



Active Management of the Third Stage of Labor

Data Obtained from
National Survey in
Uganda

April to May 2007

POPHI

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Africa's Health
in 2010



The Republic of Uganda
Ministry of Health



About POPPHI

The Prevention of Postpartum Hemorrhage Initiative (POPPHI) is a USAID-funded, five-year project focusing on the reduction of postpartum hemorrhage, the single most important cause of maternal deaths worldwide. The POPPHI project is led by PATH and includes four partners: RTI International, EngenderHealth, the International Federation of Gynecology and Obstetrics (FIGO), and the International Confederation of Midwives (ICM).

About Africa Health in 2010

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Acronyms List

AMTSL	Active management of the third stage of labor
ECSA	East Central, Southern, Africa Health Community, Family and reproductive Health program
EDL	Essential drug list
FIGO	International Federation of Gynecology and Obstetrics
ICM	International Confederation of Midwives
JHPIEGO	Johns Hopkins Program for International Education in Gynecology and Obstetrics
JHSPH	Johns Hopkins Bloomberg School of Public Health
JMS	Joint Medical Stores
MOH	Ministry of Health
MMR	Maternal mortality ratio
NDA	National Drug Authority
NGO	Non Governmental Organization
NMS	National Medical Stores
POPPHI	Prevention of Postpartum Hemorrhage Initiative
RCQHC	Regional Centre for Quality of Health Care
SARA	Support, Analysis, and Research in Africa
STG	Standard Treatment Guidelines
UDHS	Uganda Demographic and Health Survey
UNCST	Uganda National Council of Science and Technology
USAID	U.S Agency for International Development
WHO	World Health Organization

Executive Summary

Postpartum hemorrhage is one of the world's leading causes of maternal mortality. Active management of the third stage of labor (AMTSL) is a feasible and inexpensive intervention that can help save thousands of women's lives. AMTSL involves three basic procedures: the use of a uterotonic agent (preferably oxytocin) within one minute following the delivery of the baby, delivery of the placenta with controlled cord traction, and massage of the uterus after delivery of the placenta. Based on conclusive evidence from clinical trials, the International Confederation of Midwives (ICM) and the International Federation of Gynecology and Obstetrics (FIGO) issued a joint statement in 2003 stating that every woman should be offered AMTSL as a means of reducing the incidence of postpartum hemorrhage. The World Health Organization's *Making Pregnancy Safer Technical Update: Prevention of Postpartum Haemorrhage by Active Management of Third Stage of Labour* recommends that "AMTSL should be practiced by all skilled attendants at every birth to prevent postpartum haemorrhage." [1]

Currently, very little is known about the actual practice of AMTSL. The aim of this study is to provide ministries of health, national stakeholders and their international partners with the descriptive information necessary to assess AMTSL practices and identify major barriers to its use. Specifically, the study asks:

1. In what proportion of deliveries is AMTSL used nationally?
2. What practices are in place that do not conform with the ICM/FIGO definition of AMTSL?
3. What are the facility- and policy-level barriers and facilitators to the use of AMTSL?

To answer these questions, a nationally representative sample of facility-based deliveries was observed; Standard Treatment Guidelines, the Essential Drug List, and the curricula for in-service and pre-service training programs were reviewed; the central pharmaceutical storage site, as well as pharmacies in health facilities selected for the study, were visited; and interviews were conducted with hospital directors and pharmacists.

The results of the study show that a uterotonic drug was used during the third or fourth stages of labor in the 89.2% (231/259) of facility-based deliveries in the sample, with ergometrine used in 69.3% (160/231) and oxytocin in 30.7% (71/231). Use of AMTSL according to the ICM/FIGO definition was observed in 5.4% of deliveries. A variety of factors account for the relatively low use of AMTSL as compared to the overall use of a uterotonic drug – ergometrine or oxytocin. These include the delayed administration of oxytocin following the delivery of the fetus, incorrect dose, lack of controlled cord traction, lack of uterine massage immediately following delivery of the placenta and no use of uterotonic in third and fourth stage of labour. If the definition of AMTSL is relaxed to allow for administration of the uterotonic drug within three minutes of delivery of the fetus, the proportion receiving AMTSL increases to 7.3%. This data suggest that about one in twenty deliveries benefit from correct AMTSL practices. The use of AMTSL using the correct or adequate definition varies by region, with two regions (50%) showing no deliveries for either definition. The use of AMTSL also varied by the type of health facilities and location of the facility, with the health centres showing no deliveries for the strict definition of AMTSL and facilities in rural setting showing no deliveries for both definitions. Of concern is 10.8% of the deliveries did not receiving any uterotonic drug at all. Over all the

observations showed women who received AMTSL experienced a shorter duration of third stage of labor than those who did not receive AMTSL.

The policy environment is very supportive of AMTSL. At the national level, the Standard Treatment Guidelines (Essential Maternal and Neonatal Clinical Guidelines for Uganda, 2001) include postpartum hemorrhage, and provide recommendations regarding its prevention that does not differ from the FIGO/ICM definition of AMTSL. However only one third (33.3%) of the health facilities visited had the national clinical guidelines. The drug of choice in the guidelines is oxytocin. Essential drug list contains both oxytocin and ergometrine for the prevention of postpartum hemorrhage. Unfortunately the National Medical Stores, the recommended supplier of government hospitals had not stocked oxytocin for the last one year. Misoprostol is not yet in the EDL since this drug is not yet registered as a uterotonic. Though the policy environment is good, the unavailability of the STGs in facilities may contribute for the low use of AMTSL observed in this study.

The lecturers/tutors acknowledged that AMTSL is taught to medical and midwifery students, however their curricula does not include the description of AMTSL. It is left for the lecturer to discuss it when teaching the management of third stage of labour.

