



MATERNITY OFFICER COACHING SESSION IN MALI | CREDIT: LAZARE COULIBALY

■ Case Study

## IMPLEMENTING A SMALL AND/OR SICK NEWBORN MODEL OF CARE

Early Experiences in Mali

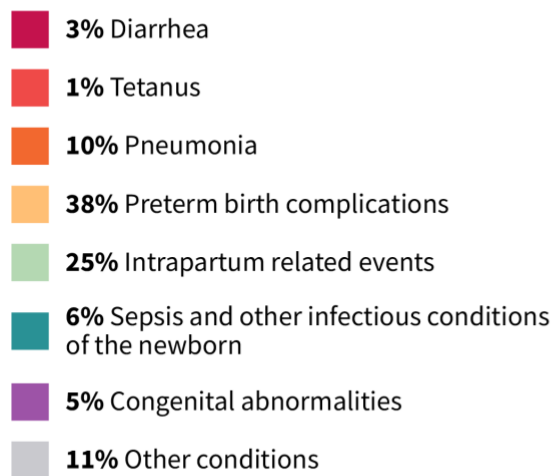
## BACKGROUND

In Mali, the neonatal mortality rate is 33 per 1,000 live births, representing an estimated 30,000 deaths per year (Sharro et al., 2023). According to the World Health Organization (WHO) and the Maternal and Child Epidemiology Estimation project, as cited by the Healthy Newborn Network (2020), the top causes of newborn deaths in Mali are preterm birth complications (38 percent), intrapartum-related events (25 percent), pneumonia (10 percent), and sepsis and other infectious conditions of the newborn (6 percent) (Figure 1).

### ACRONYMS

<b>ASACO</b>	Association de Santé Communautaire (community health association)
<b>CSCOM</b>	Centre de Santé Communautaire (primary community health center)
<b>CSREF</b>	Centre de Santé de Référence (referral health facility)
<b>HFA</b>	Health facility assessment
<b>IMNCI</b>	Integrated management of newborn and childhood illness
<b>KMC</b>	Kangaroo mother care
<b>PSBI</b>	Possible serious bacterial infection
<b>SSNB</b>	Small and/or sick newborn
<b>SSNC</b>	Small and/or sick newborn care
<b>WHO</b>	World Health Organization

**Figure 1. Causes of Neonatal Death in Mali, 2020**



Source: Healthy Newborn Network. (2020)

The Malian Government has long focused on improving the health and well-being of newborns. For example, in 2001, the government conducted a newborn health situational analysis, and in 2003 an essential newborn care package was developed for both the community and facility levels. By 2006, it had developed the Roadmap for Accelerating Reduction of Maternal and Neonatal Mortality (Franco et al., 2016).

Mali's current national strategy on newborn health outlines key interventions for reducing maternal and newborn mortality and builds on these previous policies and strategies.

Improving small and/or sick newborn care (SSNC) has been identified as a critical area of concern. In response, the government has prioritized select interventions for implementation, which are described by level of care in Table 1 (Ministère de la Santé et du Développement Social, 2023).

**Table 1. Newborn Interventions Provided at Different Levels of Care in Mali**

NEWBORN INTERVENTION	COMMUNITY LEVEL	LEVEL 1 Community health centers (CSCOMs)	LEVEL 2 District hospitals and referral health centers (CSREFs)	LEVEL 3 Tertiary hospitals
Basic essential newborn care	✓	✓	✓	✓
Emergency obstetric and newborn care (basic and comprehensive)		✓	✓	✓
Standard integrated management of newborn and childhood illnesses	✓	✓	✓	✓
Managing possible serious bacterial infection			✓	✓
Kangaroo mother care		✓	✓	✓
HIV and jaundice care				✓
Care for low birthweight and feeding problems			✓	✓

Source: Ministère de la Santé et des Affaires Sociales, 2019.

