Availability and Management of Emergency Obstetric Medicines in Mali: Survey Report, October 2009

Bintou Tine Traoré
Emmanuel Nfor
Djibril Bagayoko
Abdoulaye Bagayoko
Aoua Konaré
Modibo Diarra
Suzanne Diarra

Printed January 2011
Translated into English February 2011

Strengthening Pharmaceutical Systems
Center for Pharmaceutical Management
Management Sciences for Health
4301 North Fairfax Drive, Suite 400
Arlington, VA 22203, USA
Telephone: 703.524.6575
Fax: 703.524.7898
E-mail: sps@msh.org

This report is made possible by the generous support of the American people through the U.S. Agency for International Development (USAID), under the terms of cooperative agreement number GHN-A-00-07-00002-00. The contents are the responsibility of Management Sciences for Health and do not necessarily reflect the views of USAID or the United States Government.

About SPS

The Strengthening Pharmaceutical Systems (SPS) Program strives to build capacity within developing countries to effectively manage all aspects of pharmaceutical systems and services. SPS focuses on improving governance in the pharmaceutical sector, strengthening pharmaceutical management systems and financing mechanisms, containing antimicrobial resistance, and enhancing access to and appropriate use of medicines.

Recommended Citation

This report may be reproduced if credit is given to SPS. Please use the following citation.

Traoré, B. T., E. Nfor, D. Bagayoko, A. Bagayoko, M. Diarra, A. Konaré, M. Diarra, and S. Diarra. 2011. *Availability and Management of Emergency Obstetric Medicines in Mali: Survey Report, October 2009.* Submitted to the U.S. Agency for International Development by the Strengthening Pharmaceutical Systems (SPS) Program. Arlington, VA: Management Sciences for Health.

Strengthening Pharmaceutical Systems
Center for Pharmaceutical Management
Management Sciences for Health
4301 North Fairfax Drive, Suite 400
Arlington, VA 22203 USA
Telephone: 703.524.6575
Fax: 703.524.7898
E-mail: sps@msh.org
Web: www.msh.org/sps

CONTENTS

List of Tables

ACRONYMS AND ABBREVIATIONS

AMC	average monthly consumption
AMTSL	active management of the third stage of labor
CSCom	Centre de Santé Communautaire (Community Health Center)
CSRef	Centre de Santé de Référence (Referral Health Center)
DNS	Direction Nationale de la Santé (National Health Directorate)
DPM	Direction de la Pharmacie et du Médicament (Direction of Pharmacy and Medicine)
DRC	Dépôt Répartiteur de Cercle (*cercle* distribution store)
DRS	Direction Régionale de la Santé (Regional Health Directorate)
DVC	Dépôt de vente de cercle (*cercle* store)
FEFO	first-expired, first-out
MoH	Ministry of Health
NEML	National Essential Medicines List
NGO	nongovernmental organization
PPH	postpartum hemorrhage
PPM	Pharmacie Populaire du Mali (central medical store)
SDADME	Schéma Directeur d'Approvisionnement et de Distribution des Médicaments Essentiels (Essential Medicines Supply and Distribution Plan)
USAID	U.S. Agency for International Development
XOF	CFA franc, Communauté Financière Africaine (BCEAO)

EXECUTIVE SUMMARY

Worldwide, 1,500 women die each day because of complications related to pregnancy and childbirth, and 99 percent of these deaths occur in developing countries. Developed countries record less than 1% of these deaths each year,[1] thus demonstrating that such complications could be avoided if resources and sufficient services were available. The causes of maternal death are generally known. According to the United Nations Population Fund report on the state of the population, 80 percent of maternal deaths are due to obstetrical causes: hemorrhages, dystocia, abortions, and eclampsia.

In Mali, the demographic and health survey carried out in 2006 shows that maternal mortality is still high (464 maternal deaths for 100,000 live births). The leading causes of maternal death in Mali are dystocia (49 percent), hemorrhages (12 percent), high-risk abortions (9 percent), eclampsia (7 percent), infections (6 percent), and extra-uterine pregnancies (6 percent).

The active management of the third stage of labor (AMTSL) is administration of good-quality oxytocin in the minute following the birth of the baby. This intervention reduces by 60 percent the incidence of postpartum hemorrhage (PPH).

Mali adopted AMTSL as the strategy to fight PPH and magnesium sulfate as the first-line anticonvulsant for the treatment of eclampsia. Calcium gluconate is the antidote used in case of magnesium sulfate overdose. The availability, proper storage, and appropriate use of these products are critical conditions for the reduction of maternal mortality.

Assessment Objectives

- Determine the level of knowledge and practices of the personnel managing medicines and service providers on emergency obstetric medicines.
- Determine the availability of emergency obstetric medicines
- Describe transport and storage conditions for emergency obstetric medicines.
- Identify obstacles related to the application of standard guidelines and procedures regarding the management of medicines.
- Make recommendations to improve the management of key emergency obstetric medicines.

Methodology

The assessment was conducted in six regions of Mali and in Bamako, the capital city. In each region, the regional hospital and the regional medical store were included in the study. Two health districts per region and one functional community health center (Centre de Santé

[1] WHO, UNICEF, UNFPA, and World Bank. 2008. *Maternal Mortality in 2005*. Geneva: WHO.

Communautaire; CSCom) per health district were randomly chosen for the study. In Bamako, four referral health centers (Centre de Santé de Référence; CSRefs) on the commune level (Commune I, Commune II, Commune V, and Commune VI), one CSCom in each commune, and four medicine stores (PPM Initiative de BKO, PPM Korofina, PPM de la gare, and PPM de Daoudabougou) of the Pharmacie Populaire du Mali (PPM) were randomly included in the study. Questionnaires were administered to the Dépôts Répartiteurs de Cercle (DRCs), to the Dépôts de Vente (local stores) of the CSRefs, and to the managers of the delivery rooms of the various facilities visited.

Findings

Strengths

- The majority of delivery rooms were managed by a qualified person (62 percent are midwives).
- The majority of respondents in delivery rooms (93 percent) are familiar with oxytocin.
- The majority of the staff in charge of the delivery rooms (80 percent) know the appropriate time to use uterotonics (minute that follows the birth of the baby).
- The majority of respondents in delivery rooms withdraw periodically from the refrigerator a sufficient quantity of uterotonics, and none of the respondents keeps uterotonics in their pockets or on trays.
- Of the respondents, 75 percent have stock cards for uterotonics and keep them up to date.
- Of the pharmacy store managers, 92 percent arrange products well on shelves or on pallets.

Weaknesses to Be Improved

- Ten percent of the personnel managing emergency obstetric medicines have a primary-level education.
- Among the managers of medicines, 22 percent do not have any basic training.
- Only 23 percent of the study respondents know that magnesium sulfate is the medicine recommended for prevention and treatment of eclampsia.
- Ergometrine is little known by personnel.
- The knowledge of health care providers about calcium gluconate as the antidote in case of sulfate of magnesium overdose is very low (2 percent); in other words, 98 percent of respondents do not know this product.
- A significant proportion of the respondents are unaware that oxytocin (35 percent), magnesium sulfate (72 percent), and calcium gluconate (98 percent) are on the National Essential Medicines List (NEML).

- Twenty percent of the staff in charge of delivery rooms uses oxytocin at an inappropriate time (after expulsion of the placenta).

- Of the health facilities in the study, 37 percent get their uterotonic supply from PPM stores.

- Only 5 percent of medicine store managers in facilities visited and 40 percent of the staff in charge of delivery rooms were trained in the management of emergency obstetric medicines.

- Of the study respondents, 96 percent express the need for training in the management of emergency obstetric medicines

- More than a half the facilities visited do not have a copy of the NEML, a copy of the list of medicines for the kits for simple and complicated caesareans, and job aids on the management of uterotonics.

- Only 26 percent of the respondents send reports on the management of medicines to the higher administrative level.

- Midwives, senior health technicians, nurses, and lab technicians are unaware of good storage practices for uterotonics.

- Fifty-five percent of the staff in charge of delivery rooms and 92 percent of managers are unaware that magnesium sulfate is the medicine of choice for the treatment of eclampsia.

- Only 43 percent of health facilities surveyed have a functional refrigerator.

- Only 7 percent of the study respondents in health facilities record regularly the temperature of the refrigerator.

- The price of uterotonics is not uniform for facilities of the same level.

Recommendations

These findings led to the formulation of the following recommendations, organized by level of facility, to address the identified weaknesses.

To the Directorate of Pharmacy and Medicine and the National Health Directorate

- Ensure training on the management of emergency obstetric medicines for doctors in charge of surgery in health facilities.

- Ensure training and regular supervision for managers of medicine stores on the management of uterotonic medicines.

- Improve the supply of caesarean kits at health facility level.

- Disseminate at health facility level the NEML, the list of the medicines for simple and complicated caesarean kits, and job aids on the management of uterotonics.
- Ensure appropriate procurement to health facilities in uterotonics.
- Provide training to service providers on the management of oxytocin, magnesium sulfate, and calcium gluconate for the prevention and treatment of obstetrical emergencies.
- Scale up AMTSL strategy to reduce deaths dues to PPH.
- Reinforce good storage conditions of medicines.
- Standardize selling and purchasing prices of products at the different levels of the system.

To Regional Health Directorates

- Equip maternity centers and medicines stores with refrigerators.
- Ensure the regular supervision of health facilities in charge of providing services for obstetrical emergencies.
- Train service providers on the rational use of uterotonics, magnesium sulfate, and calcium gluconate.
- Promote the use of magnesium sulfate for the prevention and treatment of eclampsia.

To Health Districts

- Train and supervise the staff in charge of providing services for obstetrical emergencies on the management of emergency obstetric medicines.
- Reinforce the respect of the national strategic plan for procurement and distribution of essential medicines (Schéma Directeur d'Approvisionnement et de Distribution des Médicaments Essentiels; SDADME) at district level.
- Ensure the availability of emergency obstetric medicines at all levels in the district.
- Improve the storage conditions of uterotonic medicines.

To Community Health Centers

- Recruit managers for medicine stores having an educational level allowing them to adequately learn and apply norms for the management of medicines.
- Reinforce the respect of the cold chain and regular monitoring of temperatures for the storage of uterotonics.
- Correctly complete record keeping tools for management of uterotonics.