The situation regarding drugs and supplies was found to be satisfactory in some facilities in the sample, with an average stock of uterotonic drugs sufficient for approximately seven months across all facilities. Nineteen (35%) facilities had no stock of oxytocin, and six (14.3%) facilities had no stock for ergometrine. Families were requested to buy uterotonic drugs in 24 of 48 facilities and syringes in 30 of 48 facilities in our sample.

The qualitative part of the survey found the following factors as hindrance to offering AMTSL in the health facilities; lack of in-service training specific to AMTSL, inadequate staffing within the health facilities, delayed delivery of supplies.

Recommendations

The following recommendations are made based on the results of this study.

National policies

1. Standard Treatment Guidelines (Essential Maternal and Neonatal Clinical Guidelines for Uganda) to be disseminated to all health facilities in the country. Health facilities with low volume patients should be targeted for special attention as the study found out that use of AMTSL in such facilities was lower than in higher-volume facilities in this study.
2. The Ministry of Health should advise the national medical stores to stock oxytocin the drug of choice for AMTSL. The MOH should also sensitize health facility managers that oxytocin is mandatory for AMTSL.
3. The pre-service and in-service training materials should be modified, standardized and incorporated into the curricula for the medical doctors and midwives. A specific plan for

increased provision of in-service training that includes AMTSL for the whole country should be developed and implemented.

4. AMTSL job aids should be used, adapted and disseminated to all health facilities and provided to pre-service educational programs.

Providers/practice

5. Increase the correct use of AMTSL by creating a plan to improve the following practices: administration of the uterotonic drug within one minute of the delivery of the baby, correct dose of the uterotonic drug, application of controlled cord traction, and immediate massage of uterus after delivery of the placenta.
6. Prioritize types of facilities and regions with particularly low use of AMTSL.

Logistics and supplies

7. The procedures for procurement (national and locally) and distribution of uterotonic drugs, particularly oxytocin should be reviewed, to ensure that all facilities have adequate supplies of oxytocin to provide AMTSL to all women having a vaginal birth.
8. Oxytocin, a life-saving drug, should be made available to all women. If women cannot pay for oxytocin for AMTSL purposes, it should be provided to them at no cost.

Monitoring and evaluation

9. Develop a monitoring system for facilities that monitors the routine use of AMTSL. Supervisors should be trained in AMTSL, and supervision checklists should be included as an indicator of quality.
10. Add a column to labor and delivery logbooks to monitor the use of AMTSL.
11. Implement clinical audits focused on AMTSL.
12. To develop best practices for introduction and modeling of AMTSL at point of services (labour Ward). For example; AMTSL Trials of Improved Practices (TIPS) should be conducted among skilled birth attendants who perform deliveries frequently to determine barriers to the use of AMTSL and suggestions from providers on how to improve their practice of AMTSL.

In summary, AMTSL is low in Uganda, with less than 8% of births benefiting from this practice. The main reason being that uterotonics are given after the delivery of the placenta. While there is substantial room for improvement, the environment and policies in Uganda are very encouraging. The Ministry of Health is supportive with appropriate policies in place to promote the use of AMTSL. Many agencies are also advocating for the implementation of this practice correctly. The MOH, bilateral donors, and NGO's constitute important resources that are likely to expand the practice to all providers and facilities in Uganda.

1. Background

The risk of maternal death from childbirth represents one of the greatest inequities in global health. In Uganda approximately 1.2 million women become pregnant every year and unfortunately only 42 % births are assisted by a skilled provider during delivery. This challenges the provision of delivery services. This has kept maternal mortality ratio (MMR) remain high for the past decade. The current MMR for Uganda is 435/100,000 live births[2].

Obstetric hemorrhage is the world's leading cause of maternal mortality, causing 24% of maternal deaths annually[3]. The systematic analysis of the causes of maternal deaths across the regions showed that hemorrhage was the leading cause of maternal deaths in Africa. In Africa hemorrhage contribute to 33.9% of maternal deaths[4]. PPH is unpredictable, with two-thirds of PPH occurring in women with no identifiable risk factors. Without proper management, PPH can rapidly progress to cause life-threatening blood loss, often within several hours. Because of this unpredictability and rapid progression, reducing the incidence of PPH, and improving PPH outcome when it does occur, remains a challenge.

Oxytocics (such as oxytocin and ergometrine) and prostaglandins have strong uterotonic properties and have long been used to treat uterine atony and reduce the amount of blood lost during childbirth and placental delivery. The use of these uterotonic drugs immediately after the delivery of the newborn is one of the most important interventions used to prevent PPH.

Active management of third stage (as described below) is simple and practical intervention to reduce the incidence of PPH. It is globally endorsed, and widely promoted for more than a decade as part of programs to reduce maternal mortality. Routine practice of AMTSL has been shown to dramatically reduce hemorrhage by almost 60 percent (from 18 percent to six percent in controlled clinical trials). Active management of the third stage of labor (AMTSL) is an evidence-based, low-cost intervention used to prevent postpartum hemorrhage.

The current components of AMTSL include:

- Prophylactic administration of a uterotonic agent within 1 minute following the birth of the baby (oxytocin is the drug of choice).
- Delivery of the placenta with controlled cord traction.
- Uterine massage after delivery of the placenta and every 15 minutes for two hours.

This definition is supported by the International Federation of Gynecology and Obstetrics (FIGO), the International Confederation of Midwives (ICM), and World Health Organization (WHO). This definition differs from the original research protocol in the frequently cited Bristol[5] and Hinchingbrooke[6] trials, as these original protocols include immediate cord clamping, but do not include massage of the uterus.

