



ON-SITE MENTORING FOR IMPROVED QUALITY OF DELIVERY AND POSTPARTUM CARE AT PRIMARY HEALTH CENTRES: AN OVERVIEW

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In India, too many women and infants die from causes that are either preventable or easily treatable. For women this includes haemorrhage, hypertensive disorders, sepsis, obstructed labour and unsafe abortion (maternal deaths), and for newborns, preterm birth, low birth weight, sepsis and asphyxia (neonatal deaths). Evidence points to the critical importance of ensuring high quality care during labour, delivery and the immediate postpartum and newborn period for saving maternal and newborn lives. This is the window in which more than half of maternal and newborn deaths take place. The ability of providers to manage normal deliveries according to best practice guidelines and to identify, manage and refer those patients with maternal and newborn complications can have a direct impact on maternal and newborn health outcomes.

The Sukshema project developed a mentoring intervention designed specifically to improve the quality of facility based maternal and newborn care in primary health care centres (PHCs) in Northern Karnataka. By providing on-site mentoring for improved clinical care and service delivery, the project hypothesized that the quality of services and continuity of care would improve

and that women and newborns would have better health outcomes. This brief describes this innovative approach, highlights achievements and outlines challenges and lessons learned.

FINDINGS FROM PROJECT DISTRICT SITUATION ANALYSIS

The Sukshema project carried out a situation analysis in eight project districts in 2011 to assess the capacity of health facilities to deliver maternal and newborn services. The situation analysis revealed the need to both improve provider competence in managing maternal and newborn care and to address facility level factors such as drug stock outs and lack of infrastructure. The analysis showed that providers did not follow best practices such as Active Management of Third Stage of Labour (AMTSL), use of partograph or provide essential newborn care. Labour augmentation (not a recommended practice) was found to be very common. PHCs in particular often lacked the drugs and equipment to provide delivery services. The situation analysis revealed a weak referral and follow-up system. Providers did not know how to screen for complications

or how to manage cases once a complication was identified. Life saving pre-referral practices including communication with referral facility, patient stabilization, and timely transport were not being followed in most cases.

The situation analysis also found that staff nurses were not supported after training to ensure good clinical practice and maintenance of skills. Mechanisms to facilitate solving facility level problems were also lacking.

INTERVENTION DESIGN

The Sukshema Project's MNCH mentoring intervention integrates elements of on-site clinical mentoring with facility-based quality improvement processes in order to support PHCs' abilities to deliver critical maternal and newborn care services. The project is employing a new cadre of full-time nurse mentors who are each responsible for mentoring staff at six 24/7 PHCs. Since staff nurses are responsible for labour and delivery services in PHCs, Sukshema opted for a peer to peer mentoring model and thus hired and trained qualified staff nurses to be mentors.

The protocol requires that nurse MNCH mentors visit their designated PHCs six times during the first year. During each visit, the nurse mentor spends 2-3 days at the PHC for clinical mentoring of the staff nurses and for PHC team building and problem solving. Mentors use tools and techniques such as observations, PHC staff self-assessment checklists, and case sheet reviews in working with PHC staff to identify quality gaps that need to be addressed. Mentors strengthen staff nurse SBA skills through a variety of teaching methods and encourage all PHC staff to work as a team to examine the quality of their services and to address specific service delivery problem areas.

The mentoring programme was piloted first in two districts (Bellary and Gulbarga) with 11 mentors. As of July 2013, the mentoring programme covered 385 24/7 PHCs with a total of 53 mentors in eight districts. These PHCs provided 30% of total deliveries in Northern Karnataka.

TOOLS TO SUPPORT MENTORING AND QUALITY IMPROVEMENT

The Sukshema project introduced an overall quality improvement approach called AMMA to help galvanize the notion of quality improvement in the minds of PHC staff.

