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Preliminary Lessons Learned:
Integration of IMNCI Standards in Three Health Centers in Guinea

Authors:
Dieney Kaba Fadima
Dem Bokar
Ibrahima Nabe
Serge Raharison

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Abbreviations

ACT	Artemisinin-Combination Therapy
COPE	Client-Oriented, Provider-Efficient
CSU	Urban Health Centers
DHS	Demographic and Health Survey
EmONC	Emergency Obstetric and Newborn Care
FP	Family Planning
GNF	Guinean Francs
IMNCI	Integrated Management of Neonatal and Child Illnesses
IP	Infection Prevention
MCHIP	Maternal and Child Health Integrated Program
MOPHH	Ministry of Public Health and Hygiene
OAP	Operational Action Plan
ORS	Oral Rehydration Salt
ORT	Oral Rehydration Therapy
SBM-R	Standard-Based Management and Recognition
UNICEF	United Nations International Children's Emergency Fund
USAID	United States Agency for International Development
USD	United States Dollar
WHO	World Health Organization

Executive Summary

Introduction

Since the early 2010s, Guinea has implemented the Standards-Based Management and Recognition (SBM-R™) approach to strengthen the quality of services in emergency obstetric and newborn care (EmONC), family planning (FP), and infection prevention (IP). In the first quarter of 2014, the total number of health facilities implementing SBM-R reached 60.

In October 2013, the SBM-R approach was adapted and tested to improve the quality of Integrated Management of Neonatal and Child Illnesses (IMNCI) in three urban health centers (CSU): Dabola, Mandiana, and Diakolidou. This document reports the results and the preliminary lessons learned during the first six months of implementation of the SBM-R approach to IMNCI in Guinea.

Overview of the Intervention

Prior to the intervention under review, the three selected sites had completed three modules of the SBM-R process and had at least two visits for follow-up on EmONC, FP, and IP performance. Among the three, only the CSU of Diakolidou obtained the official recognition of attainment of standards from the authorities.

During the intervention, the primary provider and their substitutes at the selected facility received onsite training. In each facility, up to two providers were evaluated on their performance before the training (baseline), were coached on the use of IMNCI standards, and reevaluated at the end of the three day-training (post-training performance). The district supervisor was also trained and helped the CSU staff develop an action plan after the post-training evaluation. Four weeks later, the team of trainers traveled back to the sites for the first follow-up and reevaluated the performance of the providers (performance on first follow-up visit).

Some Limitations

The report covers the period from the introduction of the IMNCI standards to the first follow-up visits. The measure of performance of providers is based on the observation of a *convenienc*e sample composed of two to five sick children. Due to the short duration of the initiative and the limited number of facilities and observations involved, the findings are thus only preliminary.

Initial Results

At the end of a three-day onsite training, the providers showed outstanding progress in terms of adherence to the quality standards. The performance of the primary providers already trained in IMNCI evolved from 30%–70% baseline to 91%–95% after training. For the substitute providers, who had no previous training in IMNCI, the performances evolved from 0%–18% before to 84%–90% post-training.

In contrast to the clinical performances, the performance of service organization criteria was less pronounced. The management of the workspace, the organization of the documents, the apparent duplication of packages of the SBM-R and the IMNCI tools, the workload of staff, and the frequent stock-out of drugs were among the main challenges.

Cost Consideration

Apart from equipment and supplies, the cost of introducing the SBM-R process and of implementing the EmONC, FP, and IP components was $4,200 per health facility on average.

The formal IMNCI training on the new six-day curriculum (shortened from 11 days) costs about $800 per participant. The three-day, onsite training on the use of IMNCI SBM-R standards cost between $800 and $1,200, and a follow-up visit cost between $500 and $700. The total cost of adding IMNCI in each site was between $2,100 ($800 + $800 + $ 500) and $2,700 ($800 + $1,200 + $700)

Therefore, the cumulative investment for implementing SBM-R was between $6,300 ($4,200 + $2,700) and $6,900 ($4,200 + $2,700) per health facility.

Preliminary Lessons

Having staff members in the health facilities capable on both SBM-R and IMNCI greatly facilitated the implementation of the new standards. Even the substitute providers who did not have any basic skills in IMNCI have demonstrated tangible results. Peer coaching, self-learning through the SBM-R process and focus on clear objectives seemed to be the roots of such remarkable results.

Among the weaknesses of the initiative were the persistence of simple problems and the apparent weak commitment from the higher levels of the health authorities to assist in the resolution of more complex problems, such as ensuring the availability of essential medicines or guaranteeing the stability of the trained staff.

Conclusion

This short experience demonstrated the potential and some limitations of the SBM-R approach to improving the quality of the IMNCI. Although the short experience identified key points for improvement at the facility level, it could not address some fundamental issues, such as the effect of the approach on the overall quality of care and outcome, the efficiency of overall service provision, or the program benefit compared to the investment in finances, time, and human resources.

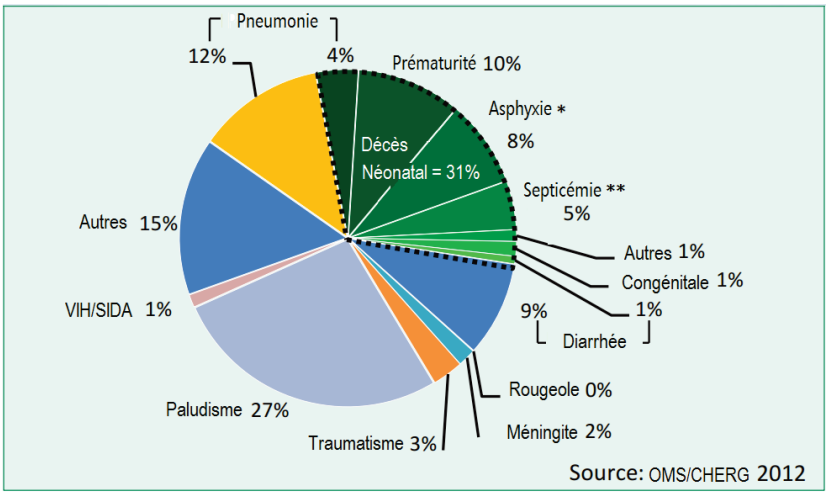
Questions remain on the capacity of the Government to commit to an investment on a large scale. However, there are significant opportunities for sustainability in the Guinean context. The *integrated monitoring,* already institutionalized, could be a way to integrate the SBM-R action plans for better visibility and greater accountability at all levels of the health system. Streamlined options should be explored to accelerate the expansion.