To the Ministry of Health Partners

- Support the Ministry of Health (MoH) to ensure the timely availability of caesarean kits at facility level to prevent depletion of facilities' own funds to procure these medicines.

- Support the MoH to develop and disseminate job aids on the management of uterotonics at health facilities.

- Assist the National Health Directorate (Direction Nationale de la Santé; DNS) and the Directorate of Pharmacy and Medicine (Direction de la Pharmacie et du Médicament; DPM) to improve the capacities of personnel in the following technical areas—

    - Prevention and treatment of eclampsia
    - Management of magnesium sulfate overdose
    - Prevention and treatment of PPH

- Assist the Reproduction Health Division (Division de Santé de la Reproduction) to disseminate technical guidelines on the management of eclampsia and PPH at all levels of the health system.

INTRODUCTION

Background

Every day, 1,500 women of reproductive age throughout the world die of complications from pregnancy and delivery; 99 percent of these deaths occur in developing countries.[2] Developed countries account for less than 1 percent of these deaths. They also demonstrate that these deaths could have been avoided if sufficient funds and services were available.[3] The risk of maternal death, which lasts an entire lifetime for women, is almost 40 times higher in developing countries than in developed countries. One in 1,800 women will die of complications related to pregnancy in developed countries compared with one in 48 in developing countries.[4] According to the United Nations Population Fund report on the state of the world's population published in 2004, approximately 80 percent of the deaths are directly caused by obstetric complications: hemorrhage, septicemia, abortion, pre-eclampsia or eclampsia, and dystocia. Among these causes, PPH ranks first and is responsible for about 30 percent of the cases of maternal death in the world.[5]

In Mali, a drop in the maternal mortality rate was noted between the two demographic health surveys of 2001 (DHS-III) and 2006 (DHS-IV), falling from 584 for 100,000 live births in 2001 to 464 for 100,000 live births in 2006, or a reduction of 20 percent.[6,7] Nevertheless, this rate is still too high. According to the situational analysis of the management of obstetric emergencies conducted in 2003, the most frequent causes of maternal death are dystocias (49 percent), hemorrhage (12 percent), high-risk abortions (9 percent), and eclampsia (7 percent). Over half these maternal deaths occur within 24 hours following delivery.[8]

Following the pilot phase of the PRIME II project to introduce AMTSL in Mali, which involved eight sites in Bamako, and thanks to the assistance of the U.S. Agency for International Development (USAID)/Mali, training on AMTSL was extended to other sites. Up to then, it involved only qualified professional birth attendants (physicians, midwives, and obstetric nurses). Matrons, who perform the majority of vaginal deliveries, especially in rural areas, were not authorized to use oxytocin and are still less trained in the AMTSL technique.

Therefore, the Reproductive Health Division, with the technical and financial assistance of Intrahealth, the Prevention of Postpartum Hemorrhage Initiative (POPPHI), and bilateral USAID projects (Abt Associates/Assistance Technique Nationale Plus and Care/Keneya Ciwara) demonstrated the feasibility of matrons' use of the AMTSL technique in the scope of

[2] WHO, UNICEF, UNFPA, and World Bank. 2008. *Maternal Mortality in 2005*. Geneva: WHO.
[3] Ibid.
[4] Ibid.
[5] *Maternal Mortality in 2000: Estimates Developed by WHO, UNICEF and UNFPA*. Geneva: World Health Organization, 2004.
[6] Cellule de Planification et de Statistique du Ministère de la Santé (CPS/MS), Direction Nationale de la Statistique et de l'Informatique (DNSI) et ORC Macro. 2002. *Enquête Démographique et de Santé au Mali 2001*. Calverton, MD: CPS/MS, DNSI et ORC Macro (EDS-III).
[7] Cellule de Planification et de Statistique du Ministère de la Santé (CPS/MS), Direction Nationale de la Statistique et de l'Informatique du Ministère de l'Économie, de l'Industrie et du Commerce (DNSI/MEIC) et Macro International Inc. 2007. *Enquête Démographique et de Santé du Mali 2006.* Calverton, MD: CPS/DNSI et Macro International Inc. (EDS-IV).
[8] Ministère de la Santé, Direction Nationale de la Santé. Feuille de route pour accélérer la réduction de la mortalité maternelle et néonatale au Mali, février 2008 (Ministry of Health, National Health Directorate. Roadmap for accelerating the reduction of maternal and neonatal mortality in Mali, February 2008).

an operational research project conducted in three CSRefs and 15 CSComs in the regions of Koulikoro, Sikasso, and Gao.

This study enabled the MoH, in consultation with the full cabinet, to make certain decisions that facilitated the continuation of efforts to make uterotonics more available.

Rationale

According to estimates, every year 14 million cases of hemorrhage related to pregnancy occur, and at least 128,000 of these women throughout the world die from hemorrhage. Most of these deaths occur within four hours after delivery and are caused by complications during the third stage of labor. PPH is the predominant cause of maternal death globally. It is the principal cause of maternal death in Africa.[9] In Mali, according to the situational analysis of management of obstetric emergencies conducted in 2003, hemorrhage is the second direct cause of maternal mortality (12 percent). Women die of PPH because they are not attended by qualified personnel. Use of AMTSL techniques makes possible reduction of the incidence of PPH by only 60 percent. It consists of—

- Administration of an oxytocic (preferably oxytocin) one minute after expulsion of the infant
- Controlled cord traction
- Uterine massage following delivery of the placenta

The availability of high-quality uterotonics is the key component for establishing AMTSL on a national scale. It contributes greatly to continued improvement in quality services for millions of women of reproductive age. According to the EDS-IV, the maternal mortality rate is 464 for 100,000 live births, which is high in terms of achieving the Millennium Development Goals by 2015.

A study conducted in four African countries (Benin, Burkina Faso, Cameroon, and Mali), which reviewed the policy and procedures for the use of oxytocics for AMTSL and prevention of PPH led to the following assessments—[10]

- Frequent stock-outs occur in all countries because of poor estimation of needs and poor definition of the buffer inventory.
- Oxytocics are used for other gynecological conditions besides the prevention of PPH, in particular to induce labor.

[9] International Confederation of Midwives (ICM) and the International Federation of Gynaecologists and Obstetricians (FIGO). 2006. *Prevention and Treatment of Postpartum Hemorrhage: New Advances for Low Resource Settings; Joint Statement,* p. 1.

[10] Rational Pharmaceutical Management Plus Program. 2006. *Review of Policy and Procedures on Use of Uterotonics for Active Management of the Third Stage of Labor and Prevention of Postpartum Hemorrhage in Four African Countries: Benin, Burkina Faso, Cameroon, and Mali.* Presented to the U.S. Agency for International Development by the Rational Pharmaceutical Management Plus Program. Arlington, VA: Management Sciences for Health.

- Accessibility of oxytocics is problematic because of their highly varied purchase prices.

- Central medical stores are unaware of the need for availability of oxytocics in the framework of a PPH prevention program, as is the case for vaccines and antiretrovirals.

- Weaknesses exist in the management of the cold chamber, except in Burkina Faso.

- The temperature display is very visible, but without a continuous recording system.

- No countries have a cold chamber maintenance program.

- Products are placed on pallets right on the ground with no arrangement to identify them, except in Burkina Faso.

- Cold chain organization and monitoring of oxytocic distribution in the regional stores of the central medical stores are not carried out in accordance with written and disseminated procedures.

The MoH currently has a national action plan for the prevention of PPH 2009–2012, and the Malian Gyneco-Obstetric Society committed to AMTSL commencing May 11, 2008. However, information on the current availability and management of uterotonics to prevent PPH is not available in Mali.

Eclampsia is the third largest cause of maternal mortality in the world. According to the World Health Organization, 70,000 cases of eclampsia per year can be expected in the world's 143 least developed countries. In Mali, eclampsia ranks third among the causes of maternal death after dystocia and hemorrhage.[11] It is a hypertensive condition common during pregnancy and easy to monitor. These conditions linked to high blood pressure appear at the end of pregnancy. Although they cannot be cured completely before delivery, randomized studies have shown that the administration of medicines such as magnesium sulfate can reduce the risk of potentially fatal convulsions in women and infants.[12]

An injection of calcium gluconate is recommended in cases of overdose in the administration of magnesium sulfate. Similarly, the National Reproductive Health Program has chosen magnesium sulfate to prevent and treat eclampsia.

Therefore, in the scope of strengthening the capacities of the MoH and its partners in the implementation of AMTSL, Management Sciences for Health, through its Strengthening Pharmaceutical Systems Program, is supporting the MoH in its goal to strengthen the pharmaceutical management of the key medicines indicated for the prevention and treatment of obstetric emergencies.

This evaluation aims to assess the availability, storage, and use of medicines for obstetric emergencies in Mali. It attempts to answer the following major questions—

[11] DHS-IV.
[12] The Eclampsia Trial Collaborative Group. 1995. Which anticonvulsant for women with eclampsia? Evidence from the Collaborative Eclampsia Trial. *Lancet* 345(8963):1455–63.

- What is the current level of availability and management of emergency obstetric medicines in the facilities visited: maternity hospitals, PPM regional stores, DRCs, CSRef and CSCom stores?

- What are the problems, in terms of the organization and function of the logistics system, in assuring the availability of emergency obstetric medicines?

- What are the level of knowledge and practices of health care providers and distributors in terms of the management of emergency obstetric medicines?

Research Hypothesis

Proper treatment for obstetric emergencies requires the availability and correct management of good-quality medicines.

This research expects to find that emergency obstetric medicines are not managed appropriately in health facilities in Mali. This situation reduces the optimal use of these products in the treatment of obstetric emergencies.

Objectives

General Objective

Assess the current situation in terms of the availability, storage, and use of key medicines for obstetric emergencies, including uterotonics, medicines to prevent and treat pre-eclampsia and eclampsia, and caesarean kits.

Specific Objectives

- Assess the knowledge and practices of distributors and health professionals vis-à-vis key medicines for obstetric emergencies.

- Assess the availability of key medicines for obstetric emergencies.

- Describe the shipping and storage conditions of the medicines.

- Identify the obstacles related to the application of standards and procedures for the management of medicines.

- Make recommendations to improve practices, availability, and management of key medicines for obstetric emergencies.

METHODOLOGY

The methodological approach is described below.