AMMA Quality Improvement Approach. Sukshema developed a quality improvement framework called AMMA that means mother in Kannada. PHC teams are encouraged to use this quality improvement approach both with individual patients and at the facility level:

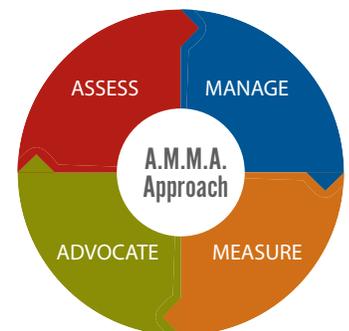
ASSESS: assess and diagnose quality gaps or problems

MANAGE: manage solutions to address problems

MEASURE: measure progress in resolving problems and quality gaps

ADVOCATE: advocate for clients' and providers' rights to quality services

At the same time, several tools such as patient case sheets, self-assessment tools and action planning tools were introduced to operationalize quality improvement.



Patient case sheet. A key innovation of the mentoring intervention was the introduction of a newly developed patient case sheet for PHC providers that incorporated the AMMA approach. Given the findings of poor provider knowledge of and adherence to SBA guidelines, the Sukshema project recognized an opportunity for developing a new case sheet that could serve as a clinical record, a job aid and a teaching tool. The case sheet guides providers through the critical steps of patient assessment, labour monitoring and postnatal care and includes a simplified partograph to monitor labour (Assess and diagnose). The case sheet directs providers to

complication case sheets that provide details on how to manage and refer maternal and newborn complications (Manage). Providers use the case sheet to make clinical decisions aligned with SBA guidelines for PHCs. Mentors also use the case sheet to conduct case audits and monitor changes in compliance with Skilled birth Attendance (SBA) guidelines and as a teaching tool (Measure). Discussions about the case sheet, lead to wider discussions of how to improve quality of care for patients (Advocate).



Photo: Mentor reviewing case sheets and registers with nurse

Self-assessment tools and action planning. The Sukshema project developed self-assessment tools that mentors use with PHC teams to assess quality of care, identify gaps and examine causes of those gaps (Assess and diagnose). The self-assessment checklist includes questions for PHC teams to discuss and to decide whether the quality standard is met or whether there might be an opportunity for improvement. The checklists focus on patient and provider rights as critical aspects of quality.

Sukshema also developed a patient interview guide that PHC staff use to ask their patients about the quality of the services they receive. PHC teams prepare an action plan based on these assessments (Manage). Follow up meetings with staff allow for assessment of progress

towards goals (Measure) and provide a forum for discussions about how to improve quality along the continuum of care (Advocate).

In addition to these tools mentors bring mannequins, flip charts and other teaching aids to the sites to provide skills practice.

CASE SHEET COMPONENTS FOR 24X7 PHCS

Case Sheet for normal labour and delivery

- Section 1: Initial assessment
- Section 2: Labour monitoring (including simplified partograph)
- Section 3: Delivery notes
- Section 4: Postpartum period
- Outcomes sheet

Supplemental Complication Case Sheets

- A. Prolonged/ obstructed labour
- B. Pre-eclampsia/eclampsia
- C. Antepartum haemorrhage
- D. Infection/sepsis
- E. Premature rupture of membranes
- F. Postpartum haemorrhage
- G. Newborn complications
- H. Other complications

HIRING AND TRAINING NURSE MENTORS

Recruitment and hiring. The Sukshema project team crafted a 3-tiered hiring strategy to identify the best candidates to be mentors. Because of the varied skills that mentors needed to possess, it was thought that a conventional hiring process of screening curricula vitae and interviewing candidates might not be sufficient to fully assess a candidate's capacities for the position. The project's need to hire many candidates at once also offered opportunities for more creative group-based assessment processes. The process followed for identifying and recruiting mentors

worked well. The candidates that were ultimately selected were the best performers on various assessments and evaluations.

Training. The Sukshema project developed a 5-week induction training programme to equip mentors with the knowledge and skills needed to carry out their responsibilities. A combination of KHPT staff and faculty from St Johns Medical College (SJMC) trained mentors at SJMC in these skills. The training covered the following topics:

- Introduction and practice applying self-assessment and quality improvement approaches
- SBA clinical content and hands-on training focused on skills to provide routine care, identify and manage complications, and make timely referrals
- Exposure to PHC-level systems such as drug supply, referral, infection control, record-keeping, and use of tools to help improve PHC systems
- Field visits to PHCs to practically apply the skills and tools

The project also provided ongoing capacity-building of mentors using a combination of on-the-job support, refresher trainings, and clinical postings.