Introduction

Guinea is among the countries whose under-five mortality rates remain high and is one of 16 countries where the under-five mortality rate is above the bar of 100 deaths per 1,000 live births.[1] In recent years, the under-five mortality rate has only seen a small reduction: from 163 to 122 per 1,000 live births between 2005 and 2012 (Demographic and Health Survey, (DHS) 2012).

Similar to most sub-Saharan African countries, malaria, pneumonia, and diarrhea are major public health problems. In addition to the high prevalence of the three diseases (43.9% for malaria, 16% for diarrhea, and 6% for acute respiratory infections according to the DHS 2012), they are also the first causes of under-five mortality (malaria 27%, pneumonia 16%, and diarrhea 10% according to World Health Organization (WHO) estimates). Neonatal deaths represent almost one-third of the under-five deaths (31%) (Figure 1).

Figure 1. Causes of under-five mortality in Guinea[2]



* Evènements en intrapartum ** Septicémie/Méningite/Tétanos

To address problems of newborn and child mortality, the Government of Guinea adopted the strategy of Integrated Management of Neonatal and Child Illnesses (IMNCI) in 2002 and has been firmly committed to scaling-up the strategy to cover gradually all health facilities in the country.

In order to achieve the expected morbidity and mortality effects, both coverage and quality of services should be addressed. Given the rich experiences of Guinea in the SBM-R approach and its institutionalization within the Ministry of Public Health and Hygiene (MOPHH), the United States Agency for International Development (USAID)-Maternal and Child Health Integrated Program (MCHIP) project provided technical assistance to test the use of Standards-Based Management and Recognition (SBM-R®) in child health services.

To date, there is little documentation on the SBM-R approach in the technical area of child health and IMNCI. The sporadic experiences, including those in Madagascar, Mozambique, and Zimbabwe, have not yet been properly documented. For that reason, this document has been developed in order to describe the process of introduction of the approach in Guinea and to present a few preliminary lessons learned during the early stages of implementation.

[1] Global Health Observatory data: Under-five mortality. http://www.who.int/gho/child_health/mortality/mortality_under_five_text/en/
[2] http://www.countdown2015mnch.org/documents/2012Report/2012/2012_Guinea.pdf

History of IMNCI and SBM-R in Guinea

Introduction and Implementation of IMNCI in Guinea

The introduction of IMNCI in Guinea started in February 1996 with a situational analysis of the child health status. This analysis recommended the implementation of the IMNCI program. A baseline survey was conducted in the health districts of Dabola, Kouroussa, and Mandiana in April 1999. Following the participation of executive Guinean program managers at the 45th session of the WHO Regional Committee for Africa in September 1999, a large information campaign on the IMNCI strategy was conducted to raise awareness among public and private health services, regional and district health directorates, the head of the Pediatrics Department of the Faculty of Medicine, and the partners as well as the schools of community health.

The development of IMNCI tools proceeded through a series of national workshops:[3] orientation and planning in June 2000, adaptation of generic tools in July 2001, national consensus in February 2002, and validation in September 2002. The first national trainers and resource persons were trained in December 2002, which was followed by training sessions of providers in two pilot districts spread over 2003 to 2006 (Kankan in April 2003 and May 2004; Kindia in August 2005; and January and February 2006).

The first annual review of the IMNCI program in April 2004 concluded that the implementation steps recommended by WHO were respected and that the initial experience confirmed the effectiveness of the IMNCI in improving child survival in Guinea. In 2010, the National Coordination of the IMNCI program conducted a self-assessment and reported that 469 trained providers were available and that 12 out of 38 districts were covered.[4] In order to reduce training costs and accelerate the scale-up of the program, the duration of the IMNCI course was officially reduced from 11 to 6 days starting in 2012.[5]

The Quality Improvement Approaches in Guinea

Quality improvement of child health services in Guinea dates to the introduction of IMNCI in the country. The first documented experiences were the client-oriented, provider-efficient (COPE)[6] experiences implemented in four health facilities in the early 2000s. The authors reported that this approach, while simple, could have dramatic effects on the quality of services and concluded that it could be complementary to IMNCI training.

Another phase marked the history of quality improvement in Guinea, at the beginning of 2010, when two projects funded by USAID (USAID-MCHIP and USAID-ESD) supported national efforts to introduce the SBM-R (principles are summarized in Box 2). Six pilot sites were first selected in the Region of N'Zérékoré, namely, a urban health center (CSU) and a maternity site in each of the prefectures of Beyla, Macenta, and Nzérékoré.

[3] Technical and financial assistance from WHO, UNICEF, and USAID-BASICS.
[4] MSHP Coordination Nationale PCIMNE. 2010. Auto-évaluation du programme de prise en charge intégrée des maladies de l'enfant et du nouveau-né - PCIMNE
[5] Appui technique et financier par USAID-MCHIP
[6] Bradley J, Igras S. 2005. Appui technique et financier par EngenderHealth: "Improving the quality of child health services: participatory action by providers." *International Journal for Quality in Health Care* 17, no. 5 (2005): 391–399.

After the presentation of the first results of the assessments to the MOPHH and its partners, a National Committee for validation and recognition of performance was established. Subsequently, the SBM-R approach was adopted by the National Directorate of Hospital Services as a strategy to improve the quality of services.

A general assessment of all of the SBM-R programs that took place in 2012 concluded that the quality improvement is the result of two main factors: individual capacity building of care providers and joint efforts by the health facility staff and the community. Enabling factors included leadership within teams, sharing the results with all players and the synergy of efforts of multiple stakeholders.

As of March 2014, trainers and supervisors from regions and districts were involved in the establishment of the SBM-R approach in a total of 60 health facilities in Guinea. Of these 60 health facilities, 47 completed three modules on emergency obstetric and newborn care (EmONC), family planning (FP), and infection prevention (IP). Of the 29 health facilities that received an external visit to validate their performance, 18 passed and were recognized as performing facilities. They enjoyed the official ceremony of recognition from the MOPHH, memorialized with an official plaque as in Photo 1.