Clinical trials in developed countries have shown that the use of AMTSL, in contrast to physiologic management of the third stage of labor—in which oxytocic drugs are not used and the placenta separates spontaneously (delivered by gravity and maternal effort)—significantly reduces postpartum hemorrhage. When compared to AMTSL, the use of physiologic management has a higher rate of postpartum hemorrhage and severe postpartum hemorrhage, the

need for blood transfusion, the need for therapeutic oxytocics, and a longer duration of the third stage of labor. A Cochrane review of these trials concludes by recommending AMTSL for all women delivering in a hospital and anticipating the vaginal birth of a single infant[7].

Endorsement and use of AMTSL

Based on this body of evidence, ICM and FIGO issued a joint statement in November 2003 stating that every woman should be offered AMTSL “as a means of reducing the incidence of postpartum hemorrhage due to uterine atony.”¹ The inclusion of AMTSL in the WHO evidence-based manual *Managing Complications in Pregnancy and Childbirth* also attests to the international acceptance of this practice as the standard of care[8]. The [November 2003 FIGO/ICM Joint Statement](#) promotes AMTSL to save mother’s lives and further states, “*Every attendant at birth needs to have the knowledge, skills and critical judgment needed to carry out active management of the third stage of labor and access to needed supplies and equipment.*”

Evidence regarding adoption of this practice, however, is limited. Evaluations of donor-funded projects incorporating AMTSL tend to be limited to reporting on the numbers of providers trained and the percent achieving competence following training. Apart from anecdotal information, a 2003 article by the Global Network for Perinatal and Reproductive Health[9] offers a limited glimpse into the adoption of this practice. Their result, based on an evaluation of 15 university-based referral obstetric centers in developed and developing countries, show substantial variation between and within hospitals. Overall, only 25 percent of observed deliveries included AMTSL. Only one (in Dublin, Ireland) consistently used all three components of the practice. Variation in the prophylactic use of oxytocic drug ranged from 0 to 100 percent; the practice of controlled cord traction ranged from 13 to 100 percent; and the number of women who receive additional doses of oxytocin during the third stage of labor ranged from 5 to 100 percent. There is insufficient evidence for drawing conclusions about the effectiveness of this practice in its altered states. These results do suggest, however, that the use of AMTSL is quite low and, where it is practiced, the definition varies within and between countries.

Since 1987, the Safe Motherhood Initiative has stated that maternal mortality is an issue of health infrastructure. AMTSL is a highly measurable, evidence-based, life-saving aspect of this health infrastructure. Given that PPH is an important and urgent need for information from these countries on current practices regarding AMTSL.

About this study

As a complement to work undertaken by the Global Network for Perinatal and Reproductive Health, the survey discussed in this report was designed to advance understanding of current AMTSL practices in East and West Africa (Ethiopia, Tanzania, Uganda, Ghana and Benin), Asia (Indonesia), and Central America (El Salvador, Guatemala, Honduras, and Nicaragua). This report includes results from Uganda with institutional deliveries of 43%[2]. These country surveys focus on policy, provider-related factors, and supplies and logistics. When viewed together, these components provide important insights on routine use of AMTSL (Figure 1).

Policy

At the national level, a number of influences determine the priority given to AMTSL. For example, given that AMTSL has been a standard of care in the United Kingdom (UK) for many years, some researchers have hypothesized that AMTSL is more common in former British colonies and among providers who have trained in the UK. Likewise, effective leaders from national or international agencies may have been able to influence national policies, the inclusion of drugs in the essential drug list (EDL) and country formula regarding standard of care, and the content of the curriculum for regarding AMTSL for health provider education. In turn, such training may influence facility- based policies and behavioral expectations.

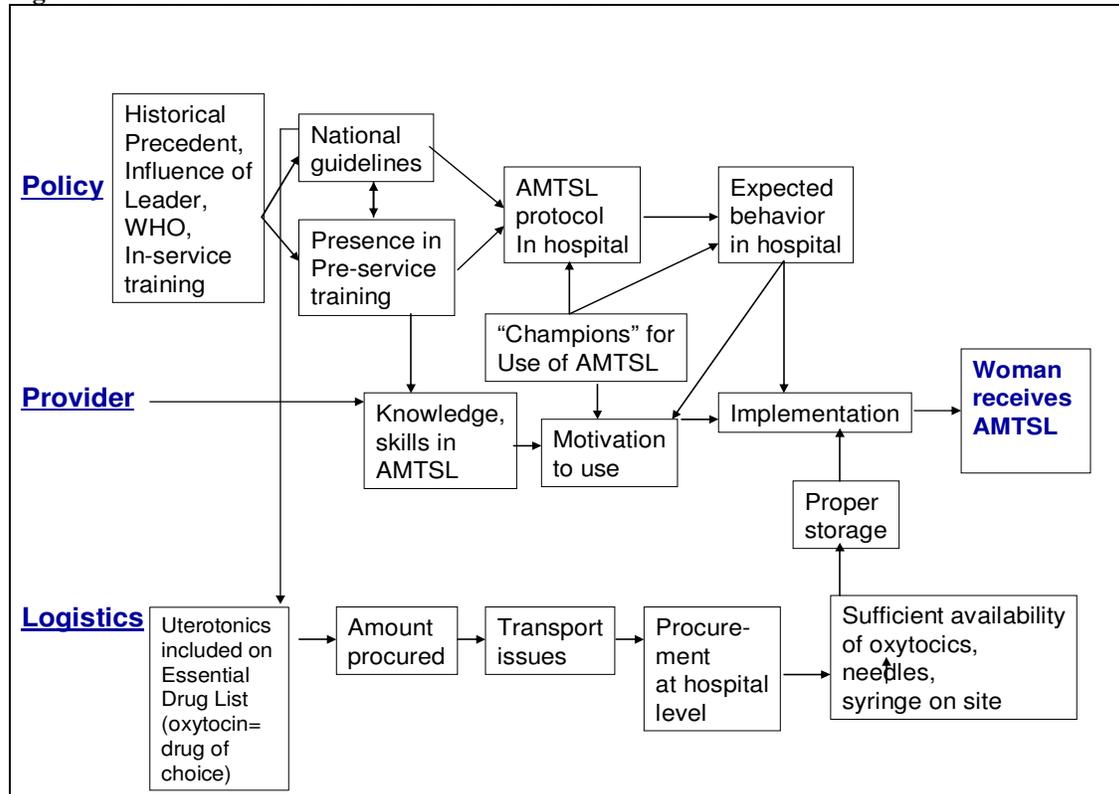
Provider- related factors

The knowledge and skills required to perform AMTSL are essential for routine use of the practice. Provider motivation, which is influenced by facility-based behavioral expectations also is key.