Type of Study

This is a transverse descriptive study. The study was conducted among health care providers, personnel responsible for medicine management in health facilities, managers of basic regional pharmacies, DRC managers, managers CSRef and CSCom stores, and delivery room managers.

Scope of the Study

The study was conducted in six regions of Mali (Kayes, Koulikoro, Sikasso, Mopti, Tombouctou, Gao) and Bamako District. In these locations, 20 *cercles* (equivalent to districts) were visited. In each of the regions, the survey concerned PPM stores, DRCs, local stores, hospital pharmacies, and maternity wards of the facilities surveyed.

Variables and Indicators

This study provides information on a group of variables and indicators, which are listed below.

Variables

- Availability of qualified personnel
- Supply sources (PPM, PPM regional stores, DRCs, CSCom stores)
- Storage conditions (temperature, moisture, ventilation, cold chain)
- Availability of emergency obstetric medicines (stock of uterotonics, caesarean kit, medicines for eclampsia)
- Use of emergency obstetric medicines
- Knowledge of emergency obstetric medicines
- Knowledge of the national emergency obstetric medicine management guidelines (worksheets)
- Purchase and sale prices of the targeted medicines

Indicators

- Proportion of qualified personnel available in the facilities

- Proportion of care facilities with the national guidelines (worksheets) on management of obstetric emergencies
- Proportion of facilities surveyed that have job aids for the management of uterotonics
- Proportion of health care providers who know the medicines recommended for use in obstetric emergencies
- Proportion of facilities surveyed that comply with the storage conditions for obstetric emergency medicines by category
- Proportion of facilities surveyed that had products for obstetric emergencies during the interviewer's visit
- Proportion of the facilities surveyed that had management tools for the key medicines
- Proportion of facilities that use medicine management tools correctly
- Proportion of facilities in compliance with SDADME pricing

Sampling

Selection of Regions

The regions selected vary in terms of the status of AMTSL training in their health districts—

- In the regions of Koulikoro and Mopti, 100 percent of districts are trained on AMTSL.
- In the Kayes region, none of the districts are trained.
- In the Sikasso region, 50 percent of the districts are trained.
- In the regions of Tombouctou and Gao and Bamako District, 100 percent of the districts are partially trained in AMSTL.

District Selection

In each of the regions and Bamako District, in addition to the regional store, two districts were randomly selected. In each district, the survey was conducted in the DRC, the store, and the delivery room.

Commune Selection

The communes were selected randomly. In each district, one operating CSCom was randomly drawn. In the CSCom sample, the stores and delivery rooms were included.

Choice of Individuals to Interview

In the health facilities, store or distribution store managers were included in addition to delivery room managers. Managers of hospital pharmacies and PPM stores were also involved. Table 1 summarizes the study sample.

Table 1. Sample

Sales Outlet Types	Number
PPM stores	9
Hospital pharmacies	5
DRCs	10
CSRef stores	10
CSCom stores	25
Total	60

Data Collection

The data were collected in the field by physicians, pharmacists, and midwives with confirmed experience with surveys of health professionals and in the management of pharmaceutical products. Three teams of four interviewers and one supervisor carried out the collection. The interviewers and supervisors were trained on the data collection tools. During the training, the tools were pretested and finalized prior to the collection of the data.

Collection Tools

Five tools were used to collect the data, namely—

- Questionnaire for medicine sales outlet managers
- Table for direct observation of medicine sales outlets
- Table for direct observation of medicine management in the delivery rooms
- Form for the availability and use of the key medicines
- Management tool stock cards for key medicines

Collection Methods

The data were primarily collected through the administration of a questionnaire, direct observation, and document review. Collection took 16 days because of the extent of the country and constraints in the field (the winter period).

Data Quality Control

To ensure the quality of the data collected, each interviewer ensured that the questionnaires were completed fully and correctly prior to leaving the centers visited. At the end of the day, the supervisors checked the quality of the questionnaires and completeness of the data and

returned to the surveyors any questionnaires that were partially or incorrectly completed. Problems or difficulties encountered were reviewed at daily meetings where solutions were proposed.

Compliance with Ethical Standards

Information was kept confidential in the course of this study. The informed consent of the study participants (interviewees) was requested verbally before the questionnaires were administered. The names of the people interviewed do not appear on any collection documents.

Data Entry and Analysis

The data were entered on Epi-Info version 3.5, and the analysis used SPSS software. The results were used to produce a report whose structure is consistent with the framework for Management Sciences for Health reporting.

RESULTS

General Information

Over half the people surveyed were women (65 percent; table 2).

Table 2. Distribution of Respondents According to Gender

Gender	Personnel	Percentage
Male	35	35
Female	65	65
All (n)	100	100

In the facilities surveyed, 39 percent of the people in charge of medicines had a secondary-level education and 30 percent had a higher level (table 3).

Table 3. Distribution of Respondents According to Education Level

Education Level	Frequency	Percentage
Primary	10	10
Fundamental	21	21
Secondary	39	39
Higher and up	30	30
Total	100	100

Basic Training (Delivery Room Manager)

Most delivery rooms are managed by midwives (62 percent; table 4).

Table 4. Distribution of Delivery Room Managers According to Their Basic Training/Qualifications

Basic Training/Qualifications	Frequency	Percentage
Matron	8	20
Nurse	3	8
Midwife	25	62
Physician	4	10
Total	40	100

Basic Training (Manager)

A total of 40 percent of the medicine managers have insufficient training; 22 percent have no basic training, and 18 percent are orderlies (table 5).

Table 5. Distribution of Managers According to Basic Training

Basic Training/Qualifications	Frequency	Percentage
No basic training	13	22
Orderly	11	18
Matron	4	6
Nurse	3	5
Midwife	1	2
Laboratory technician	1	2
Pharmacy technician	2	3
Health technician	1	2
Pharmacist	11	18
Accountant	13	22
Total	60	100

Seniority in the Position

Forty-five percent of the sales outlet managers have more than five years' seniority in their position (table 6).

Table 6. Distribution of Respondents According to Seniority in Their Position

	Time in the Position			
Position	0–6 Months	7–11 Months	1–5 Years	Over 5 Years
DRC manager	0	20	30	50
CSCom store manager	7	0	50	43
CSRef store manager	11	0	33	56
PPM manager	33	17	17	33
Pharmacist	14	0	43	43
All managers	13	7	35	45

Level of Knowledge

Knowledge of Emergency Obstetric Medicines on the NEML

The respondents have insufficient knowledge of the emergency obstetric medicines on the NEML. A significant proportion of the respondents do not know that oxytocin (35 percent), magnesium sulfate (72 percent), and calcium gluconate (98 percent) appear on the NEML (table 7).

Table 7. Distribution of Respondents According to Their Knowledge of Emergency Obstetric Medicines on the NEML

Medicines	Personnel (N = 100)	Percentage
Oxytocin	65	65
Ergometrine	6	6
Magnesium sulfate	28	28
Calcium gluconate	2	2
Diazepam	15	15

Respondents' Knowledge of the Medicines Recommended by the National Guidelines

Table 8 shows that 93 percent of the delivery room managers know that oxytocin is the uterotonic recommended as the medicine of choice to prevent and treat PPH, compared with 35 percent of the sales outlet managers. In contrast, only 23 percent of the respondents are familiar with magnesium sulfate (45 percent of the delivery room managers and 8 percent of the sales outlet managers). In other words, 55 percent of the delivery room managers and 92 percent of the sales outlet managers are unaware that magnesium sulfate is the medicine of choice for treatment of eclampsia.

Table 8: Distribution of Respondents According to Their Knowledge of the Medicines Recommended in National Guidelines (%)

Medicine	Delivery Room Managers (N = 40)	Sales Outlet Managers (N = 60)	All Respondents
Oxytocin	93	35	56
Magnesium sulfate	45	8	23

Respondents' Knowledge of Medicine Storage Guidelines

The storage guidelines for emergency obstetric medicines are generally misunderstood by a significant proportion of the respondents (table 9). At least 45 percent of the people surveyed do not know them, or 62 percent in the case of ergometrine. Only 3 percent of the respondents know the "first-expired, first-out" rule (FEFO).

Table 9. Distribution of Respondents According to Their Knowledge of Medicine Storage Guidelines

Storage Guidelines (n = 60)	Respondents Who Know the Storage Guidelines (%)
Oxytocin (2–8°C/30°C unrefrigerated for a maximum period of three months)	57
Ergometrine (box/shade)	28
Magnesium sulfate (room temperature 30°C)	58
Calcium gluconate (room temperature)	58
Diazepam (room temperature)	58
Compliance with the FEFO rule	3

Respondents' Knowledge of Storage Practices

Of those surveyed, 63 percent do not know good storage practices for emergency obstetric medicines (table 10).

Table 10. Distribution of Respondents According to Their Knowledge of Medicine Storage Practices

Practices	Personnel (N = 60)	Percentage
Compliance with the FEFO rule	2	3
Store oxytocin between 2° and 8°C	17	29
Store ergometrine in a box or in the shade	3	5
Other practices	38	63

Respondents' Knowledge of Transport Practices for Uterotonics

Of the 60 managers surveyed, 40 percent are not familiar with good transport practices uterotonics (table 11).

Table 11. Distribution of Respondents According to Their Knowledge of Transport Practices for Uterotonics

Practices	Personnel (N = 60)	Percentage
Keep the cold chain between 2° and 8°C	14	23
Place in a cooler	15	25
Could be shipped without refrigeration at 30°C for a short period	7	12
Other practices	24	40

Respondents' Knowledge of the Items to Be Checked upon Receipt of Uterotonics

Fifty-eight percent of respondents in the survey check the expiration date, compared with 23 percent who check the form, and only 2 percent check the administration route; 17 percent of respondents do not check any of these three basic items upon receipt of uterotonics (table 12).

Table 12. Distribution of Respondents According to Their Knowledge of the Items to Be Checked upon Receipt of Uterotonics

Items to Be Checked	Personnel (N = 100)	Percentage
Form	23	23
Administration route	2	2
Expiration date	58	58
Other	17	17

Delivery Room Managers' Knowledge of the Time to Administer Uterotonics

Eighty percent of delivery room managers know the time indicated for the administration of uterotonics (table 13).