Photo: Mentor conducts group meeting

SELF-ASSESSMENT CHECKLISTS FOR PHCS

1. Clients' rights to safe and competent care
2. Providers' rights to supplies, equipment and infrastructure
3. Clients' rights to access services and continuity of care
4. Clients' rights to infection-free services
5. Providers' rights to information, training and development
6. Clients' rights to privacy, confidentiality, dignity, comfort and expression of opinion
7. Clients' rights to information and Informed choice
8. Providers' rights to facilitative supervision and management

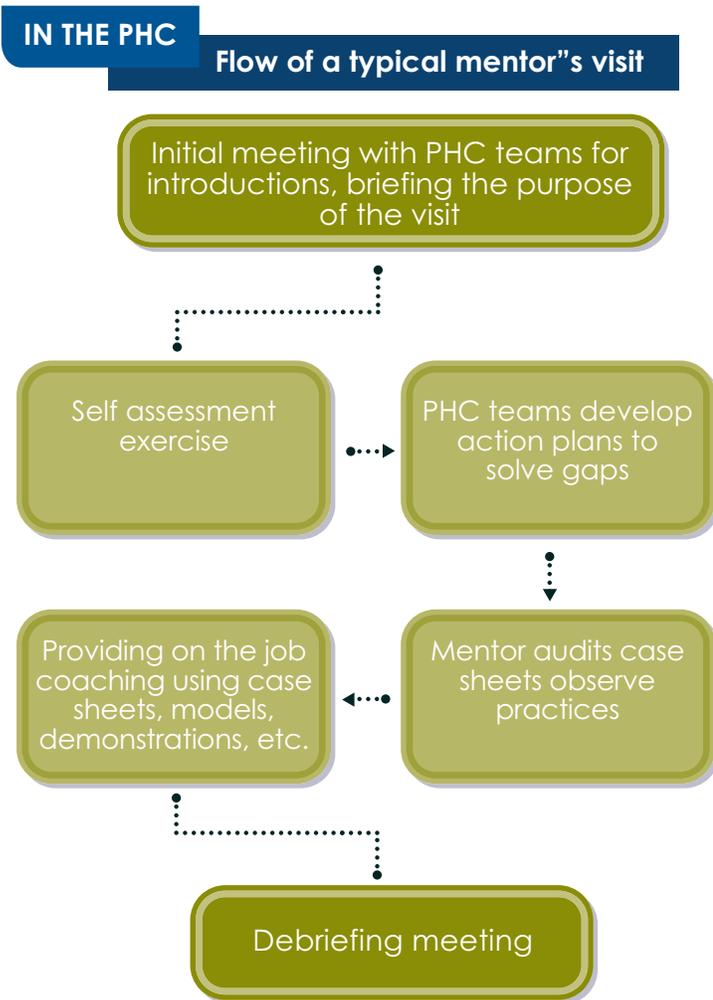
STRUCTURE OF MENTOR VISITS

Mentors are assigned six PHCs for mentoring and visit their assigned PHCs once a month initially and at longer intervals thereafter for a total of six visits a year. Each visit was expected to last two days but later visits lasted 3-4 days. The time was extended to enable mentors to complete planned tasks which were not always possible in a two day visit given high outpatient (OPD) loads and provider availability.

The structure for the mentor visits includes facilitating team based quality improvement approaches through use of the self-assessment tools and development of an action plan. Mentors facilitated team-based problem solving to address specific quality gaps such as equipment and supply logistics, infection prevention practices; referral practices; record keeping; teamwork; and staff attention to patient rights. Mentors also strengthen staff nurse SBA skills through teaching, case reviews, case studies, demonstrations and modeling bedside

patient care. All mentor visits include a review of the action plan, a case sheet audit and teaching.

The basic agenda for the a mentor visit is illustrated in Figure 1:



FINDINGS FROM MENTORING PROGRAMME

The information presented below is based on field observations, interviews with project staff and mentors, interviews with PHC staff and focus groups with mentors. A senior technical advisor, not directly involved in the day to day operations of the mentoring programme, carried out all observations, interviews and focus group discussions.