Supplies and logistics

The sufficient availability of high- quality uterotonic drugs, needles, and syringes at national and local levels is essential for routine use of AMTSL. Effective use of AMTSL also implies appropriate conditions during transport and storage to ensure the use of chemically-active drugs and safe, sterile needle and syringes.

Figure 1. Determinants of the routine use of AMTSL.



Objectives of the study:

The aim of this study was to provide ministries of health (MOHs), national stakeholders, and their international partners with the descriptive information necessary to assess AMTSL practices and identify major barriers to its use. A complementary component includes a qualitative assessment of the practices and perceptions among community leaders, traditional birth attendants (TBAs), and recently delivered mothers regarding serious postpartum bleeding at home-based births. The information was needed to permit the development of interventions that improve adoption and implementation of AMTSL and provide policymakers with the information they need to promote skilled attendance at birth. A third aim of this study is to produce tools and a method that others could employ to document change in the practice of AMTSL.

The study's specific research questions were as follows:

1. For what proportion of deliveries is AMTSL used at a national level? Which components of AMTSL (e.g., prophylactic use of oxytocic agents, controlled cord traction, fundal massage, or cord clamping, if using the outdated protocol) are practiced, and how consistently are they practiced?
2. Is AMTSL formally promoted in the Standard Treatment Guidelines (STGs) in each country at national level? If so, since when? How is AMTSL defined in the standards?

3. How is the need for AMTSL drugs quantified at national and facility levels?
4. Which uterotonic drug (e.g., oxytocin, ergometrine, or a prostaglandin) is used? How is it stored?
5. At the facility level, is enough oxytocin available to allow for routine use of AMTSL.
6. What are the major barriers to correct use of AMTSL, as defined by WHO and FIGO/ICM in their Joint Statement on Prevention of Postpartum Hemorrhage?
7. What are the perceptions of and practices among community leaders, TBAS and recently delivered mothers regarding serious postpartum bleeding at home-based births?

This report provides the results of the quantitative study of the management of the third stage of labor and some extracts from qualitative study on the perceptions and practice regarding bleeding the community. The complete qualitative component of the survey is in another report.

2. Methods

This study is part of a multiple-country study to assess use of AMTSL among facility-based deliveries. The development of the study methods was through a consultation process with key stakeholders at international and national level. The study team held an initial workshop of experts at PATH Washington, DC, office on May 17, 2005, to elicit feedback on the draft proposal. A team of East African experts then provided feedback on the revised proposals. These inputs substantially broadened the scope of the study. In particular, the reviewers expressed interest in documenting practices and barriers regarding logistics and drug procurement in addition to observing the management of the third stage of labor. In July 2005, the co-investigators from Ethiopia and Tanzania met in Nairobi for four days to plan for implementation. During this workshop, they drafted questionnaires to capture the expanded study objective, discussed different approaches to sampling, and established budgets and timelines.

In 2006, Uganda became the third country in East Africa to conduct the global AMTSL survey. Their proposal was submitted to Uganda National Council of Science and Technology (UNCST), ethical review board in Uganda and at the Johns Hopkins Bloomberg School of Public Health (JHSPH) and PATH. The request for consent procedures described in the proposal consisted solely of verbal consent for health care providers and parturients. No personal identifiers were recorded. The proposal received full review by UNCST and was accepted. JHSPH judged the proposal to be exempt from review for human subjects research because no personal identifiers were recorded. However, the panel at JHSPH did specify that, where possible, a woman's consent must be obtained at admission, rather than in the delivery room. PATH deferred to JHSPH for the national and facility levels.

Components of the study and questionnaire development:

The processes and the outcomes identified in the conceptual framework for the study (figure 1) determined the content and the number of questionnaires required for the study. In all, four questionnaires were developed. Following the findings from Tanzania and Ethiopia, the questionnaire that was designed to capture provider knowledge, attitude and practice of health providers was dropped. The data from this questionnaire was difficult to analyse and the findings were not useful.

- **National level questionnaire:** the questionnaire was designed to capture the policy environment for AMTSL. It includes questions regarding the content of the essential drug list, STGs, pre- and in-service training curricula, procurement practice for uterotonic drugs and supply, and storage conditions for the uterotonic drugs at the National Medical Stores. Completing this questionnaire required document review, interview with MOH staff and other policy makers, and a visit to the pharmaceutical storage site. The study's country coordinator conducted the national-level questionnaire.
- **Facility-level questionnaire:** this questionnaire was designed to capture the policy environment at the individual facility level. It includes questions on the availability of an essential drug list and STGs in the facility, provision of in-service training (including AMTSL), the cost of the uterotonic drugs to the facility and the patients, access to the

facility pharmacy, procurement practice for the uterotonic drugs, and supply and storage conditions at the facility. Completing this questionnaire required interviews with hospital administrators and the pharmacists and a visit to the facility pharmacy. One of the two members of the data-collection team completed this questionnaire during the visit to selected facilities

- **Observation of deliveries questionnaire:** This questionnaire was designed to document provider practices during the third stage of labor and the first 30 minutes of the fourth stage of labor for all vaginal deliveries. It was based on the questionnaire used by Festin *et al* [9]. The questionnaire documents the availability of uterotonic drugs and other supplies in the unit as well as the storage conditions for the uterotonic drugs. Members of the data collection team completed the questionnaire, which required observing deliveries during their visit to selected facilities.

