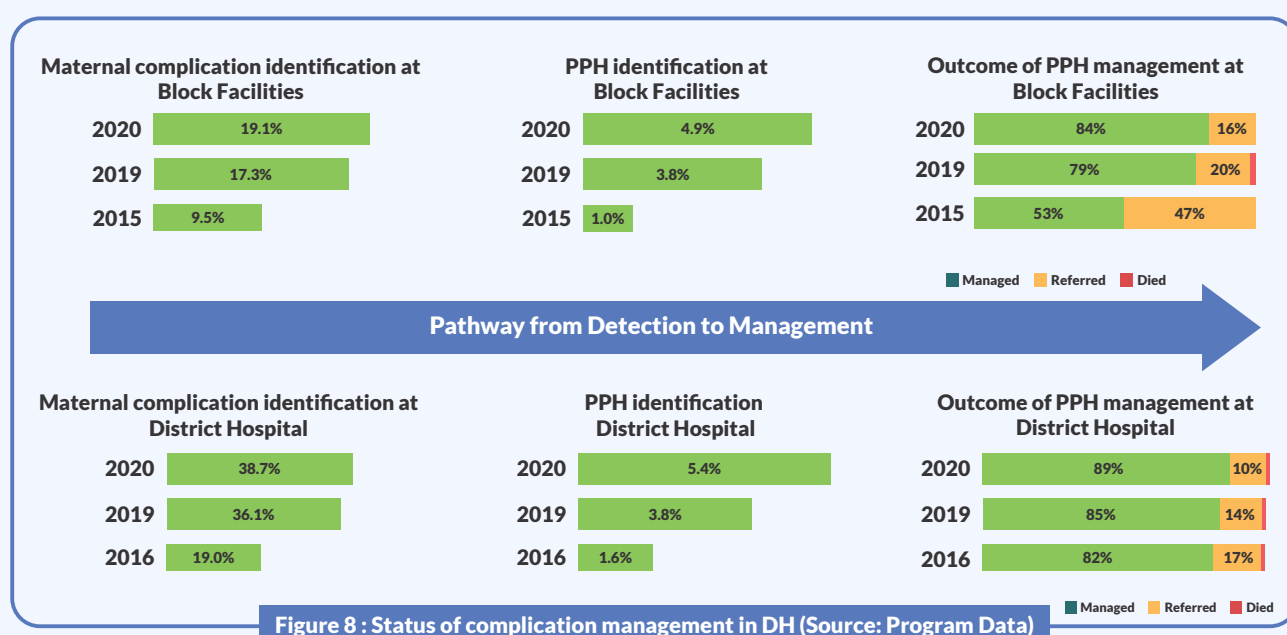

Figure 8 : Status of complication management in DH (Source: Program Data)

[4]Prata N, Bell S, Weidert K, Prevention of postpartum hemorrhage in low-resource settings: current perspectives, International Journal of Women's Health, 2013, Doi: 10.2147/IJWH.S51661