In May 2022, MOMENTUM Integrated Health Resilience supported a rapid health facility assessment (HFA) in 22 facilities in Gao and Timbuktu districts, including 20 primary health care facilities (Centres de Santé Communautaire or CSCOMs) and two public referral health facilities (Centres de Santé de Référence, or CSREFs) (MOMENTUM Integrated Health Resilience, 2022). The HFA identified multiple existing challenges to providing facility-based health services for mothers and newborns, including a lack of national guidelines and job aids for health care providers; lack of necessary training, supplies, and equipment to enable providers to manage complications during labor and delivery; and low staff capacity (specifically in newborn care) and high staff turnover in CSCOMs and CSREFs.

Based on these findings, and in line with the country’s national strategy, the Mali Ministry of Health and Social Development in Gao and Timbuktu districts has worked in collaboration with MOMENTUM Integrated Health Resilience to strengthen SSNC by training providers on integrated management of newborn and childhood illnesses (IMNCI) and improving the care provided at community and primary health care (Level 1) centers, particularly at CSCOMs and at CSREFs when a community center cannot manage a newborn case.<sup>1</sup>

This case study presents aspects, including key challenges and learnings, of the implementation of these efforts. Based on the implementation outcome variables defined by Peters et al. in their framework (Peters et al., 2013), this case study highlights the Mali experience to date with respect to appropriateness, adoption, and feasibility. The definitions of these measures are presented in Figure 2. The findings from Mali provide important information on what might work for SSNC implementation in similar fragile settings.

<sup>1</sup> The focus on Level 1 care was prioritized because it is more accessible than Level 2 care in the Gao and Timbuktu regions.

Figure 2. SSNC Implementation Outcome Measures

## SSNC IMPLEMENTATION OUTCOME MEASURES



### ACCEPTABILITY

The perception among stakeholders that an intervention is agreeable



### APPROPRIATENESS

The perceived fit or relevance of the intervention in a particular setting or for a particular audience or issue



### FEASIBILITY

The extent to which an intervention can be carried out in a particular setting

## PROGRESS TO DATE

**Appropriateness:** The project's focal geographic areas of support to the Government of Mali for SSNC are the health districts of Gao and Timbuktu. These districts are substantially affected by conflict; many roads are unsafe, creating significant barriers for families to travel to Level 2 facilities or district/provincial hospitals. For this reason, Level 1 facilities were prioritized for service provision for small and/or sick newborns (SSNB). Also, although the WHO SSNC model focuses on Level 2 facilities, Level 1 facilities (CSCOMs, with CSREF support) are the only operational facilities in Mali's conflict-affected northern region. Elements of and quality standards for SSNC were thus reviewed and adapted for Mali, with consideration for the different levels of care where services are provided.

In June 2022, MOMENTUM Integrated Health Resilience coordinated a national level workshop with representatives from the National Office for Reproductive Health to integrate the 2019 WHO guidelines on the management of possible serious bacterial infection (PSBI) in newborns and infants from birth to two months into the Malian IMNCI national protocols. Key partners in attendance included the Malian Association of Pediatricians, the Malian Society of Gynecologists and Obstetricians, the University of Bamako's Faculty of Medicine and Dentistry, and the National Institute of Training in Health Science.

**Adoption and feasibility:** District authorities selected facilities that were nearest and most accessible to communities; the project made further prioritizations based on budgetary feasibility. The selected facilities included 38 CSCOMs (20 in Gao and 18 in Timbuktu), two private clinics, and two CSREFs.

Components of the WHO SSNC model prioritized for focus in northern Mali are included in Table 2. While these areas focus on availability and quality of care at Level 1 facilities rather than Level 2 facilities, they are still important within the overall context of SSNC. Selection of these components demonstrates their relevance for service delivery regardless of facility level.



**Table 2. Components of the WHO SSNC Model of Care Prioritized for Implementation in Mali at National and Regional Levels**

SSNC MODEL COMPONENTS / ACTIVITIES	GAO REGION			TIMBUKTU REGION			NATIONAL
	Level 1 (CSCOMs)	District (CSREFs)	Region	Level 1 (CSCOMs)	District (CSREFs)	Region	
Vision							
Financing							
Human resources							
Recruitment				✓			
Training	✓	✓		✓	✓		
Retention	✓	✓	✓	✓	✓	✓	
Infrastructure							
Equipment							
Functional network (referral)		✓ (Financial)				✓	
Data systems	✓	✓ (Data entry and review support, VSAT*)	✓	✓	✓	✓	✓
Linkages							
Family/community involvement	✓				✓		
Post-discharge							

\* VSAT stands for Very Small Aperture Terminal, a form of earth-based satellite. VSAT is of importance in areas where internet connectivity cannot be directly or reliably provided.