Photo 1. Recognition plaque of a site which achieved SBM-R standards

Box 1. The principles of SBM-R

SBM-R is a practical management approach for improving the performance and quality of health services. It consists of the systematic, consistent and effective utilization of operational performance standards as the basis for the organization and functioning of these services, and the rewarding of compliance with standards through recognition mechanisms. SBM-R follows four basic steps:

1. Setting objective performance in an operational way
2. Implementing the standards through a streamlined and systematic methodology
3. Measuring progress to guide the improvement process toward these standards
4. Recognizing the achievement of standards

Steps of the SBM-R process:

– from JHPIEGO (2005), Standards-Based Management and Recognition – A Field Guide

The Use of the SBM-R Approach to Encourage the Practice of IMNCI

Decision on the concept and choice of first sites

Despite a large number of personnel trained in IMNCI in Guinea, implementation into actual practice remains a major challenge. The reasons reported through the self-assessment conducted by the MOPHH in 2010 included the irregularity of the supervision visits, the chronic staff shortage, the instability of the trained providers, and the unavailability of essential medicines. The promising experiences of the SBM-R approach suggested that the IMNCI could benefit from the same platform to address in a systematic way—and from the bottom—the challenges identified above.

For these reasons, the MOPHH decided to develop standards for the IMNCI and test the application of the SBM-R approach for the management of sick children under-five in some health facilities, with technical assistance from the USAID-MCHIP project. Three CSUs located on the map in Figure 2 have been selected: Dabola, Mandiana, and Diakolidou. These three CSUs have already implemented the SBM-R process in the areas of EmONC, FP, and IP. In addition, the staff was trained in IMNCI. Among the three facilities, only Diakolidou had received the recognition of performance by the MOPHH.

Figure 2. Geographic location of the three pilot sites of the SBM-R for IMNCI

At the same time that the pilot sites were selected and that the providers were trained in clinical IMNCI, the IMNCI standards were developed at the national level. Then the onsite training and follow-up visits took place as described below.

Development of IMNCI Standards

The development of the standards began with a review of available documents, including standard SBM-R/IMNCI models developed in Afghanistan and Madagascar, the national policy documents related to child health and the IMNCI tools in Guinea, and the EmONC, FP, and IP standards already in use in Guinea. At the end of the review, a small team composed of IMNCI and SBM-R specialists developed a draft of IMNCI standards.

The draft was then presented to a group of national experts at a validation workshop, from 29 to 31 May 2013. Nineteen participants composed of members of the national SBM-R validation committee within the MOPHH, that include pediatricians working in health facilities in Conakry and from the regions, and members from institutions and NGOs working in the field of child health participated in this workshop.

Participants at the workshop meticulously checked the compliance of the suggested standards with the contents of the IMNCI table booklet and with the directives and recommendations of the national policies on child health.

Photo 2. Participants at the workshop to validate the IMNCI standards, Conakry, Mai 2013

Training of providers on the use of standards

The onsite training of service providers was organized from 6 to 8 October 2013 in the CSU of Dabola, from 10 to 12 October in the CSU of Mandiana, and from 14 to 16 November in the CSU of Diakolidou. The trainers traveled to the sites for a period of three days and targeted the following persons:

- A representative of the health district, in charge of ensuring subsequent local supervision
- The primary "in charge" provider, who is the first provider responsible for curative services (in all three sites these providers were trained in IMNCI)
- The substitute provider, generally an agent trained on the job, in charge of curative consultations in the absence of the primary provider

A total of five providers and three district supervisors were trained during this training series. The substitute provider in the CSU of Mandiana was not available. The training agenda was as follows:

- ***First day: evaluation of baseline performance and identification of gaps.*** In the morning, primary providers and their substitutes were observed by trainers during regular consultation hours. When possible, both providers were observed managing a newborn (age zero to seven days), an infant (one week to two months old) and a child (two months to five years). Otherwise, case simulations were organized to collect data against the set standards. In addition to evaluating the steps of case-management, the general organization of the service was also evaluated.
  The afternoon of the first day was spent on gap identification and the orientation of the two providers on the IMNCI performance standards.
- ***Second day: mentoring of providers.*** This day was spent mentoring providers on the use of the standards during the curative consultations. Again, simulations or case studies were introduced for cases (age groups or pathology) not seen during the consultations.
- ***Third day: post training assessment and feedback.*** During this day, primary providers and their substitutes were reevaluated through observations of their management of sick children. Feedback was provided by the team of trainers by notifying the providers of the trends in their performances.
  The identified gaps were discussed in the presence of the district supervisor, and then an Operational Action Plan (OAP) was developed to resolve any problems. Recommendations were formulated to ensure service improvements. An example of an OAP is presented in Table 1.

Local supervision by district staff

For the three CSU, the respective district health offices and thus the district trained supervisor were located in the same city as the health facility. After the training, the district supervisor supported the CSU team in the execution of the OAP. During supervisory visits, onsite coaching continued and logistical support from the district level was given.

Table 1. Example Extracted From The Operational Action Plan Developed at the Third Day of the Onsite Training at the CSU of Mandiana

Activities	Period	Person responsible
Brief the two alternate providers who were not available.	21–23 Oct 2013	Primary provider
Initiate the two alternate providers on the use of IMNCI standard.	21–23 Oct 2013	Primary provider
Organize self-assessment and assessments by peers.	24 Oct–11 Nov 2013	Primary provider
Assist the team in the analysis of the performance trends.	12 Nov 2013	District supervisor
Proceed to post-training follow-up.	From 13 Nov 2013	MCHIP District coordinator

Post-training follow-up visits

The first follow-up visit to monitor the use of IMNCI standards by trained providers took place about four weeks after the training. During the follow-up visit, the OAP was reviewed by one regional and one district supervisor who also assessed the general organization of the service. Recommendations and activities to be implemented during the next phase were included in a new OAP.

At the district level, the supervisor is in charge of regularly monitoring the implementation of the recommendations to address the gaps identified during onsite training. The district team is tasked to organize consecutive follow-up visits, unless specific additional support from the regional or national level is requested. When the CSU is ready for a final evaluation, the central and regional team will be involved again.