Table 13. Distribution of Respondents According to Their Knowledge of When to Administer Uterotonics

Administration Time	Personnel (N = 40)	Percentage
The minute following expulsion of the infant	32	80
Just after delivery	8	20

Delivery Room Managers' Knowledge of Good Storage Practices for Uterotonics

Seventy percent of respondents periodically remove a sufficient quantity of uterotonics from the refrigerator, but only 5 percent of the respondents remove the ampoules from the box just prior to use, and 25 percent of delivery room managers are unaware of good storage practices for uterotonics (table 14).

Table 14. Distribution of Respondents According to Their Knowledge of Good Storage Practices for Uterotonics

Storage Practices	Personnel (N = 40)	Percentage
Periodically remove a sufficient quantity from the refrigerator	28	70
Remove the vials or ampoules from the box just prior to use	2	5
Leave uterotonics on trays or in one's pockets	0	0
Other practices	10	25

Medicine Managers' Knowledge of Uterotonics Storage Practices

According to table 15, only pharmacy technicians are familiar with good storage practices for uterotonics. Midwives, senior health technicians, nurses, and laboratory technicians do not know good storage practices for uterotonics.

Table 15. Distribution of Respondents Based on Their Knowledge of Uterotonics Storage Practices

	Storage	
Managers' Knowledge	**Poor Practices[a] (%)**	**Good Practices[a] (%)**
Pharmacist	36	64
Pharmacy technician	0	100
Midwife	100	0
Matron	75	25
Senior health technician	100	0
Nurse	100	0
Orderly	73	27
Laboratory technician	100	0
Accountant/manager	69	31
No basic training	42	57
Other	67	33
Total	62	38

a. *Good practices* mean that the respondent cited at least one storage practice recommended for uterotonics. *Poor practices* are all other practices not recommended by the guidelines.

Proportion of Respondents Who Are Aware of the Advantages of Completing the Management Tools

For most of the respondents, knowledge of the stock on hand is the most commonly known useful aspect of completing the management tools (58 percent), followed by retrospective use of the recorded data (10 percent). A small proportion of respondents know that completed tools provide knowledge of their facility's monthly (4 percent) and daily (5 percent) consumption.

Table 16. Distribution of Respondents According to Their Knowledge of the Advantages of Completing Tools

Advantages of Completing Tools	**Personnel (N = 100)**	**Percentage**
Knowledge of the stock on hand	58	58
Knowledge of the quantity dispensed per day	5	5
Knowledge of the facility's consumption for one month	4	4
Knowledge of when and how the medicines were used	7	7
Ability to use the recorded data for retrospective analysis	10	10
Other useful aspects of completing tools	16	16

Facilities' Supply Source for Emergency Obstetric Medicines

Supply Location

The PPM and DRC are the principal supply sources of uterotonics and medicines for eclampsia for health facilities. As for the caesarean kit, 68 percent of the facilities obtain them through the Regional Health Directorate (Direction Régionale de la Santé; DRS);

2 percent of facilities use private wholesalers for uterotonics and 5 percent use them for eclampsia medicines.

Table 17. Distribution of Facilities* According to Emergency Obstetric Medicine Supply Location (%)

Supply Location	Uterotonics	Medicines for Eclampsia)	Caesarean Kits
PPM	37	24	0
DRS	5	17	68
Hospital pharmacy	3	5	4
DRC	27	26	7
Cercle store (DVC)	2	2	0
Local store	18	14	0
DPM	0	0	21
Private wholesalers	2	5	0
Donations	1	0	0
Nongovernmental organizations (NGOs)	0	0	0

* N = 60.

Compliance with the Supply Plan

Most of the facilities visited follow the emergency obstetric medicine supply plan (table 18). Compliance with this plan is strict in terms of the facilities' supply of caesarean kits.

Table 18. Distribution of Products According to the Facilities' Compliance with the Supply Plan

	Facility Compliance with the Plan	
Products	**Personnel**	**Percentage**
Uterotonics (n = 54)	54	68
Medicines for eclampsia	35	69
Caesarean kits	20	7

Training

Table 19 shows that only 5 percent of medicine sales outlet managers were trained on the management of emergency obstetric medicines, and this percentage increases to 40 percent for delivery room managers. Ninety-six percent of respondents expressed the need for training on management of emergency obstetric medicines.

Table 19. Distribution of the Personnel Surveyed According to the Need for Training on Management of Emergency Obstetric Medicines (%)

Type of Personnel	Personnel Trained on Management of Emergency Obstetric Medicines	Personnel Who Expressed the Need for Training on Management of Emergency Obstetric Medicines
Sales outlet managers (n = 60)	5	98
Maternity hospital managers (n = 40)	40	92
All (N = 100)	21	96

Maintenance of Medicine Management Tools

Availability of Job Aids on Emergency Obstetric Medicines in the Facilities

Over half the facilities had neither the NEML (55 percent) nor the list of medicines in the simple or complicated caesarean kit (60 percent). Only 32 percent of the delivery rooms have worksheets or job aids on the management of uterotonics.

Table 20: Distribution of Types of Tools According to Their Availability in Facilities

Type of Tool	Availability in the Facilities (%)
NEML (n = 100)	45
List of medicines in the simple caesarean kit (n = 60)	40
List of medicines in the complicated caesarean kit (n = 60)	40
Worksheet/job aids on uterotonic management (n = 100)	32

Availability of Stock Cards for Emergency Obstetric Medicines and Medicine Stocks

Most of the facilities (91 percent) have stock cards for uterotonics. However, 47 percent and 46 percent of the facilities do not have stock cards for medicines for eclampsia and the caesarean kit, respectively (table 21).

Table 21. Availability of Stock Cards for Emergency Obstetric Medicines in the Facilities

Stock Cards	Facilities with Stock Cards (%)
Uterotonics (n = 60)	91
Medicines for eclampsia (n = 51)	53
Caesarean kit (n = 33)	54

Table 22 shows that all sales facilities had a sufficient amount of oxytocin 5 IU.

Table 22. Amount of Emergency Obstetric Medicines by Type of Facility

Medicine	PPM	Hospital Pharmacy	DRC	DVC	Local Store
Oxytocin 5 IU	12,571	7,547	1,800	2,127	2,347
Oxytocin 10 IU	0	655	1,699	1,559	952
Ergometrine 0.2 mg	8,509	1,978	1,180	63	330
Ergometrine 0.5 mg	230	0	19	43	313
Magnesium sulfate 0.2 mg	0	1,087	240	0	0
Magnesium sulfate 0.5 mg	50	160	28	1,100	0
Calcium gluconate	0	370	56	20	0

Average monthly consumption (AMC) of oxytocin 5 IU exceeds the AMC of oxytocin 10 IU in all facilities with the exception of the DRCs (table 23).

Table 23. AMC of Oxytocin 5 IU and 10 IU by Facility Type

Type of Store	AMC Oxytocin 5 UI	AMC Oxytocin 10 UI
PPM	577	166
Hospital pharmacy	269	121
DRC	61	203
RefHC store	60	17
COMHC store	47	27
All facilities	203	107

Stock Cards for Emergency Obstetric Medicines Updated by Respondents

Sixty-nine percent of the facilities keep uterotonics stock cards up-to-date correctly (table 24).

Table 24. Distribution of Respondents According to Correct Maintenance of Stock Cards

Stock Cards	Respondent Maintained Stock Cards Correctly (%)
Uterotonics (n = 53)	75
Medicines for eclampsia (n = 28)	86
Caesarean kit (n = 18)	83

Transmission of Reports on Consumption and Inventory Position of Emergency Obstetric Medicines to a Higher Level

Only 26 percent of the respondents transmit reports on consumption and inventory position of medicines to a higher level (table 25).

Table 25. Proportion of Respondents Who Transmit Reports on Consumption and Inventory Position of Emergency Obstetric Medicines to a Higher Level

Respondent	Transmission of Reports to a Higher Level (%)
Delivery room managers (n = 40)	10
Sales outlet managers (n = 60)	41
All (n = 100)	26

Compliance with Storage Conditions

Table 26. Proportion of Stores That Comply with Storage Guidelines for Emergency Obstetric Medicines

Storage Conditions	Personnel (n = 60)	Percentage
Stock/storage location is secure (locked door, wire mesh on the windows, locked cabinets)	52	87
Storage location is visibly free of harmful insects and rodents	50	83
Products are arranged well on shelves or pallets	55	92
Products are arranged so that identification labels and expiration or manufacture dates are visible	49	82
Products are stored and organized according to expiration dates (FEFO)	51	85
Boxes and products are in good condition	52	87
Boxes and products are protected from water and moisture	48	80
Products are protected from direct light and sun at all times	53	88
The store has operational refrigerators	26	43
The temperature of the cold chain is recorded and monitored regularly	4	7
Temperatures of the cold chain are between 2°C and 8°C	2	3
The cold chain is maintained regularly	17	28

Of the facilities surveyed, 92 percent arrange products well on shelves or pallets. Only 43 percent (26 sales outlets) of the local stores have operational refrigerators; the other 57 percent use refrigerators of the Expanded Program on Immunization or coolers. Only 4 of the 26 facilities that have operational refrigerators (7 percent) record the temperatures regularly. Of the four facilities that monitor the temperature regularly, only two have refrigerators with temperatures between 2° and 8°C, or 3 percent.

Availability of Medicines When the Interviewer Visited

Simple caesarean kits exist in 80 percent of the DRCs and 60 percent of the hospital pharmacies. Magnesium sulfate, which is the first-line product for the treatment of pre-eclampsia and eclampsia, is available in only 10 percent of the facilities for the 4 mg ampoule and 9 percent for the 2 mg ampoule. Oxytocin availability is 46 percent for the 5 IU ampoule and 34 percent for the 10 IU ampoule in all the facilities surveyed. This availability is low given that every woman who delivers must receive oxytocin to prevent PPH. Magnesium sulfate and calcium gluconate, which are considered products of the caesarean kits, are not found at the CSCom stores. Because the cesarean kits are free, they are not found in PPM stores.

Table 27. Distribution of Stores According to Medicine Availability When the Interviewers Visited (%)

Medicines Available	DRCs (n = 10)	Local Stores (n = 25)	DVCs (n = 11)	Hospital Pharmacies (n = 5)	PPM Stores (n = 9)	All Stores (n = 60)
Oxytocin 5 IU/ml ampoule	30	40	56	80	56	46
Oxytocin 10 IU/ml ampoule	50	36	33	20	11	34
Ergometrine 0.2 mg/ml ampoule	50	36	33	60	89	49
Ergometrine 0.5 mg/ml ampoule	11	17	11	0	11	12
Magnesium sulfate 4 g ampoule	10	0	22	20	22	10
Magnesium sulfate 2 g ampoule	20	0	0	60	0	9
Calcium gluconate 10 mg ampoule	30	0	22	80	0	15
Simple caesarean kit	80	NA	25	60	0	22
Complicated caesarean kit	67	NA	11	80	0	19

Note: NA = not applicable.

