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Maternal and Child Survival Program

Case Study:

Improving Quality of Care and Outcomes for Child Health Using the Standards-Based Management and Recognition Approach in Zimbabwe

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Background

Objective

The objective of this case study is to document the application of SBM-R as a quality improvement approach to the case management of childhood illness in Zimbabwe through the Maternal and Child Health Program (MCHIP). The lessons learned about the implementation process, success factors, and challenges will illumine the adoption of SBM-R to improve the quality of case management of childhood illness, where applicable, in new Maternal and Child Survival Program (MCSP) supported countries.

Context and the MCHIP program. MCHIP in Zimbabwe was launched in 2010 to support the rebuilding of the health system and to improve service provision in Zimbabwe. MCHIP interventions included both national and district level interventions. At the national level, MCHIP supported the government and partners to review and align reproductive, maternal, newborn, and child health (RMNCH) policies and strategies with the latest evidence. The aim of the four year (October 1, 2010–May 31, 2014) program was to contribute to the reduction of maternal and child health mortality in the Manicaland province, which had the worst maternal and child health indicators in the country. Implementation focused on two districts, Mutare and Chimanimani, as learning sites. For child health, MCHIP focused on improving access to and timely use of effective and high quality services for leading causes of childhood illnesses and deaths.

At the launch of MCHIP, the Zimbabwe health system faced many challenges, including a shortage of skilled health workers, especially at the peripheral health facilities, that had led to the creation of the primary care nurse (PCN) for rural health facilities. The skills of the PCN to provide a range of maternal, newborn, and child health (MNCH) services were limited. A situation analysis found that despite these constraints, service utilization was still relatively high, but that the quality of care provided in health facilities was poor.

MCHIP's program objectives and activities. From 2010 to 2014, MCHIP/Zimbabwe's activities were formed by the following four objectives:

- **Objective 1:** Support for national policies, strategies, and guidelines
- **Objective 2:** Improvement in the quality of MNCH at health facilities and in learning sites and support national level scale-up plans
- **Objective 3:** Improvement in MNCH/family planning at the community level by village health workers (VHWs) and other agents
- **Objective 4:** Increase in routine immunization coverage in Manicaland and support for nationwide introduction of pneumococcal conjugate vaccine 13 and rotavirus vaccines

In keeping with these objectives, MCHIP/Zimbabwe's child health work included improving quality of case management at the health facility level and performance and quality improvement at the community level, promoting appropriate diarrhea disease case management using oral rehydration salts and zinc, and introducing malaria community case management.

Methodology

Information for this case study is based on a review of key documents and on trip reports listed below. This documentation is limited because the source documents, besides the SBM-R Atlas,[1] do not have sections that outline activities specific to SBM-R. The activities had to be identified as "quality related" and then included in the SBM-R approach.

Source documents:

1. The annual workplans and project reports over the Life of Project
2. The SBM-R atlas for child health: "Improving Quality of Care for Child Health in Mutare and Chimanimani Districts, Manicaland, Zimbabwe, 2011–2013"
3. MCHIP Zimbabwe external evaluation report, March 2014
4. The MCHIP Zimbabwe end of project report, June 2014
5. Trip reports by the head quarter senior adviser and child health technical backstop and also the SBM-R supervisory trip report by local project staff.

Program Strategy

To improve quality of care and, therefore, health outcomes, SBM-R[2] was adopted across the RMNCH interventions. Unlike for reproductive, maternal, and newborn health, there is no previous experience in Zimbabwe or any other country with applying the SBM-R approach to the case management of childhood illness. The MCHIP team, working with national counterparts, piloted the use of SBM-R to improve the quality of case management of childhood illness.

What is SBM-R?

SBM-R is a four-step practical management approach for improving the performance of the health workers as well as the system and quality of health services. The four steps are 1) the establishment of, and agreement on, evidence-based performance standards with local stakeholders; 2) the implementation of these standards by facility teams through a gradual change-management process that emphasizes identification of performance gaps and appropriate solutions; 3) periodic internal and external measurements to assess compliance with the standards; and 4) the rewarding of compliance with standards through recognition mechanisms. The process and skills for SBM-R implementation are taught through three modules.