Preliminary Findings

Performance in Management of Sick Children

As mentioned above, the performance of respective providers is evaluated on site during the first day, prior to the training (baseline performance). The providers are re-evaluated on the third day at the end of the training (post-training performance). The trainers made another evaluation during the first follow-up visit. As summary of the results of these evaluations is presented in Figure 3.

At the CSU of Dabola, the change in performance from before to after the training was the most impressive in terms of the case management of sick children. The primary provider had 40% performance at baseline and reached full proficiency (a 100% score) during the post-training evaluation. For the substitute, the performance was nil at baseline but reached 82% at the end of the three-day training.

At the CSU of Mandiana, the substitute was on outreach for immunization services and not available during the training. Therefore, only the primary provider was assessed. His performance for management of sick children evolved from 70% at baseline to 92% during the post-training evaluation.

At the CSU Diakolidou, the performance of the primary provider evolved from 30% at baseline to 83% post-training for observed domains. The substitute, although not trained in IMNCI, had 18% of performance in baseline, which evolved to 59% post-training.

During the assessments during follow-up visits, all of the providers who attended the first training maintained a high level of standards in case management of sick children. The observed minimum was 84% from a substitute provider who improved from the lowest post-training performance of 59%. The rest had reached a performance of 90% or more during the first follow-up.

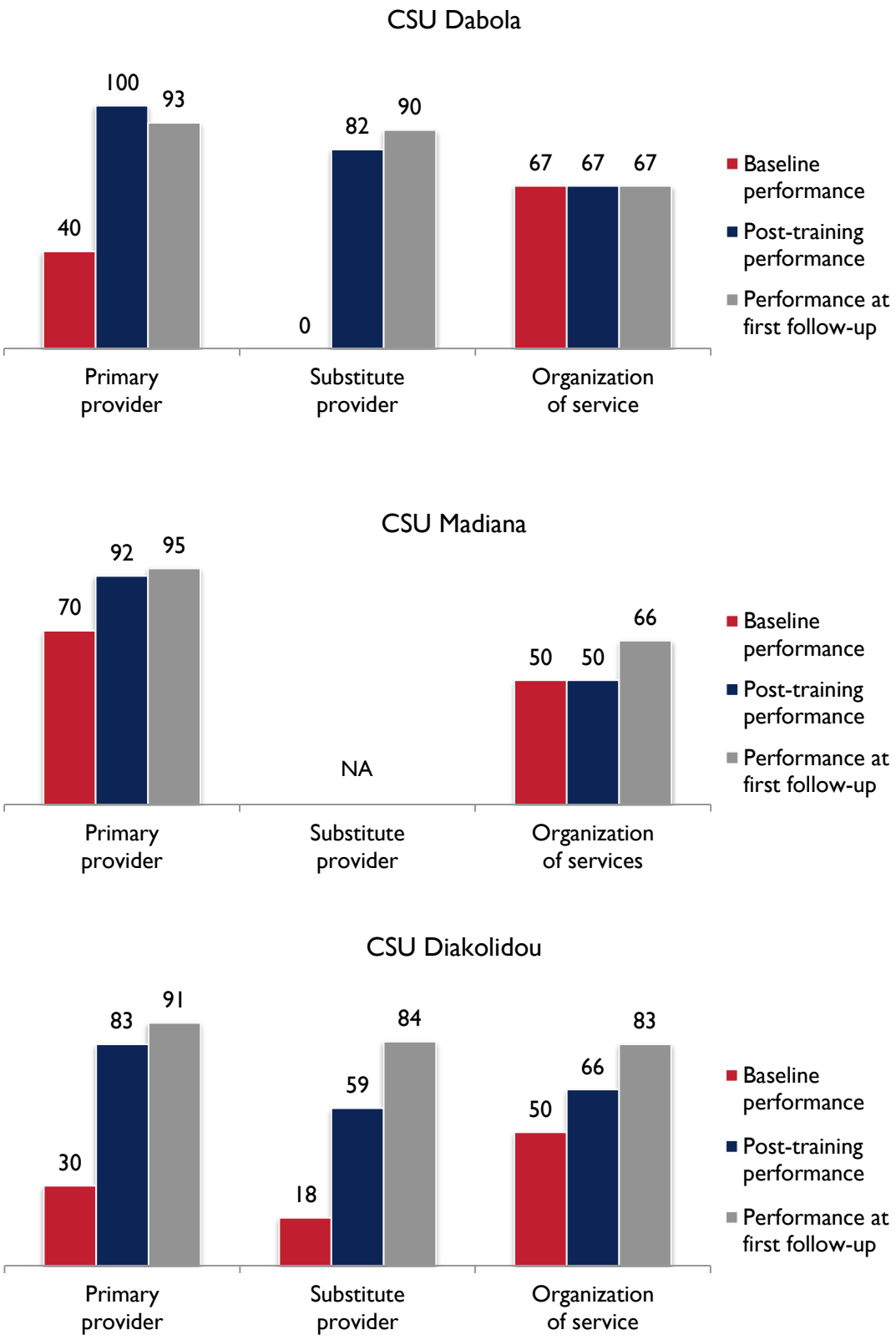
The substitute provider of the CSU of Mandiana was an exception. Due to unavailability during the training, he was trained on the use of IMNCI standards through mentoring by the primary provider after the departure of the trainers. His performance was only evaluated during the follow-up visit and he received a score of 68%.

Performance in Service Organization

At the CSU of Dabola, the performance in service organization has remained completely stagnant at 67% from baseline until the first follow-up visit. Despite the accomplishments of the providers on case management, the overall performance of the health facility did not exceed 80% during the post-training assessment because of the weakness in the service organization. Of the standards set for service organization that remained missing (zero score) from the baseline (pre-training) assessment were the nonexistence of a scale for children under five years of age (the only scale available was shared with the delivery room) and the lack of a timer to count the respiratory rate of children.

At the CSU of Mandiana, no corrective action could be taken during training, which explains the stagnation of the performance on service organization at 50% between the baseline and post-training. On the other hand, the team at the CSU was able to fix a number of problems after the training and reached 66% performance at the first follow-up visit. These include the installation of an Oral Rehydration Therapy (ORT) corner, the improvement of the confidentiality at the consultation room, the monthly data analysis on case-management of sick children, and the organization of regular meetings with the community health workers.