Specific activities prioritized to improve SSNC at Level 1 facilities in the fragile context of northern Mali include: 1) kangaroo mother care (KMC) for low birthweight and premature newborns; 2) management of PSBI, including provision of outpatient care in cases where referral is not feasible, as part of the rollout of updated IMNCI guidelines; and 3) essential newborn care, including treatment of birth asphyxia and neonatal resuscitation. In addition, **training** of providers on the updated IMNCI guidance is planned in both districts for 2024, with MOMENTUM Integrated Health Resilience supporting the government’s regional trainers. Further, the regional government of Timbuktu has prioritized the strengthening of KMC at both CSCOMs and CSREFs, with MOMENTUM Integrated Health Resilience providing refresher training in essential newborn care to all supported facilities and in KMC to facility staff in Timbuktu. The training includes follow-up with trainees after four-to-six weeks to assess their performance, followed

by continuous improvement through coaching, mentoring, and supportive supervision by project staff and regional supervisors. Similarly trained staff in Gao include midwives, general doctors, and obstetric nurses.

To address the identified problem of **retention**, particularly challenging in more insecure areas of the country, MOMENTUM Integrated Health Resilience supported a national level discussion with stakeholders from the health sector, community members, and local political leaders. The discussion concluded with a recommendation to review challenges in human resources for health and develop a national strategic plan to improve retention of providers in the national health system.

Another key area of work to improve SSNC in northern Mali is addressing weaknesses in the region's **data systems**. At the facility level, there has been a focus on improving both the quantity and quality of data in birth registers. In Gao, this includes better documentation of gestational age and birthweight of newborns, which helps facility staff better understand the prevalence of prematurity and low birthweight in their patient population and better plan for service improvements. With the support of MOMENTUM Integrated Health Resilience, data entry and review are occurring at the district level.

With respect to **community involvement**, local community health associations (ASACOs) manage the day-to-day functions of the CSCOMs. ASACO leaders are elected by ASACO members and are responsible for the governance and

oversight of health centers, from ensuring providers are paid to keeping the pharmacy stocked. Participating CSCOMs advocate for the provision of basic equipment for SSNC that was found to be lacking during the HFAs, including respiratory rate counters, pulse oximeters, thermometers, and infant scales. In addition, MOMENTUM Integrated Health Resilience works with the CSCOMs to ensure that essential drugs for SSNC (including vitamin K, gentamicin drops, tetracycline 1%, chlorhexidine, and other antibiotics, as needed) are included in the baskets of essential provisions that ASACOs give to mothers and newborns.

In addition, ongoing conflict in the northern region has meant that ambulances formerly used to transport patients between CSCOMs and CSREFs and to ensure a **functional referral network** have been grounded for safekeeping. Based on experiences in other parts of the country, ASACOs in several communities have established caisses communautaires, or community funds, to provide transportation for mothers and newborns needing urgent care, whether from communities to CSCOMs or from CSCOMs to CSREFs. To date, these funding mechanisms have been created in five Gao communities and nine Timbuktu communities where MOMENTUM Integrated Health Resilience is providing technical support, with each community managing contributions to and use of funds



through their ASACO. ASACOs are also establishing communication and coordination mechanisms to help strengthen referral networks between communities, CSCOMs, and CSREFs so small and/or sick newborns (SSNBs) get the care they need in a timely manner.

Table 2 identifies the SSNC quality of care standards prioritized for implementation at primary level facilities in Gao and Timbuktu and at the national level. As noted above, significant national level focus has been on ensuring that **competent, motivated, empathetic, and multidisciplinary human resources** exist to support SSNC. In addition, efforts to support **respect, protection, and fulfillment of newborn rights** and **preservation of dignity** include incorporating language on non-separation of the mother-baby dyad into national guidelines. While essential newborn care and outpatient management of PSBI have been prioritized as **evidence-based practices** across facilities, government officials in Timbuktu have also prioritized strengthening implementation of KMC.