Training of data collectors

A team of fourteen (14) data collectors were trained. Six teams of two or three data collectors were created from trained personnel. They were recruited to administer the facility-level and observation of deliveries questionnaires. The data collectors included 2 general practitioners (doctors) and the rest were midwives. The country coordinator, assisted by Reproductive Health advisor at Regional Centre for Quality of Health Care (RCQHC) and two gynecologists, provided a 3 day training (April 18th-20th 2007). The training took place at the RCQHC, Kampala. The training involved lectures, a CD-based visual presentation on AMTSL, and field practice that provided an opportunity for pre-testing the questionnaires and supervised experience for the data collectors. Based on the pre-test results, the investigators made minor modifications to the questionnaires before beginning the fieldwork.

Sample design, size, and study areas

To address the objective of the study, researchers selected a nationally-representative sample of facility-based deliveries. The study coordinator obtained a current list of all health facilities in the country with at least three deliveries per day. From this list, the research team randomly selected 30 health facilities. However one health facility (Kalongo hospital) was excluded because of security concerns. During the stakeholders meeting the members agreed to purposively select few lower health centres due to logistical reasons to complete the facility questionnaire.

Once at the selected health facilities, a data collector observed all deliveries possible over two day for a period of 16 hours per day (7 am to 11pm). The target sample size was 200 deliveries. Researchers selected Nsambya hospital, Naguru health centre IV and Kawempe health centre IV for pre-testing the questionnaires.

Weighted analyses

To reduce bias in the result, researchers applied weights during the analysis for the observation of deliveries. These weights are described below:

- **Delivery weights**, which correct for the number of observed deliveries not being in proportion to the number of reported deliveries per year. If, during the observation period, the number of deliveries per day in a facility is less than the average number of deliveries per day for the entire year, the value was adjusted to match the number of deliveries per day for the entire year. Conversely, if the number of deliveries during the observation period was greater than the average number of deliveries per day, the value was adjusted downward.

The final weights in these cases could differ from 1.0, because another adjustment was made to ensure the overall weighted and unweighted sampled size match. If the indicator is presented for a sub sample, the weighted and unweighted sampled size will differ. The n values in all tables represent the weighted values.

Field work

Six teams of data collectors conducted the fieldwork. The study coordinator with support from the MOH staff contacted the health facility administrators in advance of the data collectors visit to the health facility. At the health facility, the senior member of the team reported to the Medical Superintendent office to deliver an introductory letter from the Ministry of Health to conduct the survey in the health facility. The team spent 2 days in the health facility to observe the deliveries. The observations were done on the two shifts (morning and evening shifts). During the two days stay in the health facility, they visited the pharmacy and stores to document the storage conditions of the uterotonic drugs and interviewed the pharmacist and person responsible for stores/purchases.

Each team had transport to facilitate movement. They had questionnaires and guidelines for completing the questionnaires. The country study coordinator supervised data collection exercise. He reviewed all the questionnaires for completeness.

Data entry, quality control and analysis

Using Epi-data, the team adapted data-entry programs developed for the global survey. Double data entry was done and data cleaning was also done. Final data analysis was done with assistance of a consultant from Benin using STATA statistical software.

Qualitative component

The qualitative part of the survey looked at the knowledge attitude and other factors that hinder health workers to perform AMTSL in health facilities in Uganda. It also looked at the community perceptions and practices towards postpartum hemorrhage at the community level. The study covered four regions of the country. Northern region was covered by Arua district, Eastern Region by Mbale; Western Region by Kabale, Central region by Nakaseke and Kampala as the centre for health service delivery.

Data was collected through interviewer administered questionnaires and Focus Group Discussions with midwives from referral hospitals, national hospitals, and health centre IVs and Health Centre IIIs, missionary hospitals (Kuluva hospital in Arua and Nsambya hospital in Kampala) and private clinics. 60 health workers were interviewed from the various locations. Data was also collected through Focus Group Discussions with women that recently delivered and with the Traditional Birth Attendants. Mothers who recently delivered were identified from the health centre and others from the TBA. Data was also collected from Key Informant Interviews with health managers and community leaders

3. Results

3.1 Finding regarding National and Facility-level Policies and Logistics

This section summarizes information describing the policy environment and logistical support for AMTSL at the national and facility level.

The National Policy Environment

Standard Treatment Guidelines

The study team reviewed the national STGs on Essential Maternal and Neonatal Clinical Guidelines for Uganda which was prepared in July 2001 by the Ministry of Health in collaboration with Johns Hopkins Program for International Education in Gynecology and Obstetrics (JHPIEGO). Active management of third stage of labor is stated in the STGs. Though it does not exactly mirror the FIGO/ICM definition of AMTSL, it includes the administration of a uterotonic (oxytocin or ergometrine), delivery of the placenta by controlled cord traction (CCT) and rub the uterine fundus. The STGs encourages the health worker to check for signs of placental separation before doing CCT. However within the same document it advises that in order to avoid complications, the health provider should not wait for signs for placental separation before performing CCT. The STG only mentions one massage of the uterus to expel clots.

Other guidelines named “*Government of Uganda clinical guidelines for common illness*,” which the research teams found in the health facilities, did not mention AMTSL. The *Life-Saving Skills Manual*, which has been used the MOH for in-service training, in its training material and skills checklists, does include giving of oxytocin with the delivery of the anterior shoulder and CCT. Uterine massage is not mentioned in the text. However within management of third stage the materials have addition of physiological management of third of labour.