Figure 3. Trends in performance of the two providers in % of standards met at the CSUs of Dabola, Mandiana and Diakolidou



In the CSU of Diakolidou, the improvement in performance of the service organization was constant and steady from baseline until the first follow-up visit. The CSU had a service organization performance that evolved from 50% at baseline to 66% at post-training evaluation, and then to 83% at the first follow-up visit. This was the highest score among the three CSUs. Specific actions have been conducted during the three-day onsite training, including the immediate setup of the ORT corner. The only standard not met at the first follow-up visit was the regular meeting of the CSU team with the community health workers.

General Work Environment

The packages of SBM-R performance standards and IMNCI tools present some duplication. Although the performance standards accurately reflect the steps of the IMNCI approach, the supervisors consistently reported that the complementarity of tools and the different documents was not sufficiently understood by most providers. In practice, duplication was evident among the documents of SBM-R standards, the IMNCI table booklet, and the consultation register. This situation created an impression of additional burden by the service providers.

The management of work space and the organization of documents and tools are problematic. In all three CSUs, the primary provider sees adults and children in the same room. When the primary provider is not available, the substitute provider uses the same work space. It appears difficult for the providers to find the appropriate documents and tools because of problems with storage and arrangement of documents. An overview of the consultation room of one of the three CSUs is presented on Photo 3.

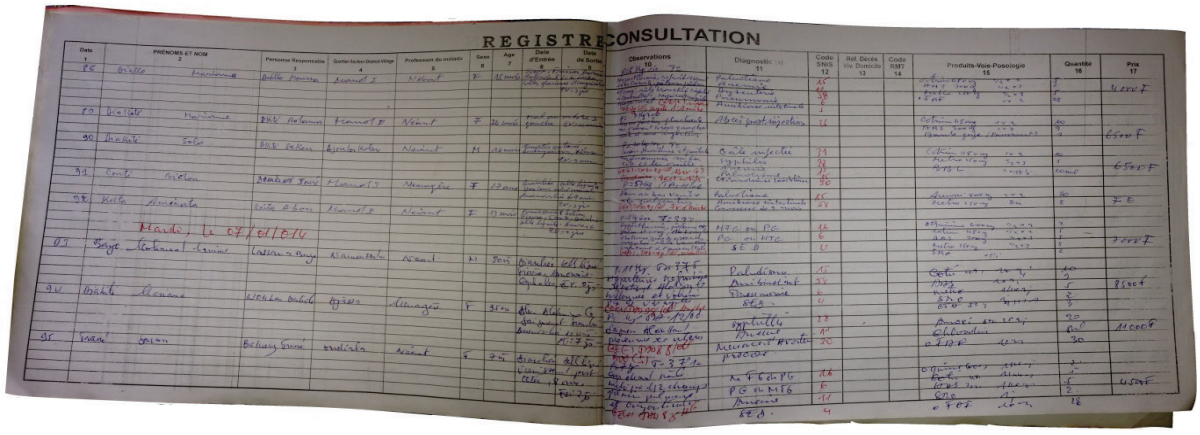
The waiting rooms are underutilized. Given the long waiting time prior to the consultation, these spaces could be used better to disseminate health messages. For example, the posters shown on Photo 4 all intend to share important messages, but are outdated, poorly organized, and not always adapted to the target audience. Yet such aspects were not part of the discussions during the SBM-R implementation process, because they were not explicitly on the list of standards to achieve.

The recommendations from supervisors and the documents for follow-up are poorly archived. Key documents are not permanently accessible by the providers or the supervisors to monitor the progress made. Although corrective measures have been identified and reviewed by the staff after the baseline evaluation, the copy of the action plans and the summary of the assessment are very difficult to retrieve. The providers do not appear to comprehend the importance of using the records of the findings and the operational action plans to track their respective progress in improving the management of sick children.

Photo 1. The two providers in the consultation room of the CSU of Dabola

Photo 2. Wall posters in the waiting room of the CSU of Mandiana

Photo 3. Pages of the case-management register at the CSU of Dabola, January 2014



The configuration of the register for the curative consultations is not consistent with the IMNCI procedures, making it difficult to check consistency between the classification of disease and the treatment. The individual forms used during the IMNCI training are not available in the health facilities and there is no plan to make them available. Thus, the providers are trying to use the space of the "Observations" column of the register to record the information during all consultation. As shown in the example in Photo 5, a width of about 10 cm. wide is not sufficient, despite the efforts of the service providers. We have been informed of a new register under development at the national level that would take into account these shortcomings.

The workload is a permanent challenge. For example, the staff in the CSU of Mandiana consisted of a nurse as primary provider, an Agent Technique de Santé as a substitute provider, and a midwife responsible for

antenatal care and delivery. The monthly report of the CSU in September, 2013—the month prior to the SBM-R/IMNCI training—reported a total of 1,122 curative consultations of which 462 were under-five children (first contact), 391 antenatal visits, and 20 deliveries. In other words, an average of 50 patients came in outpatient consultations at the CSU during the working days of this month, and one childbirth on average occurred two days out of three.

The problem of drug stock-outs has been variable in the three CSU involved in the SBM-R for the IMNCI. Amoxicillin for the treatment of pneumonia, the rapid diagnostic test (RDT), and the artemisinin-combined therapy (ACT) for the malaria case management and Oral Rehydration Salt (ORS) to rehydrate the children with diarrhea have all been available between November 2013 and April 2014. On the other hand, none of the three health structures has had zinc sulfate during the training on the use of IMNCI standards, even though it is very important for the treatment of diarrhea. At the first follow-up visit, the two CSUs of Dabola and Diakoulidou had been able to solve the problem of zinc.

There also have been stock-outs of other commodities, including injectable quinine for pre-referral treatment, paracetamol syrup to reduce fever, iron-folic acid to treat anemia, vitamin A for routine supplementation and to treat measles, and ciprofloxacin to treat bloody diarrhea. Nevertheless, the follow-up evaluation recorded a great improvement in the availability of these supplies.