In Gao, the quality improvement efforts at CSCOMs include prioritizing the strengthening of birth registration on site and better documentation of prematurity and birthweight, including low birthweight, in registers. This prioritized information helps CSCOMs plan the resources required to care for SSNB based on an understanding of the prevalence of prematurity and low birthweight in their communities.

**Table 2. Quality of Care Standards for SSNC Prioritized for Implementation in Mali at National and Regional Levels**

STANDARD	GAO	TIMBUKTU	NATIONAL
1. Evidence-based practices	✓	✓	✓
2. Actionable information systems	✓	✓	
3. Functioning referral systems			
4. Effective communication and meaningful participation (of families/communities)			
5. Respect, protection, and fulfillment of newborn rights and preservation of dignity	✓		✓
6. Emotional, psychosocial, and developmental support			
7. Competent, motivated, and empathetic multidisciplinary human resources	✓	✓	✓
8. Essential physical resources for SSNBs	✓	✓	

## CHALLENGES

In addition to the ongoing contextual difficulty of maintaining basic functioning primary care services in a conflict-affected setting, other implementation challenges for SSNC-related efforts in northern Mali include a lack of governmental structures for coordinating partners at regional and district levels, such as a technical working group on maternal, newborn, and child health. However, there is coordination between government authorities and implementing partners at the regional level during the annual budgetary planning process, wherein partners agree to support activities, including Level 1 SSNC, within districts.

## LEARNINGS

The Mali experience illustrates the importance of continued strengthening of essential care for all newborns and care at primary level facilities to better identify and care for SSNBs. While the SSNC model was designed for Level 2 facilities, core components of the model prioritized by the Malian Government—such as **human resources training and retention, equipment, a functional referral network, data systems, and family/community involvement**—are important for thinking through SSNC at all levels of the health system. Further, Mali’s focus on community and Level 1 care is based on the feasibility of addressing the needs of SSNBs within a challenging context. Due to significant barriers to introducing SSNC at Level 2 facilities in the northern region, government and communities are working to address needs within the most functional existing health systems structures.

In Mali, communities play an important role in ensuring functional health systems through the management carried out by ASACOs. An important lesson learned is the need to engage with ASACOs and communities, strengthening their management capacities and involving them in planning and decision-making from the early stages.

## CONCLUSION


Mali’s experience in introducing SSNC in its northern region provides important learnings on what is appropriate and feasible within a challenging, conflict-affected setting. The Government of Mali, with the support of MOMENTUM Integrated Health Resilience and other key stakeholders, has focused on strengthening care that can be provided at Level 1 primary health facilities (CSCOMs) and public referral health facilities (CSREFs) and working with communities to improve care for SSNBs. Using baseline evidence from HFAs, they have prioritized components of the WHO SSNC model and quality of care standards for their context. These efforts illustrate Mali’s resilience and commitment to the well-being of one of its most vulnerable populations.

MOMENTUM Knowledge Accelerator is funded by the U.S. Agency for International Development (USAID) as part of the MOMENTUM suite of awards and implemented by Population Reference Bureau (PRB) with partners JSI Research and Training Institute, Inc. and Ariadne Labs under USAID cooperative agreement #7200AA20CA00003. For more about MOMENTUM, visit [www.usaidmomentum.org](http://www.usaidmomentum.org). The contents of this brief are the sole responsibility of PRB and do not necessarily reflect the views of USAID or the United States Government.

The authors would like to thank the individuals who provided technical feedback and review for this publication, including Adizatou Boubacar, Lazare Coulibaly, Katie Morris, Anaclét Ngabonzima, Joseph Obure, Aminata Traore, and Demba Traore. Special thanks to the MOMENTUM Integrated Health Resilience HQ and country teams who contributed to the activities summarized in this case study.


### Suggested Citation

Sharkey, A., Coulibaly, L., Nguyen, G., & Vaz, L.. (2023). *Implementing a small and/or sick newborn model of care: Early experiences in Mali*. USAID MOMENTUM.

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