Prices of the Various Uterotonics in the Facilities

Average Purchase and Sale Prices of Uterotonics

Table 28. Distribution of Uterotonics According to Their Average Purchase and Sale Prices

Product	Average Purchase Price (XOF)	Sale Price (XOF)
Oxytocin 5 IU	110	135
Oxytocin 10 IU	110	140
Ergometrine 0.2 mg	190	200
Ergometrine 0.5 mg	340	370

Distribution of Facilities According to the Purchase Prices of Uterotonics

The sales price of oxytocin in the majority of facilities is more than the average purchase price. However, 59 percent of facilities sell ergometrine 0.2 mg below the average purchase price, and 67 percent of facilities sell ergometrine 0.5 mg at the average purchase price.

Table 29. Distribution of Facilities According to the Average Sale Prices of Uterotonics

Product	Proportion of Facilities That Sell below the Average Purchase Price (%)	Proportion of Facilities That Sell at the Average Purchase Price (%)	Proportion of Facilities That Sell above the Average Purchase Price (%)
Oxytocin 5 IU (n = 29)	21	10	69
Oxytocin 10 IU (n = 18)	11	17	72
Ergometrine 0.2 mg (n = 18)	59	3	38
Ergometrine 0.5 mg (n = 6)	33	67	0

Distribution of Facilities According to the Sale Prices of Uterotonics

The majority of facilities purchase uterotonics below the average purchase price (table 30).

Table 30. Distribution of Facilities According to the Average Purchase Prices of Uterotonics

Product	Proportion of Facilities That Buy below the Average Purchase Price (%)	Proportion of Facilities That Buy at the Average Purchase Price (%)	Proportion of Facilities That Buy above the Average Purchase Price (%)
Oxytocin 5 IU (n = 26)	65	11	24
Oxytocin 10 IU (n = 17)	59	18	23
Ergometrine 0.2 mg (n = 22)	69	4	27
Ergometrine 0.5 mg (n = 6)	60	0	40

Number of Deliveries and Caesareans by Facility

Of the facilities surveyed, 68 percent averaged 101 to 500 deliveries from January to June 2009 (table 31).

Table 31. Distribution of Facilities According to the Number of Deliveries from January to June 2009

Number of Deliveries	Personnel (n = 37)	Percent of Facilities
1 to 100	6	16
101 to 500	25	68
501 to 1,000	1	3
Over 1,000	5	13

Of the facilities surveyed, 53 percent performed an average of 1 to 100 caesareans (table 32).

Table 32. Distribution of Facilities According to the Number of Caesareans Performed from January to June 2009

Number of Caesareans	Personnel (n = 17)	Percent of Facilities
1 to 100	9	53
101 to 500	8	47
501 to 1,000	0	0
Over 1,000	0	0

Strengths and Weaknesses

The following strengths and areas for improvement emerged at the end of the survey.

Strengths

- Delivery rooms are maintained in most cases by qualified personnel (62 percent are midwives).
- Most respondents from delivery rooms (93 percent) are familiar with oxytocin.
- The majority of delivery room managers (80 percent) know the time to administer uterotonics (the minute following expulsion of the infant).
- Most respondents (70 percent) periodically remove a sufficient quantity of uterotonics from the refrigerator, and none of the respondents keep uterotonics in their pockets or on trays.
- Seventy-five percent of the respondents have stock cards for uterotonics and keep them up-to-date.
- Ninety-two percent of the store managers arrange products well on shelves or pallets.

Areas for Improvement

- Ten percent of the personnel managing emergency obstetric medicines have a primary-level education.
- Twenty-two percent of the medicine managers lack basic training.
- Only 23 percent of the people surveyed know magnesium sulfate as the medicine recommended to prevent and treat eclampsia.
- Ergometrine is not well known by personnel.

- Personnel have very limited knowledge (2 percent) of calcium gluconate as an antidote for magnesium sulfate overdose. In other words, 98 percent of respondents are not familiar with this product.

- A significant proportion of respondents do not know that oxytocin (35 percent), magnesium sulfate (72 percent), and calcium gluconate (98 percent) are on the NEML.

- Twenty percent of delivery room managers administer oxytocin at the wrong time (just after expulsion of the placenta).

- Thirty-seven percent of the facilities surveyed obtain new supplies of uterotonics at the PPM stores.

- Only 5 percent of medicine sales outlet managers in the facilities surveyed and 40 percent of the managers of delivery rooms have been trained on the management of emergency obstetric medicines.

- Nearly all (96 percent) of the respondents expressed the need for training on the management of emergency obstetric medicines.

- Over half of the facilities do not have the NEML, the list of medicines in the simple and complicated caesarean kits, and worksheets or memory aids on the management of uterotonics.

- Only 26 percent of the respondents send reports to a higher administrative level.

- Midwives, senior health technicians, nurses, and laboratory technicians do not use good storage practices for uterotonics.

- Fifty-five percent of the managers of delivery rooms and 92 percent of store managers do not know that magnesium sulfate is the medicine of choice to treat eclampsia.

- Only 43 percent of the facilities surveyed have operational refrigerators.

- Only 7 percent of the facilities surveyed record refrigerator temperatures regularly.

- The price of uterotonics varies according to the facilities.

COMMENTS

- Ten percent of the personnel managing emergency obstetric medicines have a primary-level education, and 22 percent have no basic training, which is a disadvantage in terms of knowledge of the products and understanding and completion of tools, in particular stock cards.

- The low level of knowledge of emergency obstetric medicines on the NEML—ergometrine (6 percent), calcium gluconate (2 percent), and magnesium sulfate as the medicine recommended for the treatment of eclampsia (23 percent)—must raise the awareness of decision makers to the need for training and supervision of personnel. These medicines play a crucial role in the management of obstetric emergencies. Personnel in the field on all levels of the health system must know how to use them and how to store and handle them.

- Thirty-seven percent of the facilities obtain uterotonics supplies directly from the PPM, which is contrary to the spirit of the SDADME policy. In the framework of this policy, sales outlets such as local stores and DVCs should refill their inventories at DRCs instead of the PPM.

- Ninety-six percent of respondents expressed the need for training on the management of emergency obstetric medicines, which correlates perfectly with the low level of education of the personnel and their insufficient in-service training.

- Over half of the facilities do not have the NEML, the list of medicines in the simple and complicated caesarean kits, and worksheets or job aids on the management of uterotonics. This explains insufficient monitoring and evaluation of the peripheral facilities, which nevertheless play a major role in the management of obstetric emergencies.

- Only 26 percent of respondents send reports on consumption and inventory position of medicines to a higher level. This, again, poses the problem of monitoring and supervision. The schedule for transmission of reports must be defined by the senior administrative level and applied to all levels.

- Only 7 percent of the facilities record refrigerator temperatures regularly. Regular monitoring could resolve these deficiencies.

- Oxytocin is the emergency obstetric medicine most well known by all the people interviewed in the scope of this survey. Sixty-five percent of respondents know that oxytocin is on the NEML. In contrast, this percentage falls to 56 percent in terms of knowledge of oxytocin as the uterotonic recommended in the national guidelines for the treatment of PPH. Magnesium sulfate, the medicine recommended to prevent and treat eclampsia, is not very well known and available only in facilities that perform caesareans. This shows that efforts should be made to put national guidelines on the treatment of PPH and eclampsia into general use.

- The supply of caesarean kits is not consistent. In fact, facilities must use their own funds to ensure free caesareans. This delay in supplies could lead to a dilution of capital of the stores (DRCs, DVCs).

- Midwives do not have good storage practices for uterotonics. This fact emerged from the study and is worrisome because they are the primary users of these medicines.

CONCLUSION AND RECOMMENDATIONS

The purpose of this study was to assess the availability and use of emergency obstetric medicines in Mali.

The National Reproductive Health Program in Mali has adopted AMTSL as a strategy for the prevention of PPH with oxytocin as the treatment of choice, and magnesium sulfate is used to prevent and treat eclampsia

This project showed that—

- Oxytocin ranks first among the available medicines as the uterotonic most well known by health workers (65 percent of all respondents and 93 percent of delivery room managers). This medicine is used and available in the health facilities; however, the price varies in the facilities.

- In contrast, only 28 percent of respondents know that magnesium sulfate is on the NEML, and worse yet, only 23 percent of respondents know magnesium sulfate is the medicine recommended for prevention and treatment of eclampsia. It is available only in health facilities where caesareans are performed. Therefore, promotion of the use of this product merits careful consideration.

- Calcium gluconate, which is recognized as the treatment of choice for magnesium sulfate overdoses, is not known by the providers (98 percent).

- Efforts also need to be made to improve the storage conditions of emergency obstetric products and the use of tools to manage these medicines to improve the quality of treatment in obstetric emergencies.

In view of this assessment, the following recommendations are made by levels of the health system.

To the DPM and DNS

- Ensure training on the management of emergency obstetric medicines for doctors in charge of surgery in health facilities.

- Ensure training and regular supervision for managers of medicine stores on the management of uterotonic medicines.

- Improve the supply of caesarean kits at health facility level.

- Provide facilities with the NEML, the list of medicines in the simple or complicated caesarean kits, and worksheets or job aids on the management of uterotonics.

- Provide training to service providers on the management of oxytocin, magnesium sulfate, and calcium gluconate for the prevention and treatment of obstetrical emergencies.

- Insist upon and put into general use the AMTSL strategy to reduce PPH.
- Ensure compliance with good packaging principles for the products.
- Make the sale and purchase prices of products uniform throughout the various facilities.

To the DRS

- Equip maternity centers and medicine stores with refrigerators.
- Regularly supervise health facilities with an operating suite for obstetric emergencies.
- Train personnel in the correct use of calcium gluconate.

To the Health Districts

- Train and supervise workers responsible for obstetric emergencies and medicine store managers.
- Ensure compliance with SDADME on all levels.
- Ensure the availability of uterotonics on all levels (CSRefs, CSComs).
- Improve storage conditions for uterotonics.