The supervision by the regional level took place as planned and was appreciated by the providers. The supervision from the district health office varies from one facility to another, both in terms of quality and regularity, while district offices are in the same locality as the CSU. In addition, supervision visits to the other IMNCI sites (non-SBM-R) have been very limited or non-existent, which suggests that the efforts focused on SBM-R facilities have absorbed all the resources and the attention of the program managers, to the detriment of other sites.

The national integrated monitoring system is an opportunity for the institutionalization of the SBM-R approach. The MOPHH has implemented a system originally called "EPI Monitoring" designed to define the targets of the Expanded Program on Immunization and to monitor progress in all health facilities. The system has been extended to cover all key services and has since become an “Integrated Monitoring.”

All the health facilities of Guinea perform this exercise twice a year, and in the CSU of Dabola, the elements of the SBM-R action plan were included in the monitoring as presented in Table 2 for the month of December 2013. This indicates that the CSU health staff ingeniously took the initiative to integrate the process of the SBM-R in an institutionalized framework to get the required support from the health system.

Table 2. Elements of the Monitoring In Health Facility—IMNCI Section December 2013—CSU Dabola

DETERMINANTS	CURRENT LEVEL	STRATEGIES TO BE DEVELOPED	HOW?	WHERE?	WHEN?	BY WHOM?	WITH WHAT?	CHALLENGES
Low proportion of children assessed for cough, diarrhea and fever[1]	50%	Reinforce the capacities of the second and third care providers	Ongoing training	During out-patient visits	Every day from the beginning of the semester	The primary care provider	IMNCI documents	None
		Facilitate the use of SBM-R standards	Make the documents and tools available	At the health facility	From the beginning of the semester	MCHIP and the DHO	Budget of the Health Facility	
		Integrate the data from the CCM sites	Include the cases treated by the CHWs in the Health Facility Monitoring data	At the health facility	During the health facility monitoring	The primary care provider and the CCM supervisor	CCM register and fascicule of health facility monitoring	

The Cost

The initial implementation of the SBM-R at the health facilities focused on FP, EmONC and IP. After the IMNCI standards for SMB-R were developed at the central level, a formal training took place in the three study facilities, and follow-on visits were conducted. The financial costs tallying between $6,300 and $6,900 per health facility are detailed below.

Cost of the initial launch of SBM-R

This initial step was the establishment of the foundation of the SBM-R and the use of standards for FP, EmONC, and IP. It included mainly a group training of stakeholders and performance follow-up visits.

For the training of stakeholders, an average of four persons per site/facility participated, including two service providers, a manager and a representative of the community. Between two and six health facilities were grouped into a training session. At each training there was a MOPHH central trainer, two supervisors from the region, and two from the district. Table 3 shows an example of a budget for a series of three trainings involving two health facilities. The series of training courses includes three modules whose duration totals 12 days.

Table 3. Budget for a Series of Trainings in SBM-R Modules for Two Health Facilities

Components		Number of Participants	Budget for 2 sites x 1,000 GNF [Dollar US]	
Module 1	5 days	19	17,231	[$ 2,534]
Module 2	4 days	19	14,576	[$ 2,144]
Module 3	3 days	19	11,921	[$ 1,753]
		Total	43,728	[$ 6,431]
Average cost of implementing three modules per site				[$ 3,215]

Module 1 first provides a general overview of the concept and of the SBM-R tools, and then a review of baseline performance. Then Module 2 discusses the causes of the problems, develops interventions to address the gaps, and identifies the resources to be mobilized. Last, Module 3 addresses the persistent gaps, institutionalization, and sustainability of the approach.

In sum, to complete the series of three modules of training, an average budget of slightly more than $3,200 was allocated to each health facility.

With regard to the follow-up visit, the trainers travel for two days per SBM- R site. Table 4 shows an example of a budget for a series of two field visits organized consecutively in three sites. The first visit is for the assessment of the baseline performance in FP, EmONC, and IP, followed thereafter by the first follow-up visits.

Table 4. Budget for Follow-Up Visits to Three SBM-R sites

Stages		Budget 3 sites x 1,000 GNF [Dollar US]	
Baseline perf	6 days	10,300	[$ 1,515]
First follow-up	6 days	10,300	[$ 1,515]
	Total	20,600	[$ 3,030]
Average cost of a 2-day visit per site			[$ 1,010]

These are the first two visits that require the intervention of external evaluators and, consequently, have budgetary implications. The consecutive assessments are self-assessments involving district supervisors. In theory, the budgetary implications of supervision are minimal.

For an SBM-R site, the average cost of a visit to monitor performance amounts to a little more than $500, or about $1,000 for the two necessary visits

Cost of the formal IMNCI training

This is the training of the providers in case-management according to national guidelines. Table 5 presents the cost elements of a training that involved twenty providers, including the three primary providers of the three CSUs[7]. It was a six-day training according to a new shortened national curriculum.

[7] It should be mentioned that this training of providers was preceded by an orientation of the trainers on the new curriculum, with an average cost of approximately $460 per participant. Among 26 trainers who received the orientation, 10 were directly involved in the training mentioned in Table 5.

Table 5. Training Budget on Clinical IMNCI for 20 Providers

Cost elements	Budget 20 participants x 1,000 GNF (US Dollar)	
Lodging	45,000	[$ 6,618]
M&IE	36,370	[$ 5,349]
Transportation	10,387	[$ 1,528]
Consultant	6,600	[($ 971]
Food	7,200	[$ 1,059]
Logistics	3,840	[$ 565]
Total	109,397	[$ 16,088]
Average cost per participant		[$ 804]

The total training budget was just over $16,000 with each cost element presented in Table 5. A large part of the budget—84%—has been allocated to lodging, transportation, and M&IE for the participants during training.

The average cost per participant was still over $800, which is 20% lower compared to the cost of the 11-day course reported by MOPHH in 2010 (average cost $1,000 per participant) [8] but still 36% higher than the cost of a similar 6-day training observed in Rwanda in 2012 (average cost $513 per participant). [9] In addition to the specific contextual factors, the larger geographic distances and the fewer number of participants in the training (30 in Rwanda) could partly explain the difference.

Cost of initiating the use of SBM-R standards for IMNCI and cost of follow-up visits

The two CSU, Dabola and Mandiana respectively, received their trainings one after the other. The total cost of the three-day onsite training for Dabola and Mandiana was $1,563 or about $780 per site, while the introduction in Diakolidou—performed separately—cost more than $1,200, as shown in Table 6.