Implementation of SBM-R for child health. SBM-R was implemented in 12 sites in Mutare (four hospitals, an urban polyclinic, and seven rural health centers) out of a total of 52 health facilities in the district. In Chimanimani, SBM-R was implemented in nine sites (five hospitals and four rural health centers) out of 21 health facilities in the district. The 21 health facilities (12 in Mutare and 9 in Chimanimani) selected for SBM-R for child health account for about 70% of all outpatient attendances by sick children. Because SBM-R for child health was built on ongoing maternal and newborn health SBM-R activities, 17 of the 21 sites had already been selected as the "high volume" health facilities and the staffs in the 17 health facilities were already oriented to the full SBM-R process. The staff in the additional four health facilities had not been previously oriented to the full concept of SBM-R before being introduced to the Integrated Management of

[1] The SBM-R atlas for child health: Improving Quality of Care for Child Health in Mutare and Chimanimani Districts, Manicaland, Zimbabwe, 2011–2013

[2] Developed by Jhpiego in 1996 in Brazil, SBM-R's application gradually expanded and was applied to maternal and newborn in 16 MCHIP-supported countries.

Neonatal and Childhood Illness (IMNCI)-based SBM-R standards for child health.[3] This affected the ability of the staff in these later health facilities to implement the approach.

Sequencing of SBM-R implementation.[4] The steps of SBM-R implementation are broken down into tasks and detailed below. Due to competing demands on both project and government staff, the sequencing of the events and interval between steps were not structured. While acknowledging that this is likely the real life scenario, the lack of structure affects results and has implications for adherence to the SBM-R approach in the expansion phase.

Box 1. Duration and strength of implementation of the SBM-R approach for child health

Implementing one full cycle of SBM-R for child health took two and one-half years, from February 2011 to August 2013, covering 21 out of 73 eligible health facilities in Mutare and Chimanimani districts.

Fifty-three nurses (34 in Mutare and 19 in Chimanimani) were trained. Resource persons included project staff, Ministry of Health personnel, and advisers from MCHIP headquarters. Most of the trained staff provide maternal and newborn services and only a few are involved in case management of children under five.

Step I: Establishment of, and agreement on, evidence-based performance standards with local stakeholders

To introduce SBM-R, MCHIP initially consulted with Ministry of Health and Child Welfare (MOHCW) officials at national, provincial, and district (Mutare and Chimanimani) levels followed by a workshop in November 2010 to sensitize stakeholders on the SBM-R process. The performance standards for case management of childhood illness are based on the IMNCI algorithm and were set by national IMNCI trainers using a participatory process mapping exercise for provision of child health services at health facilities in Zimbabwe. Through this process, the team identified inputs, processes, and expected results of implementing SBM-R. IMNCI guidelines were used to define the performance standards and certification criteria for verifying the standards. The standards were pretested and then packaged into two clinical areas and presented on a standard template (see example of one area in Table 1 below). Eleven were developed for the 0–2 month age group and 13 for the 2–59 month age group. These were later revised upwards to 28 standards for the age group 2–59 months.

Table 1. SBM-R Performance Standards for Managing Diarrhea in Children Aged 2 Months to 5 Years[5]

Area 12: managing a sick child 2months - 5 years			
Performance Standard	**Verification Criteria**	**Y, N, N/A**	**Comments**
10. The provider checks the child for diarrhoea/ dehydration	**Observe whether the provider:**		
	• Asks if the child has diarrhoea		
	• Asks how long the child has had diarrhoea		
	• Asks if there is blood in the stool		

[3] From a trip report (October 2013) by Renata Schulmacher on reviewing the implementation of child health interventions under MCHIP.
[4] Exact dates for the SBM-R activities are not always recorded in the documents reviewed and, therefore, are not provided in the case study.
[5] Source: [USAID/MCHIP], "Improving quality of care for child health in Mutare and Chimanimani districts of Manicaland, Zimbabwe, 2011-2013," in SBM-R Atlas (Zimbabwe: MCHIP, 2014).

Area 12: managing a sick child 2months - 5 years			
Performance Standard	**Verification Criteria**	**Y, N, N/A**	**Comments**

	• Determines if the child is:
	  • lethargic or unconscious
	  • restless or irritable		

	• Looks for sunken eyes		

Step II: Implementation of agreed performance standards by facility teams through a gradual change-management process

This step emphasizes identification of performance gaps and appropriate solutions to be implemented.

Identifying performance gaps. Applying the developed verification criteria, local staff in selected facilities conducted self-assessments to measure current performance against the standards. They also analyzed the causes for the performance gaps. Unfortunately, reports from both the self-assessment and cause analysis are not available for this documentation.