Similarly, Figure 9 shows that the rate of identification of newborn complication jumped from 14.2% in 2016 to 33.5% in 2019, the detection of birth asphyxia increased from 2.5% to 7.5% with 87% reduction in referral out of birth asphyxia cases at district hospital level. The changes at block level facilities for detection of newborn complication, birth asphyxia detection and referral out of birth asphyxia cases changed from 11.3% to 27.0%, 1.2% to 7.6% with 56% reduction in referral out of birth asphyxia cases between 2015 and 2020.
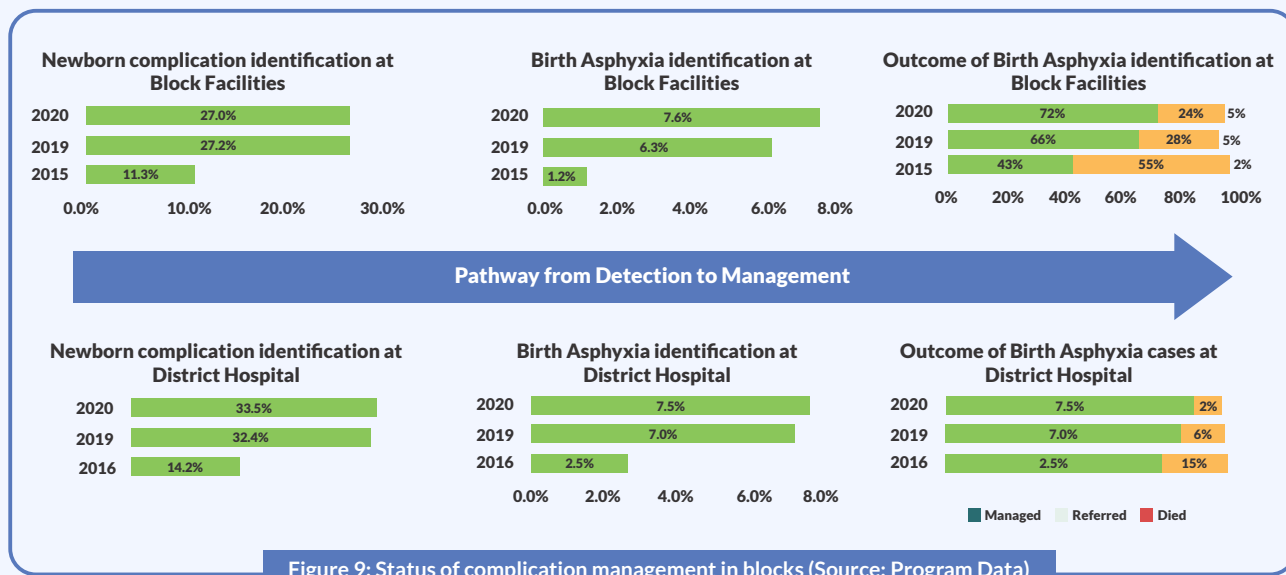
Figure 9: Status of complication management in blocks (Source: Program Data)

(e) Referral strengthening

Vertical Integration meetings and leveraging technology platforms have enhanced referral strengthening process. The VI meetings have resulted into the following outcomes:

- Standardization and use of uniform referral slips across all facilities of HPDs
- Medical officers involved in reviewing and signing all referral slips before referring a case to higher level
- Application of Non-Pneumatic Anti-shock Garment during referral of PPH cases
- Improved complication identification and pre-referral management
- Strengthened pre-referral management and documentation in LR (delivery, referral out, referral in register and referral slip).
- Improved availability of drugs, supplies and functional equipment across facilities.
- On call hiring of empaneled private specialists for Caesarian-Section

Thus, as a result of the Nurse Mentoring Program a substantial shift in detection and management of maternal and newborn complications can be clearly observed at district hospitals and block level facilities, thus, equipping facilities to manage such complications and facilitate the reduction in maternal and neonatal mortality across the state.

Way Forward

Based on the learnings from the Nurse Mentoring Program in 200 Blocks of 25 HPDs, GoI approved the scale-up of the program in all the 820 blocks of all 75 districts of Uttar Pradesh. The program has already initiated this transition. In two years, the dedicated NMs at the District Hospitals will be replaced by QI mentors/NHM NMs. Mini skill labs will be established in the remaining 620 block facilities and all DWHs across the state. Uniform mentoring plan across the state will be developed/operationalized.

1. Strengthening the capacity building activities

UP TSU will support the government in institutionalizing the concept of a 'Resource Pool of Master Trainers' for various skill trainings such as Daksh, Dakshata, Mentoring Methodology, SBA and alike. Periodic assessments of the performance of NMs/SNs will be done to analyze their training needs. This will ensure the timely availability of competent trainers and bridge the gap between the team's existing skills and training needs.

2. Establishing a mentoring ecosystem

In order to enable skill-building of the block NMs and boost their confidence through real-life experience sharing and support, a mentorship network across the district and block level facilities will be established. State-of-the-art Skill Laboratories have been set up in Noida and Lucknow, and two more centres are being planned at Varanasi and Jhansi, respectively. These training centres will provide skill-based trainings to District and Block level Nurse Mentors and will also facilitate effective functioning of Mini Skill Labs at the District and the Block level.