Essential Drug List

Table 1. The Uterotonics contained in the Essential Drug list

	Uterotonic Drugs		
	Oxytocin	Ergometrine	Misoprostol (or other)
Uterotonic is listed on the Essential Drug List	Yes	Yes	No
Uterotonic drugs on Essential Drug List that are registered	Yes	Yes	-
Indication for uterotonic drugs cited in the Essential Drug List	No indication in the EDL	No indication in the EDL	

Oxytocin and ergometrine are registered for in-country use. However the MOH was in the process of having misoprostal registered. The combination uterotonic, Syntometrine and misoprostal were not contained in the EDL.

Availability and storage of Uterotonic Drugs at central storage site

During the visit to the National Medical Stores, the study team observed that only ergometrine was available at the stores. The National Medical Stores had adequate quantity of ergometrine at the time of the visit. The previous one year the national medical stores (NMS) had not stocked oxytocin. The study team was informed of the failure of the suppliers to respond to the advertisement that was sent out. However NMS used to get the oxytocin from MISSION PHARMA, Denmark. Most of the health facilities who wanted oxytocin were referred to Joint Medical Stores (JMS), an NGO-based drug distributor.

The NMS procures ergometrine from ROTEX MEDICA, Germany. It is in ampoules of 0.2mg/ml. The study team observed that the ergometrine was stored according to the manufacturers recommendations in a cold room (protected from light) with a temperature range of 2-8°C. Ergometrine is transported in cold boxes. There is no quality assurance test made when the drug is received. However the National Drug Authority (NDA), a government body that registers all drugs is the one that performs the quality assurance in the field. The quantity of ergometrine procured by NMS is determined by the amount issued the previous specified period. The NMS could not base its procurement on consumption, with the reason being that some health facilities occasionally receive ergometrine in form of donations. This makes it hard to quantify how much is consumed nationally.

Pre and In-service Training regarding AMTSL

The study team observed that the pre-service curriculum for the midwives, nurses and doctors does not include a detailed description of AMTSL. This information was obtained from the head of department, staff of Makerere medical school, department of Obstetrics and Gynaecology, the tutors of midwives and nurses training schools. The study team also reviewed the respective curricula. The curricula highlights the major topics to be covered and it's the responsibility of the lecturer/tutor to determine how much to get from the reference books provided.

The national level data regarding in-service training was scanty. The MOH had trained some doctors and midwives on emergency obstetrics care and contents of training did not specifically describe AMTSL. Life-saving skills training is also conducted by the MOH and it does include training in AMTSL but it has not been updated to include the FIGO/ICM definition. The Uganda Private Midwives Association and the Association of Obstetric and Gynaecology in Uganda with support from POPPHI trained a small number of providers in AMTSL in 2005-6.

Of the 48 health facilities, 12 (25%) reported their midwives had participated in in-service training that included AMTSL during the past year; 4 (8.3%) reported that their doctors had participated in the same training.

The Facility-level environment

Availability of clinical guidelines specific to AMTSL

The clinical guidelines were available in 16/48 (33.3%) of the health facilities visited. Fifteen (93.8%) of health facilities with clinical guidelines specifically mentioned AMTSL. Oxytocin was the drug of choice in 80% of the guidelines that had specifically stated AMTSL. CCT and fundal massage were mentioned in 75% and 68.8% of the 16 health facilities with clinical guidelines. There was no policy in the guidelines that restricts the use of AMTSL.

Accessibility of the Pharmacy and Pharmaceuticals at the facility-level

A majority, 47/48 (97.9%) of the health facilities visited had a pharmacy within the health facility. Only one health facility had a pharmacy that operated 24 hour service. The majority of the health facilities (69%) set aside enough stock to cover the evening and night shifts.

Table 2 Storage conditions for uterotonic drugs at the facility-level

	Uterotonic Drugs	
	29/48 (65%) of facilities in which: Oxytocin	42/48 (85.7%) of facilities in which: Ergometrine
Storage temperature recommended by manufacturer	2-8°C 19/29 (65.6%)	2-8°C 31/42 (73.8%)
	15-25°C 6/29 (20.7%)	15-25°C 10/42 (23.8%)
	Not stated 4/29 (13.8%)	Not stated 1/42 (2.4%)
Light conditions recommended by manufacturer	Away from light 16/29 (55.2%)	Away from light 40/42 (95.2%)
	Not stated 12/29 (41.4%)	Other 2/42 (4.8%)
	Other 1/29 (3.4%)	
Temperature at which drug is actually stored at facility	2-8°C 19/29 (65.6%)	2-8°C 29/42 (69.6%)
	15-25°C 10/29 (34.4%)	15-25°C 13/42 (31.0%)
Light conditions in which drug is actually stored	Kept in dark 24/29 (82.8%)	Kept in dark 31/42 (73.8%)
	In daylight away from sun light: 5/29 (17.2%)	In daylight away from sun light: 10/42 (23.8%)
	In direct sunlight 0%	In direct sun light 1/42 (2.1%)
How is quantity of drug determined for procurement	Consumption 26/32 (81.3%)	Consumption 36/46 (78.3%)
	Perpetual need 3/32 (9.4%)	Perpetual need 5/46 (10.9%)
	Fixed Qty 1/32 (3.1%)	Fixed Qty 2/46 (4.3%)
	Other 2/32 (6.2%)	Other 2/46 (4.3%)
Price per ampoule for the facility	195-339 Ug. Shs equivalent to 11-19 US cents	145 – 339 Ug Shs equivalent to 8-19 us cents
Price per ampoule for the patient	Only 10 health facilities charge patients and the price ranges from Ug. Shs 500-1300 (28- 75 US cents). The rest of the health facilities	The 10 facilities charge patients between 500 -1300 (28- 75 US cents) per ampoule.