Identifying and implementing appropriate solutions. This step involved proposing interventions to address the priority problems ranked as immediate, medium, or long term, but taking into account ease of implementation and the ability of staff to carry out the implementation with or without external support. The interventions focused on IMNCI training to address skills gaps and on supervision to enforce adherence to agreed performance standards and, also, to provide support. The proposed interventions and implementation plans are not available for this review, but are only referred to in the SBM-R Atlas. The extent and timeliness of implementing these "interventions to correct performance gaps" depended on whether they could be done locally with available resources or required outside support and the timeliness of getting that support. Staff mostly addressed issues related to using IMNCI chart booklets and managing sick children based on the algorithm. This also included local coaching of staff not yet trained in IMNCI to use the chart booklets.

Step III: Periodic internal and external measurements to assess compliance with the standards

To measure progress, facility teams performed continuous self-assessments,[6] which were complemented by scheduled external assessments. Three periodic external assessments were conducted (see Table 2 below).

1. A baseline assessment, conducted in both districts in 2011
2. A first periodic assessment conducted in 2012
3. A second periodic assessment conducted in August 2013

Assessment data for the 21 facilities over the life of project are shown in Table 2. "All assessments were followed by data analysis meetings with health facility teams, whereby participants analyzed assessment results and developed site-specific intervention plans. MCHIP supported the Ministry of Health and Child Welfare and facilities to then implement activities according to the action plans, monitor for progress, and continue the QI cycle over time as challenges were gradually overcome."[7]

[6,7] There are no action plans and reports from the self-assessments available or reported in the SBM-R Atlas to compare with external assessments or to document corrective actions taken by local staff.

Step IV: Rewarding of compliance with standards through recognition

One recognition event was held on 5 December 2013.

Data Collection Methods[8] for Clinical Observation

The clinical observations of case management were done at the selected facilities based on the verification criteria. External assessors, mostly IMNCI trainers, were present at clinical consultations to assess the skills of health workers as they managed sick children. During the assessment, the provider was observed managing a sick young infant 0–2 months or a sick child 2–59 months and scored based on the verification criteria. For each performance standard, health workers were expected to meet all the verification criteria for them to achieve the standard. Each standard was measured using a set of criteria (or steps) outlined in a structured clinical observation checklist for observation of a sick young infant aged 0–2 months and a sick child aged 2–59 months. If during the assessment the health worker missed one criterion (or more), they were given a zero indicating that the standard was not achieved.

A tool to assess availability of medicines and equipment was used once in the October 2012 periodic assessment, but there are no standards to measure availability of medicines and equipment as part of SBM-R implementation for child health. The baseline and second periodic assessments did not include use of this tool.

[8] Source: [USAID/MCHIP], "Improving quality of care for child health in Mutare and Chimanimani districts of Manicaland, Zimbabwe, 2011-2013," in *SBM-R Atlas* (Zimbabwe: MCHIP, 2014).

Results

Overall, the three assessments completed between 2011 and 2013 show improvements in adherence to the IMNCI standards for case management of sick children. For most indicators, the trends are in the right direction, which is important. However, for individual health facilities, the positive trend does not always hold. In some cases, the performance seems to slip back during the second assessment. The project set the indicator to measure quality of care as "percentage of MCHIP SBM-R supported facilities achieving set target for CH [child health] clinical standards" with a target of "at least 60% of supported HF [health facilities] achieving 60% of the standards." From a baseline of zero health facilities, the endline assessment shows that 71% of health facilities (15/21) reached at least 60% of child health standards from the Mutare and Chimanimani districts. Therefore, the project exceeded its target.

The unit of measure was the health facility. There is no indication of whether it was the same health workers managing sick children at the different assessments or what the number of cases managed were per health facility during the periodic assessments. Thus, the percentages, especially concerning the management of severely sick children, may be based on very small numbers. Rather than focus on the skills of individual health workers, the SBM-R quality approach reports the extent to which a given health facility meets the project target of achieving at least 60% of the SBM-R standards and shows the likelihood that a child attending a respective facility will be managed well regardless of the health worker on duty.