To the CSComs

- Hire managers (at stores) whose level of education enables them to follow the rules on medicine management.
- Complete uterotonics management tools correctly.

To MoH Partners

- Support the MoH to make caesarean kits available in a timely manner to avoid using these facilities' own funds.
- Support the MoH to make worksheets available in the facilities.
- Support the DNS and DPM to strengthen the staff's skills in the following areas—
    - Treatment of eclampsia
    - Treatment of magnesium sulfate overdoses
    - Treatment of PPH
- Support the Reproductive Health Division in putting into general use guidelines on the treatment of eclampsia and PPH.

ANNEX 1: DIRECT OBSERVATION FORM FOR ASSESSMENT OF THE MANAGEMENT OF MEDICINES USED FOR OBSTETRIC EMERGENCIES

Institution/Department/Unit:	**Type health facility:**
District:	**Date:**
Interviewer's name:	

Ask to see where the medicines are kept. (If this is not possible, request a detailed description of the place where medicines are kept.)

Questions	Yes	No	Comments
Is the stock/storage location secure (locked door/wire mesh on the windows, locked cabinets)?			
Are products arranged so that the identification labels and expiration or manufacture dates are visible?			
Are products stored and organized according to FEFO procedures?			
Are boxes and products in good condition?			
Are boxes and products protected from water and moisture?			
Are products protected from direct light and the sun at all times?			
Is the temperature recorded/monitored regularly?			
Note the current temperature of the storage place.			°C
Are the temperatures of the cold chain between 2 and 8°C?			
If yes, how is the cold chain maintained? (***Describe the procedures***)			
Do you provide products/medicines to other health facilities?			
If yes, is the temperature kept at 2°–8°C during the entire distribution period?			
Are operational refrigerators present in the store or warehouse?			
Are there vaccine carriers with coolers to transport medicines?			
Is the electric current regular? Well maintained and operational?			

ANNEX 2: QUESTIONNAIRES FOR MANAGERS OF REGIONAL PPM STORES, DRCS, LOCAL STORES, AND HOSPITAL PHARMACIES

State aloud: Hello. My name is _____. I work for an organization that is supporting the Reproductive Health Division of the National Health Directorate in the development of ways to improve maternal health. I am speaking to health workers who store or dispense medicine for pregnant women, especially uterotonics, medicines for the prevention and treatment of eclampsia, and medicines in the caesarean kit. Your name will not be written on this questionnaire or disclosed to officials. May I ask you a few questions?

□ The respondent **agrees** to the interview ⟶ *Begin the interview with Q1.*

□ The respondent **does not agree** to the interview ⟶ *End the interview.*

I have read the preceding statement and explained it to the respondent, and the respondent agrees to the interview.

Signature of the interviewer: _____Date: _____

Region:	**District:**	**Commune:**
Name of the interviewer:	**Date of the interview:** /___/___/ ___/___ / __/____/ Day Month Year	**Interview language:**
□ **PPM regional store** □ **RDC** □ **Local store** □ **Hospital pharmacy**		
The interview began at: _____ / _____ hour/minutes	**The interview ended at** _____ / _____ hour/minutes	

Sociodemographic information on the respondent:

Sex: M /___/ F /___/ Age (in years): /___/___/

Level of education: Higher and above /___/ Secondary /___/ Fundamental 2 /__/ Fundamental 1 /___/ None /___/

I. GENERAL INFORMATION

Q1	What is your basic training? *(Do not read. Listen to the answers and check all that are applicable.)*	1. Pharmacist 2. Pharmacy technician 3. Physician 4. Midwife 5. Matron 6. Senior health technician 7. Nurse 8. Orderly 9. Medical assistant 10. Laboratory technician 11. Accountant/manager 12. None 13. Other *(specify)* _____
Q2	What is your position as a health service provider?	1. Pharmacist 2. PPM store manager 3. DRC manager 4. Local store manager 5. Medical post chief 6. Other *(specify)* _____
Q3	How long have you held this position in this facility?	1. 0–6 months 2. 7–11 months 3. 1–5 years 4. >5 years
Q4	How long have you been employed at this facility?	1. 0–6 months 2. 7–11 months 3. 1–5 years 4. >5 years

II. KNOWLEDGE

Q5	Are you familiar with uterotonics to prevent postpartum hemorrhage?	1. Yes 2. No (Skip to Q7)
Q6	Are you familiar with the uterotonics on the National Essential Medicines List for the prevention of postpartum hemorrhage?	1. Yes 2. No (Skip to Q8)
Q7	If yes, what are the uterotonics on the National Essential Medicines List for the prevention of postpartum hemorrhage?	1. Oxytocin 2. Ergometrine 3. Syntometrine 4. Misoprostol (Cytotec) 5. Other *(specify)* _____
Q8	Are you familiar with the medicines for prevention and treatment of eclampsia?	1. Yes 2. No (Skip to Q10)
Q9	Are you familiar with the medicines on the National Essential Medicines List for prevention and treatment of eclampsia?	1. Yes 2. No (Skip to Q11)
Q10	If yes, what are the medicines on the National Essential Medicines List for the prevention and treatment of eclampsia?	1. Magnesium sulfate 2. Calcium gluconate 3. Diazepam 4. Other *(specify)* _____
Q11	What are good storage practices for uterotonics? *(Do not lead the interview. Check all responses mentioned spontaneously. The respondent must mention each aspect of the responses given.)*	1. Check the manufacturer's recommendations for the storage of each uterotonic 2. Follow the FEFO rule to reduce the risk of having expired products. 3. Preferably, keep injectable uterotonics between 2°C and 8°C 4. Store ergometrine and syntometrine in a box protected from light and freezing temperatures 5. Use a temperature monitoring system 6. Store misoprostol at room temperature in a closed box, protected from moisture 7. Other *(specify)* _____ 8. Do not know/do not recall
Q12	What are good practices for the transfer of uterotonics from the point of sale to the point of use (regional store, DRC, local store, delivery room)? *(Do not lead the interview. Check all responses mentioned spontaneously. The respondent must mention each aspect of the responses given.)*	1. Keep the cold chain between 2°C and 8°C 2. Place in a cooler with batteries 3. Could be transported without refrigeration at 30°C or lower for a short period 4. Other *(specify)* _____
Q13	What are the storage guidelines for oxytocin?	1. Keep between 2°C and 8°C 2. Could be kept unrefrigerated for a maximum period of three months at 30°C or lower. 3. Do not know 4. Other *(specify)* _____

Q14	What are the storage guidelines for ergometrine?	1. Keep in a box protected from light and freezing temperatures 2. If the ampoules are kept in the shade, short periods without refrigeration are tolerable (do not exceed four weeks at 30°C or two weeks at 40°C) 3. Do not know 4. Other (*specify*) _____
Q15	What are the storage guidelines for syntometrine?	1. Keep in a box protected from light and freezing temperatures 2. If the ampoules are kept in the shade, short periods without refrigeration are tolerable (do not exceed four weeks at 30°C or two weeks at 40°C) 3. Do not know 4. Other (*specify*) _____
Q16	What are the storage guidelines for misoprostol (Cytotec)?	1. Store at room temperature in a closed container 2. Do not know 3. Other (*specify)* _____
Q17	What are the storage guidelines for magnesium sulfate, calcium gluconate and diazepam?	1. Room temperature 2. Keep between 2°C and 8°C 3. Do not know 4. Other (*specify)* _____
Q18	What are the storage guidelines for celocurine?	1. Keep between 2°C and 8°C 2. Do not know 3. Other (*specify)* _____
Q19	What are the storage guidelines for celocurine?	1. Keep between 2°C and 8°C 2. Do not know. 3. Other (*specify)* _____
Q20	What are the storage guidelines for norcuron?	1. Keep between 2°C and 8°C 2. Do not know 3. Other (*specify)* _____
Q21	What are the items to be checked upon receipt of uterotonics? *(Do not lead the interview. Check all responses mentioned spontaneously. The respondent must mention each aspect of the responses given.)*	1. Form 2. Administration route 3. Expiration date 4. Other (*specify)* _____ 5. Do not know
Q23	Do you know what medicine is recommended in the national standard treatment guidelines for the prevention of postpartum hemorrhage?	Name of the medicine: _____ Do not know
Q24	Do you know what medicine is recommended in the national standard treatment guidelines for the treatment and prevention of eclampsia?	Name of the medicine: _____ Do not know

III. ORDERS

Q25	Do you personally manage the stock of uterotonics in your facility?	1. Yes 2. No
Q26	How do you estimate the facility's uterotonics requirements? *(Do not lead the interview. Check all responses mentioned spontaneously. The respondent must mention each aspect of the responses given.)*	1. Stock on hand 2. The AMC 3. Safety stock 4. All three together 5. General experience 6. Determined by the national program 7. Other *(specify)*_____
Q27	Do you personally manage the stock of caesarean kits in your facility?	1. Yes 2. No (Skip to Q30) 3. N/A (Skip to Q30)
Q28	How do you estimate the facility's caesarean kit requirements? *(Do not lead the interview. Check all responses mentioned spontaneously. The respondent must mention each aspect of the responses given.)*	1. Stock on hand 2. The AMC 3. Safety stock 4. All three together 5. General experience 6. Determined by the national program 7. Other *(specify)*_____
Q29	Do you personally manage the stock of medicines to prevent and treat eclampsia in your facility?	1. Yes 2. No
Q30	How do you estimate the facility's requirements for medicines to prevent and treat eclampsia? *(Do not lead the interview. Check all responses mentioned spontaneously. The respondent must mention each aspect of the responses given.)*	1. Stock on hand 2. The AMC 3. Safety stock 4. All three together 5. General experience 6. Determined by the national program 7. Other *(specify)*_____
Q31	What is the frequency of orders for uterotonics? *(Do not lead the interview. Check all responses mentioned spontaneously. The respondent must mention each aspect of the responses given.)*	1. Every week 2. Twice a month 3. Once a month 4. Once a year 5. When necessary 6. Other *(specify)* _____
Q32	Are the orders filled (quantity and time)?	1. Yes 2. No
Q 33	If no, why not?	1. Central-level stock-outs 2. Order not issued on time 3. Other *(specify)* _____
Q34	What is the frequency of orders for medicines to treat eclampsia? *(Do not lead the interview. Check all responses mentioned spontaneously. The respondent must mention each aspect of the responses given.)*	1. Every week 2. Twice a month 3. Once a month 4. Once a year 5. When necessary 6. Other *(specify)* _____
Q35	Are the orders filled (quantity and time)?	1. Yes 2. No
Q 36	If no, why not?	1. Long delivery period 2. Insufficient quantity received 3. Central-level stock-outs 4. Order not issued on time 5. Other *(specify)* _____