Mentoring programme successes. Mentors were able to work effectively with PHC teams to enact quality improvement processes and strengthen

provider skills in many of their PHCs. Positive highlights include:

- **Rapport with PHC teams.** Mentors expressed and demonstrated confidence in building rapport with PHC teams and carrying out the mentoring visits.
- **Support for team-based quality improvement process.** The PHC staff were willing to engage with the mentors in quality improvement sessions. PHC teams remarked that they had rarely come together as a team before mentoring and welcomed the opportunity to do so. In some PHCs, teams initiated their own reviews and resolved their own problems in between mentor visits.
- **Value of self-assessment tools and action plans.** Mentors found that PHC teams were able to use the self-assessment tools and that these tools helped teams identify where they had problems.
- **Action plans addressed system strengthening.** Mentors noted that the process of reviewing and developing action plans was well entrenched as part of the mentoring visits.
- **Use of teaching models.** The training models provided to the mentors were used effectively to carry out demonstrations. Staff nurses appreciated the opportunity to practice with newborn and pelvic models.
- **Case sheet acceptance and use.** Mentors indicated that with continued encouragement staff became more accustomed to the case sheet and appreciated its value as a job aid. Some staff initially resisted using the case sheet, perceiving it as a time-consuming documentation burden. Promoting consistent and correct use of the case sheet was a major undertaking for the mentors in all visits.
- **Opportunities for patient-focused teaching.** Mentors and project staff reported that they encountered pregnant women and recently delivered women in the PHCs so they had the opportunity to provide bedside teaching and demonstration.

- *Customised support.* Mentors had a keen understanding of their PHCs and individual staff nurses and were able to objectively assess their strengths and shortcomings and develop individualised plans to support nurses.
- *Sustaining relationships with PHC teams.* Mentors became sources of support even between visits. Staff called mentors between mentoring visits to tell them about complications or ask for information.

Mentoring programme challenges

Mentors encountered circumstances which made it more difficult for the mentoring programme to achieve its objective of improving maternal and newborn care. Some of these challenges include:

- *PHC leadership engagement.* Mentors found it more difficult to facilitate change in PHCs that did not have a full-time medical officer or a medical officer who was engaged in providing strong leadership and support of the PHC teams. In these facilities, it was harder for the mentors to inspire a sense of team work and mutual accountability.

- *High-volume PHCs.* At some PHCs with high delivery and OPD volumes, it was hard for mentors to get time with staff. In busy PHCs, mentors found it difficult to retain the attention and focus of staff to provide teaching. Busy nurses sometimes had to deal with many patients and were less likely to fill out case sheets or follow expected protocols.
- *Staff turnover, motivation, and abilities.* Mentors also reported that there was a degree of staff turnover, and they often had to bring new nurses up to speed. Another issue was that it was harder to consistently engage and have time with staff nurses who lived some distance from the PHC. Other challenges included staff with poor attitudes or those who were slow learners.

PHC QUALITY IMPROVEMENTS

The use of team-based quality improvement processes combined with ongoing mentor support generated improvements in the quality of care in PHCs. Observations and mentor and PHC team interviews highlighted notable improvements:

- *Increased availability of drugs and supplies.* Mentors and PHC teams remarked that most PHCs now had essential medicines, and medical officers were very supportive about getting needed drugs and supplies, usually using untied funds. Vitamin K, which was not available at all when the intervention began, was present in most PHCs. PHCs had acquired autoclaves, delivery sets, and other equipment as needed.
- *Improved organisation of labour room.* Mentors observed marked improvements in the organisation of the labour room and its equipment, including separation of waste and increased cleanliness. Many PHCs now had kits readily available for emergencies. Many had posted guidelines on the walls and a list of essential drugs.



Photo: Organization of drugs in labour room

- *Decreased labour augmentation.* Mentors reported that nurses were no longer performing labour augmentation in most cases. Mentors observed that some senior nurses were reluctant to change practices.
- *Improved adherence to SBA guidelines for normal deliveries.* Since mentors were able to assist and observe deliveries they were able to assess how well nurses were handling normal deliveries and complications. They reported that increasingly nurses were following the SBA guidelines, including using the partograph, practising AMTSL, and providing improved general clinical care.
- *Increased capacity and confidence to manage maternal and newborn complications.* Nurses reported that they were now more comfortable and confident in handling maternal complications and were using the case sheets for guidance. Some mentors noted that nurses still needed some support in pre-referral patient management.
- *Improved referral processes.* Mentors and PHC teams reported that their referral processes were more systematic since the mentoring programme started. PHCs were now more likely to have referral directories and to call referral facilities in advance and follow up on patient outcomes.