Table 2 presents the level of performance against clinical standards (28) for managing sick children aged two months to five years, met by each health facility. The standards are not weighted and the score is achieved or not achieved based on whether the health worker (HW) met all of the set verification criteria for each standard. The performance of health facilities on most standards shows consistent positive trends (coded green in Table 2) across the three measurements. For a few standards, there is variability, decline, or no change (coded yellow or red in Table 2) in health facilities achieving the target across the periodic assessments. Positive trends are observed in identifying problems, assessing for key symptoms (cough, diarrhea, and fever), and treating key symptoms. Notable also is the improvement in the standard for management of malnutrition, anemia, checking for immunization, vitamin A supplementation, and de-worming. Low performance is observed in checking for general danger signs, treating diarrhea with dehydration, and classifying and treating fever and measles. It is also paradoxical that performance on the standards addressing the treatment of diarrhea is low despite the project-supported, district-wide intervention to revitalize oral rehydration therapy corners and to improve appropriate management of diarrhea.

Table 2 shows that overall performance during the last two periodic assessments was better than at the baseline in October 2011. However, there is variation in the performance of individual facilities between the second and last assessment against standards. A few facilities that performed well during the second assessment performed worse during the third assessment. While this goes against the theory of continuous improvement resulting from improved practices over time as SBM-R is implemented and institutionalized, there are unaccounted for changes that, like absence of staff trained in IMNCI/SBM-R and stock-out of medicines, could account for the negative trend. It has been observed that most health facilities do not yet have a mechanism to ensure that new staff are immediately oriented to SBM-R and have the skills to adhere to agreed performance standards.

Table 2. Health Facility Performance against the 28 Clinical Standards for Sick Children 2–59 months (Key to color coding: green is a positive trend; yellow is a variation between baseline and endline; red is a reversal or no change.)

Standard	% of health facilities achieving standard 2011	% of health facilities achieving standard 2012	% of health facilities achieving standard 2013
1. The provider records the patient's information	37.5%	72.2%	76.2%
2. The provider makes an initial identification of the child's problems	12.5%	21.1%	81.0%
3. The provider checks for general signs	6.3%	21.1%	90.5%
4. The provider checks for general danger signs	28.6%	46.7%	44.4%
5. The provider appropriately treats sick child with very severe disease	0.0%	11.1%	25.0%
6. The provider checks for cough or breathing difficulty	33.3%	47.1%	81.0%
7. The provider classifies the sick child for cough and breathing difficulty	64.3%	30.0%	94.1%
8. The provider treats the child with severe pneumonia or very severe diseases	0.0%	0.0%	66.7%
9. The provider treats the child with pneumonia and no pneumonia	42.9%	30.8%	57.1%
10. The provider checks the child for diarrhea/dehydration	40.0%	62.5%	95.2%
11. The provider classifies the diarrhea/dehydration properly	10.0%	60.0%	100.0%
12. The provider treats child for diarrhea with severe dehydration	0.0%	0.0%	n/a
13. The provider treats the child for diarrhea with some and no dehydration	0.0%	27.3%	0.0%
14. The provider treats the child for severe persistent diarrhea, persistent diarrhea, and dysentery	0.0%	0.0%	n/a
15. The provider checks the child for fever and measles	37.5%	46.2%	57.1%
16. The provider classifies the child with fever in malaria high risk areas	50.0%	28.6%	81.3%
17. The provider classifies the child with fever in malaria low risk areas	0.0%	16.7%	n/a
18. The provider classifies the child with fever and measles	0.0%	0.0%	0.0%
19. The provider treats the child for fever in malaria high risk areas	0.0%	20.0%	66.7%
20. The provider treats the child for fever in malaria low risk area	0.0%	40.0%	n/a
21. The provider treats the child for fever and measles	0.0%	0.0%	0.0%
22. The provider checks for ear problem	31.3%	47.1%	81.0%
23. The provider classifies the child with ear problems	0.0%	0.0%	45.5%
24. The provider treats the child with ear problem	9.1%	14.3%	36.4%
25. The provider checks for malnutrition and anemia	31.3%	37.5%	57.1%
26. The provider classifies for malnutrition or anemia	0.0%	30.8%	85.0%

Standard	% of health facilities achieving standard 2011	% of health facilities achieving standard 2012	% of health facilities achieving standard 2013
27. The provider treats the child for malnutrition and anemia	0.0%	30.8%	78.9%
28. The provider checks the child's immunization vitamin A supplementation and de-worming status	50.0%	55.6%	95.2%

Box 2. Summary of results of SBM-R implementation for child health

All 28 standards measured and reported concern staff skills in following the IMNCI algorithm. There are no standards to measure health system support, such as availability of required equipment and supplies, how much supervision is delivered compared to planned, or movement/retention of staff in and/or out of these health facilities, over the period of implementation of the quality improvement approach.