Q37	What is the frequency of the caesarean kit orders? *(Do not lead the interview. Check all responses mentioned spontaneously. The respondent must mention each aspect of the responses given.)*	1. Every week 2. Twice a month 3. Once a month 4. Once a year 5. When necessary 6. Other *(specify)* _____
Q38	Are the orders filled (quantity and time)?	1. Yes 2. No
Q39	If no, why not?	1. Long delivery period 2. Completeness of the kits 3. Central-level stock-outs 4. Order not issued on time 5. Other *(specify)* _____
Q40	Where do you obtain your supply of uterotonics?	1. PPM regional store 2. DRS regional store 3. DRC 4. Private wholesalers 5. Donations 6. NGO 7. Other *(specify)* _____
Q41	Where do you obtain your supply of caesarean kits?	1. DPM 2. DRS regional store 3. DRC
Q42	Where do you obtain your supply of medicine to prevent and treat eclampsia?	1. PPM regional store 2. DRS regional store 3. DRC 4. Private wholesalers 5. Donations 6. NGO 7. Other *(specify)* _____

IV. DISTRIBUTION/MANAGEMENT OF STOCK

Q43	Do you have stock registers or stock cards for uterotonics?	1. Yes 2. No (Skip to Q46) 3. Do not know (Skip to Q46)
Q44	If yes, are these cards/registers up-to-date? *Observe these materials before answering the question.*	1. Yes 2. No
Q45	Do you have stock registers or stock cards for caesarean kits?	1. Yes 2. No (Skip to Q48) 3. N/A (Skip to Q48) 4. Do not know (Skip to Q48)
Q46	If yes, are these cards/registers up-to-date? *Observe these materials before answering the question.*	1. Yes 2. No
Q47	Do you have stock registers or stock cards for medicines to prevent and treat eclampsia?	1. Yes 2. No (Skip to Q50) 3. Do not know (Skip to Q50)
Q48	If yes, are these cards/registers up-to-date? *Observe these materials before answering the question.*	1. Yes 2. No
Q49	How frequently are these cards updated?	1. Daily 2. Weekly 3. Monthly 4. Semi-monthly 5. Other *(specify)* _____
Q50	Is there a system for recording the transfer of uterotonics between the pharmacy and the delivery room?	1. Yes 2. No 3. Do not know
Q51	Is there a system for recording the transfer of caesarean kits between the pharmacy and the delivery room?	1. Yes 2. No 3. Do not know
Q52	Is there a system for recording the transfer between the pharmacy and the delivery room of medicines to prevent and treat eclampsia?	1. Yes 2. No 3. Do not know
Q53	What are the advantages of properly completing the management tools? *(Do not lead the interview. Check all responses mentioned spontaneously. The respondent must mention each aspect of the responses given.)*	1. Knowledge of the stock on hand 2. Knowledge of the quantity dispensed per day 3. Knowledge of the facility's consumption for one month 4. Knowledge of when and how the medicines were used 5. The ability to use the recorded data in a retrospective manner 6. Other (*specify*) _____

V. SUPERVISION AND SUBMISSION OF REPORTS

Q54	Do you prepare reports on the consumption and inventory positions of medicines?	1. Yes 2. No (Skip to Q57)
Q55	Does this report include uterotonics, caesarean kits, and medicines to prevent and treat eclampsia?	1. Yes 2. No (Skip to Q58)
Q56	a. If yes, where do you send the reports? _____ b. How do you send them? _____ c. What is the frequency? Daily /___/ Weekly /___/ Monthly /___/ Quarterly /___/ Biannual /___/ Annual /___/ Other (to be specified) /___/ d. What information do the reports contain? A. Quantity received /___/ B. Quantity distributed /___/ C. Quantity expired /___/ D. Quantity in stock /___/ E. Other (to be specified)	
Q57	Do you have a direct supervisor?	1. Yes 2. No 3. Do not know
Q58	a. If yes, what is your direct supervisor's position? 1. Regional director /___/ 2. Regional pharmacist /___/ 3. Chief of staff /___/ 4. Medical post chief /___/ 5. Hospital administrator /____ / 6. Other (to be specified) _____	
Q59	When was the last time your direct supervisor visited you?	1. This month 2. Last month 3. Three months ago 4. Six months ago 5. Other *(specify)* _____ 6. Never (Skip to Q63) 7. Do not know
Q60	What did your supervisor see/supervise when he or she was here?	1. Check stock cards 2. Look at consumption trends 3. Look at storage conditions 4. Consolidate requirements 5. Check physical stock 6. Observe the management of expired and broken products 7. Other *(specify)* _____
Q61	Did your supervisor share his or her comments and reactions?	1. Yes 2. No
Q62	Are you the immediate supervisor of other managers?	1. Yes 2. No (Skip to Q66)
Q63	What positions do you supervise? *(Provide the list of those that you supervise below, without using their names, and add any comments in the response coding/column.)*	
Q64	What do you do when you supervise?	1. Check stock cards 2. Look at consumption trends 3. Look at storage conditions 4. Consolidate requirements 5. Check physical stock 6. Observe the management of expired and broken products 7. Other *(specify)* _____

VI. TRAINING

Q65	Have you been trained on the management of medicines used for obstetric emergencies, in particular uterotonics, in the last 12 months?	1. Yes 2. No ***[Skip to Q69]*** 3. Do not know ***[Skip to Q69]***
Q66	Did you complete the entire training properly?	1. Yes 2. No ***[Skip to Q69]***
Q67	Have you had the opportunity to put into practice what you learned?	1. Yes 2. No
Q68	Do you think you need practical training to feel more confident using standardized procedures for the management of medicines used for obstetric emergencies, in particular uterotonics?	1. Yes 2. No ***[Skip to Q71]***
Q69	If yes, on what aspects of the management of uterotonics and other medicines for obstetric emergencies?	1. Storage 2. Preservation 3. Transport 4. Use 5. All subjects
Q70	Has your supervisor (on-site) informed you of the management of medicines used for obstetric emergencies, in particular uterotonics and medicines for eclampsia and caesareans?	1. Yes 2. No

VII. TOOLS

Q71	Do you have a copy of the National Essential Medicines List?	1. Yes 2. No 3. Do not know
Q72	Do you have a copy of the list of medicines comprising the simple caesarean kit? *(make a copy of the list)*	1. Yes 2. No 3. Do not know
Q73	Do you have a copy of the list of medicines comprising the complicated caesarean kit? *(make a copy of the list))*	1. Yes 2. No 3. Do not know
Q74	Does your facility have worksheets, such as job aids, on the management of uterotonics?	1. Yes 2. No 3. Do not know
Q75	If yes, where are these worksheets? _____	
Q76	Are these sheets easy to understand? Yes/___/ No/___ /	
Q 77	If no, what are the problems in understanding these sheets?	
Q78	During supervision, do your supervisors assess the workers' comprehension of these worksheets? □ Yes □ No	

Interview end time /___/___/

ANNEX 3: QUESTIONNAIRES FOR DELIVERY ROOM MANAGERS (PHYSICIANS, MIDWIVES/OBSTETRIC NURSES/MATRONS)

State aloud: Hello. My name is _____. I work for an organization that is supporting the Reproductive Health Division of the National Health Directorate in the development of ways to improve maternal health. I am speaking to health workers who store or dispense medicine for pregnant women, especially uterotonics, medicines for the prevention and treatment of eclampsia, and medicines in the caesarean kit. Your name will not be written on this questionnaire or disclosed to officials. May I ask you a few questions?

□ The respondent **agrees** to the interview ⟶ *Begin the interview with Q1.*

□ The respondent **does not agree** to the interview ⟶ *End the interview.*

I have read the preceding statement and explained it to the respondent, and the respondent agrees to the interview.

Signature of the interviewer: _____Date: _____

Region:	**District:**	**Commune:**
Name of the interviewer:	**Date of the interview:** /___/___/ ___/___ / __/____/ Day Month Year	**Interview language:**
□ **CSRef** _____ □ **CSCom** _____		
The interview began at: _____ / _____ hour/minutes	**The interview ended at** _____ / _____ hour/minutes	

Sociodemographic information on the respondent:

Sex: M /___/ F /___/ Age (in years): /___/___/
Level of education: Higher and above /___/ Secondary /___/ Fundamental 2 /__/
Fundamental 1 /___/ None /___/
Profile: Physician/___/ Midwife/___/ Obstetric Nurse/___/
Matron /___/ Lead midwife /____/ Other (specify) _____

I. KNOWLEDGE

Q1	Are you familiar with the uterotonics on the National Essential Medicines List for the prevention of postpartum hemorrhage?	❑ Yes ❑ No
Q1.1	If yes, what are the uterotonics on the National Essential Medicines List for the prevention of postpartum hemorrhage?	1. Oxytocin 2. Ergometrine 3. Syntometrine 4. Misoprostol (Cytotec) 5. Other *(specify)* _____
Q1.2	If no, what uterotonics are you familiar with?	1. Oxytocin 2. Ergometrine 3. Syntometrine 4. Misoprostol (Cytotec) 5. Other *(specify)* _____
Q2	Are you familiar with the medicines on the National Essential Medicines List for the prevention and treatment of eclampsia?	❑ Yes ❑ No
Q2.1	If yes, what are the medicines on the National Essential Medicines List for the prevention and treatment of eclampsia?	1. Magnesium sulfate 2. Calcium gluconate 3. Diazepam 4. Other *(specify)* _____
Q2.2	If no, what medicines are you familiar with to prevent and treat eclampsia?	1. Magnesium sulfate 2. Calcium gluconate 3. Diazepam 4. Other *(specify)* _____
Q3	Do you know what medicine is recommended in the national standard treatment guidelines for prevention of postpartum hemorrhage?	Name of the medicine: _____ ❑ Do not know
Q4	Do you know what medicine is recommended in the national standard treatment guidelines for prevention and treatment of eclampsia?	Name of the medicine: _____ ❑ Do not know
Q5	What are good use/handling practices for uterotonics in a delivery room? *(Do not lead the interview. Check all responses mentioned spontaneously. The respondent must mention each aspect of the responses given.)*	1. Periodically remove a sufficient quantity from the refrigerator for the anticipated requirements and place in the vaccine carrier 2. Remove the vials or ampoules from the box just prior to use 3. Do not leave uterotonics on trays or in one's pockets 4. Other (*specify*) _____
Q6	What are the storage guidelines for oxytocin?	1. Keep between 2°C and 8°C 2. Could be kept unrefrigerated for a maximum period of three months at 30°C or lower 3. Do not know 4. Other *(specify)* _____
Q7	What are the storage guidelines for ergometrine?	1. Keep in a box protected from light and freezing temperatures 2. If the ampoules are kept in the shade, short periods without refrigeration are tolerable (do not exceed four weeks at 30°C or two weeks at 40°C) 3. Do not know 4. Other (specify) _____