3. Strengthening review mechanisms

UP TSU will support the government in strengthening the existing monitoring and evaluation system to review the progress of the Nurse Mentoring Program. A customized Nurse Mentoring (NM) Application will be developed. Data from UPHMIS and the NM application will be analyzed monthly and quarterly, along with concurrent program monitoring. A facility scorecard is also being developed and shared with the government as a part of self-assessment.

4. Transitioning the mentoring activity to the Government NMs

Dedicated UP TSU NMs have been posted in 79 DWH/DCH across UP for an initial period of three years. Currently, mentoring at DWH is supported by the UP TSU Nurse Mentors across 75 districts. This will be transitioned to government nurse mentors - either dedicated NMs or in service staff nurses from same facility. The state shall also be capacitated to build an effective system to reduce the attrition rate in the NM posts at block/district facilities. For this, dedicated NHM NMs or the permanent Staff Nurses of DWH/DCH LR will be nominated as Nurse Mentors of the particular facility. The state shall also be capacitated to build an effective system to reduce the attrition rate in the NM posts at block/district facilities.

5. Identifying and capacitating ecosystem partners

While the transition related to the funding for salaries, skill stations, and trainings has already been achieved, the government will require technical support related to quality checks, audits, attrition management and mentoring regular skill upgradation. For this, UP TSU and GoUP will identify & capacitate ecosystem partners to sustain the system, processes, & best practices of the Nurse Mentoring Program.

Testimonials

Ms. Vandana Singh

*Staff Nurse, DCH Manjhanpur, Kaushambi
(Combined District Hospital), Uttar Pradesh*

"The Nurse Mentoring Program has helped the staff nurses immensely, in managing maternal and neonatal complications at the facility. The Nurse Mentor posted here, at DCH Manjhanpur, Ms Sharda *(name changed)*, not only provided me with a mentoring drill and demonstration at the Mini Skill Lab, but also gave me hands-on training during actual delivery cases. This increased my confidence on managing maternity complications by my own self. Day-to-day capacity building process and mentoring by Ms Sharda during monthly Quality Circle Team meetings ensured timely decisions to address the persisting gaps at the facility. Ms Sharda also supported in the LaQshya and National Quality Assurance Standards initiatives.

Dr Ravindra Singh,

*Chief Medical Superintendent
District Women's Hospital, Hardoi, Uttar Pradesh*

"I have been posted as the Chief Medical Superintendent at the District Women's Hospital at Hardoi since 2018 and have witnessed the transformation in the hospital since the implementation of the Nurse Mentoring Program. This program is highly comprehensive and tackles all the critical aspects like Maternal Death Surveillance and Response, OSCE, Post Natal Care, UPHMIS, and referral follow up, among others. The competency development of the staff nurse and improvement in facility system under the program has led to optimum functioning of the facility, thus serving the community with the right kind of services at the right time, resulting into a positive and safe birthing experience."

Annexure

ANC REGISTER:

This register captures routine ANC information.

LABOR ROOM REGISTER:

This register captures all essential information in and around birth including maternal and newborn. The NMs also ensure that all referred-in registers, referred out registers, referral slips are regularly filled and updated.

NURSE MENTORING REGISTER:

The most important data source and planning tool under this programme is the nurse mentoring register. The Nurse Mentors meticulously capture the program processes information in this register. At a glance, the register gives the following information - (1) Block profile (2) Facility profile (3) Details of facility action plan, review of the plan on regular interval in quality improvement meetings quarterly, (4) Facility mentoring and additional support team plan, (5) Clinical staff mentoring plan, (6) Delivery Point staff, pre-OSCE scores, mentoring dose (1,2,3), post-OSCE scores, if the staff scores less than 50% in OSCE, repeat doses mentoring doses, end line OSCE scores, (7) Non Delivery Points staff - pre-OSCE scores, mentoring dose (1,2,3), post-OSCE scores, (8) Referral directory, (9) Maternal and newborn death tracking, (10) Complication tracking, and (11) Monthly facility report.