Systematic documentation of the process of implementation is very limited and was mostly performed retrospectively. There is no documentation that links implementation of interventions to address identified gaps. This reduces the ability to judge how well SBM-R was implemented to improve the quality of care or to assign confidence in attributing the observed changes to SBM-R.

There is no consistency in the trends for individual health facilities (Table 2) between second and third periodic assessment, which runs counter to the principle of institutionalization of SBM-R expected by the third year of implementation.

Summary of Managers and Health Workers Feedback on the SBM-R Approach

In general, both managers and health workers are positive about SBM-R and the improvements in the quality of care based on health worker adherence to the IMNCI algorithm. Health managers report using tools based on SBM-R for supervision and find that it has made supervision structured and directed at improving quality of care. Similarly, health care workers report applying SBM-R principles during case management. The following are a summary of views.

1. SBM-R puts emphasis on improving quality of care using what is available to improve service delivery, i.e., health workers trained and following the IMNCI chart booklets. Some issues are not addressed adequately, for example, health care providers' motivation, attitude, and work overload, the availability of essential medicines, and supervision and support. These factors influence performance of health workers.
2. The SBM-R tools sometimes seem overwhelming due to the size (number of tools) and the number of standards to be monitored. On a day-to-day basis, health workers are not able to apply all standards, as it would take too long for each client. Some providers reported prioritizing what they consider to be most important during routine consultations, but applying all standards during external assessments.
3. Overall, SBM-R tools are considered to be good, but scarce human resources and lack of motivation of health care providers makes their use a time-consuming exercise that is not always considered beneficial by the provider.
4. Using the SBM-R tool for supervision has helped managers to review case records and enforce health worker skills, but sometimes the case records are not kept in a consistent manner and there is not enough time during a supervisory visit to use the tool.

Lessons Learned and Way Forward

SBM-R Implementation, Interpretation of Results, and Attribution

There is no written plan for SBM-R implementation to compare with the plan for actual implementation. There is also limited documentation on the implementation of each step. In particular, there is no evidence of health facility-based interventions to address the gaps during the intervals between different steps of implementation and assessments. This review does not include records of the self-assessments and actions taken. In summary, implementation was not structured enough to demonstrate how SBM-R has been adapted to address the quality of child health services. In addition, the measurement of improvements is not linked to how many "quality improvement interventions" were implemented to address identified gaps (strength of implementation). Furthermore, SBM-R was implemented alongside other interventions, including IMNCI training and improved supervision.

The gaps are being addressed under the MCHIP Associate Award. In conclusion, in the absence of a logical framework, implementation fidelity, and systematic documentation, it is difficult to draw lessons about implementing SBM-R for child health from this pilot program.

Performance Standards and Health System Support for Health Workers to Implement SBM-R in Child Health Activities

The SBM-R for child health only focused on the performance of the health worker without any indicators to assess health system support. For example, the availability of medicines and supplies was not included as a separate performance standard. Field visits by both the external evaluation team and the headquarters child health technical adviser reported "stock-outs of essential medicines occur frequently between deliveries of drug kits." This can affect the performance of health workers as well as quality of care for children in general. It is important to include availability of drugs and frequency and quality of supervision in a quality improvement approach.

Using SBM-R to Improve Performance of Health Workers

The three assessments made at all 21 health facilities using the existing SBM-R tool showed improvements in performance. In the case of Zimbabwe, it seems possible that SBM-R can contribute to improving health worker skills. The health workers are also positive about using the tool. However, as already observed, the implementation of the different steps of SBM-R and periodic measurements are not linked to attribute the changes to the intervention. A complete review of SBM-R should also document the gaps identified by health workers during self-assessments and solutions implemented to ensure that there is a direct correlation between dose of the "quality improvement activities" and adherence to agreed standards at each facility. This will also help identify which steps of the SBM-R approach have the greatest influence on changing the behavior of health workers.