Q8	What are the storage guidelines for syntometrine?	1. Keep in a box protected from light and freezing temperatures 2. If the ampoules are kept in the shade, short periods without refrigeration are tolerable (do not exceed four weeks at 30°C or two weeks at 40°C) 3. Do not know 4. Other (specify) _____
Q9	What are the storage guidelines for misoprostol?	1. Store at room temperature in a closed container 2. Do not know 3. Other (*specify)* _____
Q10	What are items should be checked prior to the administration of a uterotonic? *(Do not lead the interview. Check all responses mentioned spontaneously. The respondent must mention each aspect of the responses given.)*	1. Form 2. Administration route 3. Expiration date 4. Other (*specify)* _____ 5. Do not know
Q11	At what time should uterotonics be administered to women to prevent postpartum hemorrhage?	1. During labor 2. In the minute following expulsion of the infant 3. Just after delivery 4. Do not know 5. Other *(specify)* _____
Q12	What are the advantages of properly completing the tools to manage medicines used in the delivery room? *(Do not lead the interview. Check all responses mentioned spontaneously. The respondent must mention each aspect of the responses given.)*	1. Knowledge of the stock on hand 2. Knowledge of the quantity dispensed per day 3. Knowledge of the facility's consumption for one month 4. Knowledge of when and how the medicines were used 5. The ability to use the recorded data in a retrospective manner 6. Other (*specify*) _____

II. ORDERS

Q13	Do you personally manage the stock of uterotonics in the maternity hospital?	1. Yes 2. No (Skip to Q15)
Q14	How do you estimate the maternity hospital's uterotonics requirements? *(Do not lead the interview. Check all responses mentioned spontaneously. The respondent must mention each aspect of the responses given.)*	1. Stock on hand 2. The AMC 3. Safety stock 4. All three together 5. General experience 6. Determined by the national program 7. Other *(specify)*_____
Q15	Do you personally manage the stock of caesarean kits in your maternity hospital?	1. Yes 2. No (Skip to Q17) 3. N/A (Skip to Q17)
Q16	How do you estimate the facility's caesarean kit requirements? *(Do not lead the interview. Check all responses mentioned spontaneously. The respondent must mention each aspect of the responses given.)*	1. Stock on hand 2. The AMC 3. Safety stock 4. All three together 5. General experience 6. Determined by the national program 7. Other *(specify)*_____
Q17	Do you personally manage the stock of medicines to prevent and treat eclampsia in your maternity hospital?	1. Yes 2. No (Skip to Q19)
Q18	How do you estimate the facility's requirements for medicines to prevent and treat eclampsia? *(Do not lead the interview. Check all responses mentioned spontaneously. The respondent must mention each aspect of the responses given.)*	1. Stock on hand 2. The AMC 3. Safety stock 4. All three together 5. General experience 6. Determined by the national program 7. Other *(specify)*_____
Q19	What is the frequency of oders for uterotonics? *(Do not lead the interview. Check all responses mentioned spontaneously. The respondent must mention each aspect of the responses given.)*	1. Every week 2. Twice a month 3. Once a month 4. Once a year 5. When necessary 6. Other *(specify)* _____
Q20	Are the orders filled (quantity and time)?	1. Yes 2. No
Q 21	If no, why not?	1. Central-level stock-outs 2. Order not issued on time 3. Other *(specify)* _____
Q22	What is the frequency of orders for medicines to treat eclampsia? *(Do not lead the interview. Check all responses mentioned spontaneously. The respondent must mention each aspect of the responses given.)*	1. Every week 2. Twice a month 3. Once a month 4. Once a year 5. When necessary 6. Other *(specify)* _____
Q23	Are the orders filled (quantity and time)?	1. Yes 2. No
Q 24	If no, why not?	1. Long delivery period 2. Insufficient quantity received 3. Central-level stock-outs 4. Order not issued on time 5. Other *(specify)* _____

Q25	What is the frequency of caesarean kit orders? *(Do not lead the interview. Check all responses mentioned spontaneously. The respondent must mention each aspect of the responses given.)*	1. Every week 2. Twice a month 3. Once a month 4. Once a year 5. When necessary 6. Other *(specify)* _____ 7. N/A
Q26	Are the orders filled (quantity and time)?	1. Yes 2. No
Q27	If no, why not?	1. Long delivery period 2. Completeness of the kits 3. Central-level stock-outs 4. Order not issued on time 5. Other *(specify)* _____
Q28	Where do you obtain your supply of uterotonics?	1. PPM regional store 2. DRS regional store 3. DRC 4. Local store 5. Private wholesalers 6. Donations 7. NGO 8. Other *(specify)* _____
Q29	Where do you obtain your supply of caesarean kits?	1. DPM 2. DRS regional store 3. DRC
Q30	Where do you obtain your supply of medicines to prevent and treat eclampsia?	1. PPM regional store 2. DRS regional store 3. DRC 4. Private wholesalers 5. Donations 6. NGO 7. Other *(specify)* _____

III. TRAINING

Q31	Have you been trained on the management/use of medicines used for obstetric emergencies, in particular uterotonics, in the last 12 months?	❑ Yes ❑ No ***[Skip to Q34]*** ❑ Do not know ***[Skip to Q34]***
Q32	Did you complete the entire training properly?	❑ Yes ❑ No
Q33	Have you had the opportunity to put into practice what you learned?	❑ Yes ❑ No
Q34	Do you think you need practical training to feel more confident using standard procedures for the management of medicines used for obstetric emergencies, in particular uterotonics?	1. Yes 2. No ***[Skip to Q36]***
Q35	If yes, on what aspects of the management of uterotonics and other medicines for obstetric emergencies?	1. Storage 2. Preservation 3. Transport 4. Use 5. All subjects

IV. SUPERVISION AND SUBMISSION OF REPORTS

Q36	Do you prepare reports on consumption and inventory positions of the stock of uterotonics, caesarean kits, and medicines to prevent and treat eclampsia?	1. Yes 2. No ***[Skip to Q39]***
Q37	a. If yes, where do you send the reports? _____ b. How do you send them? _____ c. With what frequency? Daily /___/ Weekly /___/ Monthly /___/ Quarterly /___/ Biannual /___/ Annual /___/ Other (to be specified) /___/ d. What information do the reports contain? A. Quantity received /___/ B. Quantity distributed /___/ C. Quantity expired /___/ D. Quantity in stock /___/ E. Other (to be specified)	
Q 38	How many caesareans were performed in your facility from January to June 2009? *Note the number of caesareans* _____	
Q39	How many deliveries were performed in your facility from January to June 2009? *Note the number of deliveries* _____	
Q40	Do you have a direct supervisor?	1. Yes 2. No (Skip to Q44) 3. Do not know (Skip to Q44)
Q41	b. If yes, what is your direct supervisor's position? 1. Regional director /___/ 2. Regional pharmacist /___/ 3. Chief of staff /___/ 4. Medical post chief /___/ 5. Hospital administrator /____ / 6. Other (to be specified)_____	
Q42	When was the last time your direct supervisor visited you?	1. This month 2. Last month 3. Three months ago 4. Six months ago 5. Other *(specify)* _____ 6. Never [Skip to Q44] 7. Do not know
Q43	What did your supervisor see/supervise when he or she was here?	1. Check stock cards 2. Look at consumption trends 3. Look at storage conditions 4. Consolidate requirements 5. Check physical stock 6. Observe the management of expired and broken products 7. Preservation of uterotonics 8. Use of uterotonics 9. Other *(specify)*
Q44	Did your supervisor share his or her comments and reactions?	1. Yes 2. No
Q45	Are you the immediate supervisor of other workers?	1. Yes 2. No (Skip to Q46)
Q46	What positions do you supervise? *(Provide the list of those that you supervise below, without using their names, and add any comments in the response coding/column.)*	

Q47	What do you do when you supervise?	1. Check stock cards 2. Look at consumption trends 3. Look at storage conditions 4. Consolidate requirements 5. Check physical stock 6. Observe the management of expired and broken products 7. Preservation of uterotonics 8. Use of uterotonics 9. Other *(specify)*

V. TOOLS

Q48	Do you have a copy of the National Essential Medicines List in the delivery room?	❑ Yes ❑ No ❑ Do not know
Q49	Does the delivery room have worksheets, such as job aids, on the management/use of uterotonics?	❑ Yes ❑ No ❑ Do not know
Q50	If yes, where are these worksheets? _____	
Q51	Are these sheets easy to understand? Yes/___/ No/___ /___ /	
Q52	If no, what are the problems in understanding these sheets?	
Q53	During supervision, do your supervisors assess the workers' comprehension of these worksheets? □ Yes □ No	

LIST OF TOOLS TO MANAGE MEDICINES FOR OBSTETRIC EMERGENCIES

Management Tools	Available		Up-to-Date	
	Yes	No	Yes	No
Delivery registers				
Book to record the transfer of uterotonics to the delivery room				
Book to record the transfer of uterotonics to the operating suite				
Book to record the transfer of medicines for eclampsia to the delivery room				
Book to record the transfer of medicines for eclampsia to the operating suite				
Book to record the transfer of medicines in the caesarean kit to the delivery room				
Book to record the transfer of medicines in the caesarean kit to the operating suite				
Reporting sheet				

SAY: We have finished our discussion. Thank you for your answers. I learned many things by speaking with you, and the information you gave me is very useful. Do you have any questions?

Interview end time: _____/_____