With regard to follow-up visits, the cost in Dabola was $499, in Mandiana $716, and in Diakoulidou $687.

Table 3. Budget for Onsite SBM-R/IMNCI Training and Budget for Follow-Up Visit

Stages		Budget per site x 1.000 GNF [Dollar US]					
		CSU Dabola		CSU Mandiana		CSU Diakolidou	
Introduction	3 days	10,630	[$ 1,563]	Combined budget for two sites		8,377	[$ 1,232]
First follow-up	2 days	3,390	[$ 499]	4,870	[$ 716]	4,670	[$ 687]
	Total	8,705	[$ 1,280]	10,185	[$ 1,498]	13,047	[$ 1,919]

In sum, the combined cost of the training in the use of IMNCI standards and one follow-up visit ranged from about $1,300 (Dabola) to $1,900 (Diakoulidou).

[8] MSHP Coordination Nationale PCIMNE. 2010. Auto-évaluation du programme de prise en charge intégrée des maladies de l'enfant et du nouveau-né - PCIMNE

[9] MCHIP. 2014. Promising and Best Practices for Child Survival in Rwanda, Ikiraro Project.

Discussions and Preliminary Lessons

Analysis of the Current Program

This section of the document summarizes the findings during the implementation of SBMR/IMNCI between October 2013 and March 2014 in the CSUs of Dabola, Mandiana, and Diakolidou. Some strengths and weaknesses were identified, while other aspects require further exploration.

Strengths

- **Peer coaching and self-learning through the SBM-R process harvested extraordinary results.**
  Given that the substitute providers did not receive formal training in IMNCI, the two involved in this initiative demonstrated tremendous achievement in terms of compliance to standards. Instead of formal training, they received on-the-job mentoring, used the SBM-R tools, and learned independently with coaching from their primary providers. Through this process, the substitute provider of Dabola went from a baseline score of nil to 90% at the first follow-up visit, while the substitute provider of Mandiana had 18% at baseline and reached 84% at the first follow-up visit.

  Although formal training should remain the standard, the preliminary results with substitute providers in Guinea indicate an important potential of the approach. At the same time, the process also allowed for self-learning by the supervisors at the district level, whose involvement in the training should ensure the continuation of the onsite monitoring and formative supervision.
- **IMNCI and SBM-R are major assets.**
  The providers of all three pilot sites were already implementing the SBM-R for EmONC, FP, and IP, which explains their familiarity with the principles and tools for SBM-R and their willingness to apply them immediately to the IMNCI. The process was facilitated by the fact that the primary providers had already acquired a good command of the IMNCI table booklet.
  In addition, the facilities already had the minimum equipment for case management of children, including an examination table, a scale, a measuring board, classification tools to assess nutritional status, and ORT kits for onsite rehydration.
- **Post-training follow-up and regular supervision are crucial.**
  The follow-up visit, organized about four weeks after the training, was highly appreciated by the providers. The SBM-R regional supervisor, accompanied by the district supervisor, reviewed the action plans to help resolve the identified deficiencies and assessed the competence of service providers. These follow-up visits were clearly important motivational factors for service providers.

Points to improve

- Certain problems, while relatively simple, are not corrected immediately at the site.
  - The three examples that follow illustrate corrective measures that have solutions within reach of the facility staff but that are not always taken into account:
  - The immunization cards were not routinely verified, whereas this is clearly part of the criteria for achieving the performance standards. This example is a simple reflex that could be easily corrected by habit.
  - The counseling provided to the caregivers on preventive measures, the administration of medicines

and the continuity of care at home, is consistently poor. Given the workloads of the CSU's personnel, actions to address this gap may require adjustments to the organization of work in the facility. Some of these tasks could be eventually delegated to other members of the team to allow the providers to take appropriate time for the assessment and the management of the sick child.

- The non-functioning of ORT corners, despite the availability of the installation kits, is an example of a non-rational priority ranking. Sometimes it is a simple lack of personal conviction, such as the response of a primary provider saying, "I have not installed the ORT corner because diarrhea is no longer a problem in our community, given that the population is sensitized enough on the use of the '*Sur'Eau.*'"[10]

In addition, other common-sense issues that are not explicitly in the list of standards, such as the organization of the posters in the waiting room, receive very little attention from the providers and the supervisors.

- **More complex problems require a stronger commitment at the higher levels of the health system.**
  Some problems are not within the reach of providers and would require intervention at the district level, and perhaps even beyond. The most important examples include the frequent stock-outs of the most essential medicines, particularly the zinc tablets. Since the providers are currently aware of the importance of these issues as barriers to achieving standards, and the district supervisors are directly involved in the process of implementation and follow-up of the SBM-R, it is acknowledged that fundamental steps have started. It is now important that the chain of decision-making follows to overcome the barriers.

  The mobility of trained providers—both primary and substitute—is completely outside the control of the staff at the health facilities, even of the district staff. Worries about the continuation of the ongoing efforts were clearly expressed in case the providers would be deployed elsewhere. According to experiences in the past, the reasons for mobility are often pursuit of training in the capital-city or simple re-assignment to a different facility decided at a higher level of authority.
- **The use of existing tools poses challenges**
  Some elements of the SBM-R and the IMNCI tools appear to be duplicated and are not properly used, and sometimes they create confusion or a sense of work overload. The following suggestions were collected during follow-up visits and should lead to simplification of tools and practical instructions to the providers:

  - Recommend that the providers use the table of IMNCI standards during the steps of assessment and classification of sick children, and then use the IMNCI table booklet during the identification of treatment. Another alternative would be to use the treatment tables or user-friendly job aids instead of the IMNCI booklet.
  - Recommend that the providers properly file the action plans and develop tools to encourage their efforts towards improvement. For example, display the key elements of the plan on the wall of the consultation room.
  - Recommend that providers systematically record the results of the self-evaluation and peer-evaluation sessions in a notebook to monitor the trends in individual performance of each provider.

[10] Solution de désinfection vendue à travers le réseau de marketing social

Points requiring further exploration

- **What is the impact of the approach on the quality and efficiency of all the services?**
  Although the preliminary results presented in this document suggest encouraging improvements in service provision, these conclusions were only based on a few observations of the task or case simulations. The adoption of systematic steps by the providers, based on quality standards, has already been clearly demonstrated[11] and was confirmed by our preliminary results.