	provide free of charge.	
Drug is available on-site	28/48 (58.3%)	39/48 (81.2%)
Months of stock on hand	0 22/48 (45.8%)	0 9/48 (18.8%)
	1-3 15/48 (31.3%)	1-3 16/48 (33.3%)
	4- 10 6/48 (12.5%)	4- 10 16/48 (33.3%)
	> 10 5/48 (10.4%)	> 10 7/48 (14.6%)
	The facilities that do not usually purchase oxytocin are included in 0 months of stock	
N of days of stock out in last 3 months	Never 18/48 (37.5%)	Never 33/48 (68.8%)
	1-14 days 6/48 (12.5%)	1-14 days 2/48 (4.2%)
	>14 days 9/48 (18.8%)	>14 days 8/48 (16.7%)
	Do not purchase 15/48 (31.3)	Do not purchase 5/48 (10.4)
Reasons for stock-out	Supplier sent less 3/14 21.4%	Supplier sent less 3/10 30.0%
	Supply delayed 4/14 (28.6%)	Supply delayed 5/10 (50%)
	Consumption greater than supply 2/14 (14.3%)	Order not on time 2/10 (20%)
	Order not on time 2/14 (14.3%)	
	Unknown 3/14 (21.4%)	

Misoprostal was not available in all the hospital visited during the survey.

From the table 2 above, oxytocin and ergometrine were available in the 65% and 85.7% pharmacies of the 48 facilities. The manufacturers recommendations for storage temperature and lighting conditions were documented in most of the uterotonics found at the health facilities. Four health facilities had oxytocin that did not state specific temperature for storage and lighting recommendations were not stated in 12 facilities with oxytocin. A majority (more than 75%) of the health institutions surveyed estimate their future needs using the historical consumption method. The purchasing price for oxytocin and ergometrine did not differ a lot. There were twenty two facilities with zero stock months of oxytocin and nine facilities with zero stock months of ergometrine. Among the health facilities visited, 15/48 (31.3%) of them do not usually purchase oxytocin. The reasons vary; the general impression has been that oxytocin was used mainly for induction/augmentation of labour. These health facilities that do not purchase oxytocin are health centres because they are not allowed to induce/augment labour. Some health facilities receive their supplier from the district headquarters and they not have much input in decision making at times of procurement. Five health facilities were not purchasing ergometrine. The study team found out that, three of the facilities had had an update on management of third stage and superiority of oxytocin to ergometrine, and they had influenced the procurement authority in the health facility to procure only oxytocin. The major reason for stock out for both oxytocin and ergometrine was delay by supplier to deliver the drugs on time. Health facilities purchase uterotonic drugs from National Medical Stores through a credit line, unless the NMS does not have the uterotonic. For example oxytocin was being purchased from JMS and other local wholesale pharmaceutical companies.

It was noted that in 30/48 (62.5%) of the health facilities, relatives sometimes had to purchase syringes from outside the hospital because of stock outs. Similarly 24/48(50%) of the health facilities sometimes request relatives to purchase uterotonic drugs.

4: Findings regarding the management of the third stage of labor

The principle objectives of this survey were to measure the use of AMTSL according to FIGO/ICM criteria and to measure current practices regarding the management of the third and fourth stages of labor. This section describes the management of the third stage and fourth stage of labor by focusing on (1) the overall use of uterotonic drugs; (2) the timing of administration and the dose of these drugs, (3) the correct use of AMTSL (4) practices in the use of the individual components of AMTSL.

Sample of deliveries

The data collectors observed a total of 259 deliveries in 48 health facilities. The table 3 shows the characteristics of the facilities and the women associated with the deliveries. More than half (52.9%) of the observations were conducted in the national and regional referral hospitals. While one fifth (20.9%) of the observations occurred at the district hospital. A majority of the observations occurred in facilities located in an urban setting. This was due to sampling procedure that restricted the selection of facilities to those at least 3 deliveries per day (or 90 deliveries per month). More than three quarters (76.5%) of the deliveries were conducted by midwives while the obstetricians and physicians carried out very few deliveries (2%). This is because of the practice of relegating normal deliveries to midwives and the complicated deliveries to doctors. Students under training were grouped under others and in most training health facilities they do assist in conducting deliveries. The mean age of the mothers was 26 years and prima gravida were about a third (28.6%) of the deliveries.

Table 3 Distribution of observed deliveries by characteristic of the facility and the mother

Characteristic	N	%
Type of facility		
National Referral	44	17.0%
Regional referral	93	35.9%
District hospital	54	20.9%
PNFP*	37	14%
Health Centres	31	12%
Deliveries per month		
< 200	38	14.7%
200-500	125	48.3%
> 500	96	37.1%
Region		
Central	149	57.5%
Eastern	28	10.8%
Western	50	12.4%
Northern	32	19.3%
Area		
Urban	243	93.8%
Rural	16	6.2%
Provider qualification		
Obstetrician	2	0.8%
Other physician	3	1.2%
Clinical Officer	1	0.4%
Midwife	198	76.5%
Nurse	4	1.5%
Other(student)	51	19.7%
Time of day		
Day shift 0800-1600	153	59.1%
Evening shift 1600-2300	106	40.9%
Woman's age in years		
<20	47	18.2%
20-34	192	74.1%
35+	16	6.2%
unknown	4	1.5%
Gravidity		
Prime	74	28.6%
2 – 5	156	60.2%
>5	29	11.2%
Received uterotonic drugs prior to third stage of labor		
- for induction	5	1.9%
- for augmentation	30	11.6%
- no drugs prior to the 3 rd stage	224	86.5%
Received uterotonic drug at some point during 3 rd or 4 th stage of labor		
- received oxytocin	71	27.4%
- received ergometrine	160	61.8%
- received misoprostol	0	0
- received a combination of uterotonic drugs	0	0
- received no uterotonic drugs	28	10.8%
Total n of deliveries	259	100%