Areas that were slower to improve include:

- *Infection prevention.* While labour rooms were cleaner and sterilization had improved, there was still scope for improvement in the facilities overall. PHC teams and mentors remarked that Group-D staff (who are responsible for general hygiene and cleanliness) were resistant to change.
- *Inadequate postpartum care.* Mentors reported that nurses did not properly monitor patients after delivery at the recommended interval of every 15 minutes for two hours. Often this proved difficult for the nurses attending to other OPD functions. Mentors noted that the postpartum care section of the case sheet was often incomplete or incorrectly filled out.
- *Understaffing.* The government policy of three nurses for every 24/7 PHC results in staff in PHCs with high patient loads being overstretched and often unable to give sufficient time and attention to women in labour or during the postnatal period.

INTERVENTION RESULTS AND COSTS

These qualitative findings are borne out by data from quantitative assessments of the mentoring programme's achievements based on monitoring indicators and a quasi-experimental evaluation carried out in the pilot districts.

Management information system (MIS) findings

According to MIS data, the use of case sheets increased overtime. As of March 2014, nurses had completely filled out a case sheet for more than 65% of all PHC arrivals compared to 12% in January 2013. The most frequently occurring complications related to prolonged labour, premature rupture of membranes, or pregnancy-induced hypertension/preeclampsia. The use of complication case sheets was also improving: the proportion of complication case sheets filled out as a proportion of total referrals reported (derived from the referral registers) was 42% in March 2014 up from 5% in January 2013.



Photo: Nurse shows labour room equipment



Photo: Well organized Labour room in PHC

Endline evaluation findings. The project corroborated its qualitative findings with an endline evaluation of the mentoring programme and its impact on knowledge, skills and facility readiness to provide maternal and newborn services. PHCs in Bellary and Gulbarga were randomly assigned to either intervention or control groups. The endline study involved facility audits, provider interviews and interviews with postpartum women in the month after delivery in 2012 and again in 2013.

In terms of knowledge of management of labour and delivery, intervention and control sites both improved over the one-year period. There were improvements overall in knowledge of how to identify prematurity, AMTSL, eclampsia, sepsis, postpartum haemorrhage, obstructed labour, and foetal distress and how to manage neonatal resuscitation. On almost every indicator, the intervention sites performed statistically significantly better than the control sites. Post-delivery issues improved overall but there was little actual difference between intervention and control sites, especially when the practices reported by staff were compared with postpartum client interviews.

PHCs were much better equipped in 2013 than in 2012. Again, there were improvements overall in both types of sites; however, the

STAKEHOLDERS ASSESSMENT OF MENTORING PROGRAMME¹

PHC teams had a correct understanding of the purpose of the mentoring programme and appreciated its focus on improving the quality of maternal and newborn health. As a District Health Officer (DHO) noted: "Apart from (the NRHM) SBA training nurses have no exposure to new information and the mentors provide that. MOs are not able to provide this level of support because they look after many other programmes." He noted that nurses in PHCs rarely have someone available who can monitor their skills and support them and feels that the mentoring programme is filling this important gap. One medical officer explained, "Monitoring is required so we don't forget to do things and mentoring helps with this."

PHC teams credited the mentoring programme for contributing to facility level improvements. They commented on how the mentoring programme helped them with managing stocks and how to coordinate with each other to ensure they had needed drugs and supplies. They explained how the self-assessment tools had been helpful in alerting them to gaps and the action planning process helped them focus on solutions and be accountable for solving problems. Nearly all PHC teams interviewed indicated that, since they have focused on identifying problems, they had been able to solve most of the problems themselves.

PHC teams praised the mentoring programme for increasing the knowledge and skills of nurses. Nurses in particular pointed out how mentors helped them be more systematic and thorough in providing care. A recurring message from nurses was that "Mentoring has helped in better understanding in a stepwise manner how to conduct deliveries. Having someone explain these steps is very beneficial." They also shared that the case sheet helps with diagnosis and referral and how to do initial management.