  However, a study of the impact on how the overall health facility operates, involving a more representative sample of children, will be of great value to determine whether services are being produced in *greater quantity*, with *better quality* and *efficiency.*[12] The SBM-R field guide recommends comparison with control facilities, but such exploration will probably not be possible until a certain critical mass of health facilities applying SBM-R for IMNCI is reached.

- **The cost of implementation may seem exorbitant—Does the outcome justify the investment?**
  The budget figures presented in this report for the implementation of the approach in health facilities already implementing SBM-R would easily reach a total of $2,100 to $2,700 ($800 for the training of one provider in IMNCI, $800 to $1,200 for the introduction, and $500 to $700 for one follow-up visit). In addition, the costs of the first phase of the SBM-R introduction, including the three first technical areas, was an additional $4,200, bringing the total estimated cost to between $6,300 and $6,900 per health facility.

  These numbers might seem high relative to overall budget, but if the approach results in sustainably improving the quality of care offered to children, and making providers more efficient in their daily tasks, then the investment is justified.

  Nevertheless, the permanent search for alternatives—as pragmatic but less expensive as the approach tested in Guinea—must be of top priority of the child health program managers to enable the effective application of the principles of IMNCI in a large number of health facilities.

Potential for the Future in Guinea

The possibility of scale-up

In April 2014, there were only three sites where the providers trained in IMNCI and their substitutes applied the SBM-R in the case-management of under-five children in the prefectures of Dabola, Mandiana, and Beyla. Several scenarios were discussed in terms of scale-up:

- Scenario 1: Prioritize the health facilities having a trained provider in IMNCI to enroll in the next wave of introduction of the SBM-R, or undertake additional training of service providers in IMNCI in facilities already having introduced the SBM-R approach. In these scenarios, ***the same steps documented in this report could be replicated.*** The preliminary lessons presented here would apply immediately, but the implementation would take more time.
- Scenario 2: Test an innovative approach ***using personnel already trained in IMNCI to introduce the basic principles of the quality approach*** (which might be an adaptation of the SBM-R) in order to encourage the providers to apply the skills acquired during training in their daily practices. Indeed, in the

[11] MCHIP. 2012. *SBM-R Implementation: Successes and Challenges at Five Health Care Facilities in Guinea, July 2012.*
[12] Jhpiego. 2005. *Gestion axée sur les standards et récompense – Guide opérationnel.* Retrieved from https://www.k4health.org/toolkits/eonc/standard-based-management-and-recognition-field-guide-gestion-ax%C3%A9e-sur-les-standards.

prefectures of Dabola, Mandiana, and Beyla only, 15 health centers have providers trained in IMNCI but were not introduced to the concept of SMB-R as of April 2014. It is clear that this scenario would require substantial investments in design and adaptation of materials.

- Scenario 3: Test a ***practical orientation on the IMNCI procedures using the table of SBM-R standards*** with providers not formally trained in IMNCI but already practiced in the SBM-R of EmONC, FP, and IP. Indeed, among the 60 SBM-R sites in Guinea, 48 could potentially benefit from such an option (18 being in-patient hospitals). The experiences documented in this report have reported surprising skills acquired by the substitute providers not trained in IMNCI, which show the potential of this scenario. However, since the coaching by peers seems to have played a major role in the current experience, the necessary investment in design and adaptation would be even greater and, again, should be taken into account in the overall design.

During discussions between several program managers in Guinea, it was suggested to scale-up gradually. To start, the efforts should be focused in one district to facilitate monitoring and supervision while avoiding spreading efforts thinly. The center of the scale-up strategy should be strengthening self-evaluation and peer-evaluation, while improving monitoring by district staff.

The possibilities for sustainability

At the institutional level, the existence of a validation committee of the standards at the national level, increasing the number of sites where the SBM-R is applied to improve the quality of services and the integration of several technical areas, are all indications of the national commitment to sustain the approach in Guinea.

At the operational level, the MOPHH performs the monitoring of all health facilities in Guinea each quarter. The monitoring and reporting is the basis to request for resources and technical support. This monitoring, already institutionalized in the system, is an important opportunity to integrate the SBM-R action plan into an established system.

Conclusion

At the end of six months of using the IMNCI standards in the three SBM-R sites of the CSUs of Dabola, Mandiana, and Diakolidou, it appears that the standards of quality can be used to improve the practice of the IMNCI in the case-management of under-five children. The three sites were selected to initiate this experience due to the existence of providers trained in clinical IMNCI and the familiarity of the personnel in the SBM-R process in the field of EmONC, FP, and IP. However, due to the very short duration of the experience and the limited number of facilities involved, the findings can only be viewed as preliminary.

At each site, both primary providers who received formal training in IMNCI and their substitutes who were trained on the job demonstrated extraordinary progress in terms performance on the clinical management of sick children. The effects of peer coaching and self-learning through the SBM-R process were particularly notable in the substitute providers who did not have the basic skills. On the other hand, the staff had difficulties meeting the criteria related to the organization of services. The management of workspace, the filing of tools and documents, the simultaneous use of multiple documents, the workload, and the chronic unavailability of commodities were among the most important challenges.

In a site having already implemented the SBM-R, a budget of approximately $2,100 to $2,700 per health facility was needed to implement the approach, starting from the formal training of provider in IMNCI to one follow-up visit. By taking into account the initial investment on the sites, there would be an addition of $4,200— which brings the estimate to $6,300—$6,900 per health facility. This cost may high, but the expected benefits might justify the investment. This brief experience could not assess the impact of the approach on the overall quality of care, or on the efficiency of all the services offered.

The potential for sustainability of the SBM-R is real in Guinea. With a convinced and committed national committee, as well as an established system of integrated monitoring in all health facilities twice a year, the plans of action of the SBM-R could be integrated for shared accountability at all levels.

To have a tangible impact on child mortality, a ***large coverage of quality services*** is needed. Therefore, such a pragmatic approach as the SBM-R for IMNCI needs to be streamlined, and the search for an approach that is technically sound, financially affordable, and operationally acceptable by those involved daily in the field, must be of top priority of the public health community.

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