SBM-R Performance and Impact on Child Health Outcomes

The design and implementation of SBM-R focused on health care providers' adherence to IMNCI guidelines. While it was implied that this would lead to improvement in child health outcomes, improvement targets were not defined at the beginning and were not tracked. Some examples of possible outcome indicators are 1) the number of sick children identified as requiring vaccination on the day of the visit and that received the vaccine that same day; 2) the number of children that received the correct prescription for pneumonia, fever, and diarrhea; 3) the number of children that received the correct prescription and left the facility with the

medication (health system); and 4) care-givers' knowledge on how to administer treatment and when clients need to come back to the facility for additional care.

A new IMNCI register has been introduced, which makes it possible for supervisors to "audit" previous case management records if they are not able to do direct observation of case management. Over time, it will be possible to link the correct management to the outcome of illness by recording referral and counter-referral between health facilities and village health workers.

Implementation of SBM-R at Scale and Sustainability

This case study does not provide much insight into implications for implementing SBM-R at scale and sustainability because of the limited documentation of all the steps, time, and financial resources required for implementation in the 21 health facilities.

The sequencing of activities seems to have been delayed given that only one recognition event has been held between 2011 and 2013. Training in the different modules took longer than anticipated because resource persons (from the project and MOHCW) and health workers were involved in other competing activities. In some cases, training in IMNCI for providers and supervisors was rescheduled several times. This had an impact on the speed of SBM-R implementation.

Ultimately, to succeed, the process should be largely within the control of the district health executive committees. Dependence of the intervention on external resources, whether human or financial (outside the district budget, for example) makes the approach less likely to be scalable and sustainable.

If a formal "recognition" event is considered the end of one cycle, implementing the performance improvement cycle for child health took three years. District executive teams should plan local recognition events to keep the momentum. It is obvious, however, that implementation has been interrupted and delayed by many factors, including a limited technical capacity, in both the project and the supported districts, to drive the process. In addition, since IMNCI training was a major part of SBM-R for child health, delays in updating the IMNCI materials at the national level and putting all training activities on hold was a major factor in the limited coverage achieved. While this is considered normal, to achieve 100% coverage and maintain 100% tracking of the quality improvement activities would require significant investment in capacity building and making SBM-R part of the culture of the health system. The cost of implementing SBM-R was not evaluated as part of this case study, but would be a factor in considering scale up. Ultimately, it can be assumed that once a critical mass of providers has been trained, the district health management teams have the capacity to train and support new health workers and a new culture of paying attention to quality of care can be sustained. This also requires that the SBM-R approach be simplified to the extent that health workers can acquire the skills to lead the process.

Suggested Modifications

1. The IMNCI SBM-R tool needs to be reviewed and simplified by reducing the number of variables and narrowing them down to
    a. what is essential for improving outcomes for child survival,
    b. what can be measured at facility level, and
    c. eliminating any subjective perception.

The revised IMNCI SBM-R tool should reflect the way IMNCI evaluation is conducted and taught to health care providers, specifically,

a. evaluation of the child with emphasis on identifying general danger signs or signs of severe illness and acting promptly,

b. appropriate classification,

c. appropriate treatment, and

d. communication.

This might require two separate tools for health providers and the supervisors, but keeping a similar format to allow for comparison against the supervisor as a "golden standard."

2. For health worker motivation, unlike the current SBM-R scoring system of "yes" or "no," a more friendly assessment tool should reflect and acknowledge the degree of improvement. The criteria should also be weighted to put emphasis on steps that are critical to getting the right outcome, for example, the ability to assess for and pick a danger sign that, if missed, could result in the death of a child.

3. A quality improvement approach should also include standards to improve and measure the health system support and client satisfaction, e.g., are the necessary tools and drugs available, how long do clients wait to be seen, and what is the state of the waiting environment. Orientation to quality improvement and implementation should also target all the staff at the health facility including non-clinicians who perform supportive tasks or assume a clinical role (nurse aids, for example) when the nurse is not available.

4. Periodic SBM-R assessments should be simplified and conducted not only regularly but more often (unlike annual assessments) to enforce skills; otherwise, providers tend to prepare only prior to the evaluation. The periodic assessments, including the data management, were led by the project. The feasibility of having a district health team conduct these regularly, as part of supervision twice a year, for example, should be assessed and costed. The more intensive periodic assessments should include monitoring overall improvement in health outcomes based on the health management information system data and appropriate [quality related] questions should also be included in periodic household surveys.

5. The cost of quality improvements and any actual or imputed cost savings resulting from better quality should be documented and used to advocate for improved quality of care.