¹ Based on Interviews with 4 PHC teams in pilot districts and 1 DHO in May 2013

intervention sites outdid the control sites and in many cases the differences were highly statistically significant. The biggest differences were observed with respect to drug availability and adherence to referral protocols; here, intervention sites were far better equipped to manage all emergencies than were control sites in 2013.

Mentoring was not able to affect more systemic problems such as staff shortages, the physical state of PHCs, or services such as food, water, and linens for postpartum women within the years' time.

Cost The total start-up and annual cost of the intervention was 2,71,03,453 INR (467,301 USD) for all eight districts. This translates to 3,387,932 INR (58,413 USD) per district and 511,386 INR (8,817 USD) per mentor per year.



Photo: Mentor demonstrating newborn resuscitation

SUMMARY OF ACHIEVEMENTS AND LESSONS LEARNED

Qualitative and quantitative information were all consistent in suggesting that the mentoring programme has been successful in improving many aspects of clinical care and helping PHCs be better equipped and supplied to provide MNCH services. Key improvements are summarised below:

CLINICAL IMPROVEMENTS

- Knowledge and skills
- Diagnosis and management of complications
- Improved referral processes
- Use of case sheet

PHYSICAL IMPROVEMENTS

- Availability of drugs and supplies
- Labour room organisation
- Infection prevention in labour room

MANAGEMENT IMPROVEMENTS

- Greater teamwork
- Use of self-assessment tools
- Action plans
- Use of untied funds

Major lessons learned are highlighted below:

1. The best mentors combine strong clinical and communication skills.
2. A focused training programme combined with a strong system for ongoing training and support can prepare a capable and effective mentoring workforce.
3. Self-assessment processes and team-based action planning are required to improve quality.
4. The case sheet is a helpful tool but requires time and support to operationalize.
5. Data use can drive programme improvements on many levels.
6. PHC leadership is a critical factor in improving quality.
7. High-volume PHCs require the most support.
8. The DHO's role is vital to catalyse mentoring programme impact.

9. Integration with government reporting forms and systems is needed for new formats.
10. Extending mentoring to Junior Health Assistants could reinforce linkages to community-based services.

Challenges that the mentoring programme cannot address stem from root causes that are at the community or system levels. The solutions will need to be addressed at these levels. For example, the issue of inadequate staffing or strengthening first referral units requires district or state-level action. Behaviours such as untimely care-seeking and short postnatal stays will require dialogue at the community level through ASHAs and local village leaders.

Overall, however, the mentoring programme is proving to be an effective intervention to improve the maternal and newborn services in PHCs. Mentors have been able to support PHC teams to identify and address quality gaps and to increase the capacity and confidence of staff nurses. In many PHCs, nurses say they are now providing care according to SBA guidelines and are better able to handle maternal and newborn complications. Facilities are also better organised, equipped and supplied to deliver quality services. If scaled up to other PHCs or even higher-level facilities, the mentoring programme can be an important contributor to reducing maternal and newborn mortality.

Funded by the Bill & Melinda Gates Foundation, the Sukshema project supports the Government of Karnataka to develop and implement strategies to improve maternal, newborn, and child health (MNCH) in alignment with the Government of India National Rural Health Mission (NRHM). The project is implemented by Karnataka Health Promotion Trust in collaboration with University of Manitoba, St John's Medical College, IntraHealth International, and Karuna Trust. The six-year project started in September 2011.

The goal of Sukshema is to:

Develop and adopt effective operational and health system approaches within the NRHM to support the state of Karnataka and India to improve maternal, newborn, and child health outcomes in rural populations.

To achieve this goal, the project integrated and aligned key aspects of the Foundation's MNCH strategy with the NRHM in eight districts in northern Karnataka, with the following four key objectives:

1. Enable expanded availability and accessibility of critical MNCH interventions for rural populations.
2. Enable improvement in the quality of MNCH services for rural populations.
3. Enable expanded utilization and population coverage of critical MNCH services for rural populations.
4. Facilitate identification and consistent adoption of best practices and innovations arising from the project at the state and national levels.