- PNFP: Private Not For Profit

Use of uterotonic drugs

In this sample of observed deliveries, 89.2% (231/259) of the women were given a uterotonic drug during the third or fourth stage of labor. The majority of those who received uterotonic were given ergometrine (61.4%). Oxytocin was given in 27.4% of deliveries. There was no evidence of the use of combination drugs, such as Syntometrine or prostaglandins such as misoprostal. 10.8% of the women did not receive any uterotonic during third or fourth stage of labor. During the survey the providers in the regional referral hospitals and health centres were more likely to give ergometrine than oxytocin to their mothers. The observations also showed that the health facilities in eastern region and rural settings were more likely to use ergometrine than oxytocin.

Table 4 Use of uterotonic drugs during labour, delivery and the immediate postpartum period by characteristic of the mother and facility.

	Use of oxytocin only (%)	Use of ergometrine only (%)	No uterotonic use (%)	Total (%)	Total (N)
Total	26.6	61.4	10.8	100	259
Age of mother					
<20 years	28.3	65.2	6.5	100	46
20-34 years	27.4	61.1	11.6	100	190
35+	12.5	68.8	18.8	100	16
Gravidity					
Prime	24.7	64.4	11.0	100	73
2-5	28.6	60.4	11.0	100	154
>5	24.1	65.5	10.3	100	29
Time of birth					
8am-4pm	26.5	62.3	11.3	100	151
4pm-11pm	27.6	61.9	10.5	100	105
Type of facility					
Central referral hosp	36.4	40.9	22.7	100	44
Regional Ref. Hosp.	11.1	80.0	8.9	100	90
District Hosp.	44.4	46.3	9.3	100	54
PNFP	43.2	48.2	13.5	100	37
Health Centre	9.7	90.3	0	100	31
Provider qualification					
Obstetrician	100	0	0	100	2
Other physician	0	100.0	0	100	3
Clinical officer	0	100.0	0	100	1
Midwife	26.2	64.1	9.7	100	195
Nurse	0	100	0	100	4
Others	31.4	51.0	17.7	100	51
Region					
Central	38.9	49.7	11.4	100	149
Eastern	3.6	89.3	7.1	100	28
Northern	37.5	62.5	0	100	32
South western	0	82.0	18	100	50
Area					
Urban	28.3	60.4	11.3	100	240
Rural	6.3	87.5	6.2	100	16
Authority					
Government	24.3	65.1	10.6	100	218
PNFP*	42.11	44.7	13.2	100	38

PNFP Private Not For Profit facilities

Table 5. below presents the distribution of observed deliveries by the timing, mode, and dose of uterotonic administration during the third and fourth stages of labor. The ergometrine was the drug of choice by most providers and most providers (61.3%) gave it after the delivery of the placenta. The route of administration did not vary much. However most of the oxytocin was given after the delivery of the baby administered via intramuscular (IM) injection, as recommended by AMTSL. Ten international units (IU) of oxytocin was administered in all the mothers who received oxytocin; 0.2 mg of ergometrine was administered in 68.8% of the deliveries receiving this drug, again reflecting the FIGO/ICM dosage recommendations, while 30.6% received 0.4mg of ergometrine.

Table 5 Percent distribution of the timing, mode of administration, and dose of uterotonic drugs.

	Among cases receiving oxytocin only (71)	Among cases receiving ergometrine only (160)		
Timing of administration (%)				
During delivery of the fetus	1.4	0.6		
After delivery of the fetus	73.2	36.3		
During delivery of the placenta	1.4	1.9		
After delivery of the placenta	23.9	61.3		
Total	100.0	100.0		
Mode of administration (%)				
IM	91.5	44.0		
IV push/injection	0.0	56.0		
IV drip	7.0	0.0		
IM and IV drip	1.4	0.0		
Total	100.0	100.0		
Dose (%)				
Dose of:	<10 IU	0.0	0.20 mg	68.8
Dose of:	10 IU	100.0	0.40 mg	30.6
Dose of:	>10 IU	0	0.50 mg	0.6
Total		100.0		100.0
Number		71		160

IM = intramuscular administration; IV = intravenous administration.

Components of AMTSL

The study used two definitions of AMTSL:

- **Definition A** is the FIGO/ICM definition, which involves administration of 10 IU of oxytocin/ergometrine within 1 minute following the delivery of the fetus, controlled cord traction, immediate uterine massage following delivery of the placenta, and palpation of the uterus every 15 minutes.
- **Definition B** is the FIGO/ICM definition, which involves administration of 10 IU of oxytocin/ergometrine within 3 minutes following the delivery of the fetus, controlled cord traction,

immediate uterine massage following delivery of the placenta, and palpation of the uterus every 15 minutes.

Definition A is the strictest of the two definitions and reflects all aspects of the ICM/FIGO definition. Definition B is more flexible and extends the timing of the uterotonic to within 2 and 3 minutes of the delivery of the fetus. Only 5.4% (95% CI: 3.0-8.9) of observed deliveries received AMTSL following the strict version of the FIGO/ICM definition (table 6). There was a small percentage increase to 7.3% (95% CI: 4.5%-11.2%) when using the definition allowing administration of oxytocin within 3 minutes of delivery of the fetus. However this difference was not statistically significant. The district hospitals had more deliveries that had fulfilled both definition A and B compared to other health facilities.

Table 6 Deliveries using AMTSL definition A and B by characteristic and facility

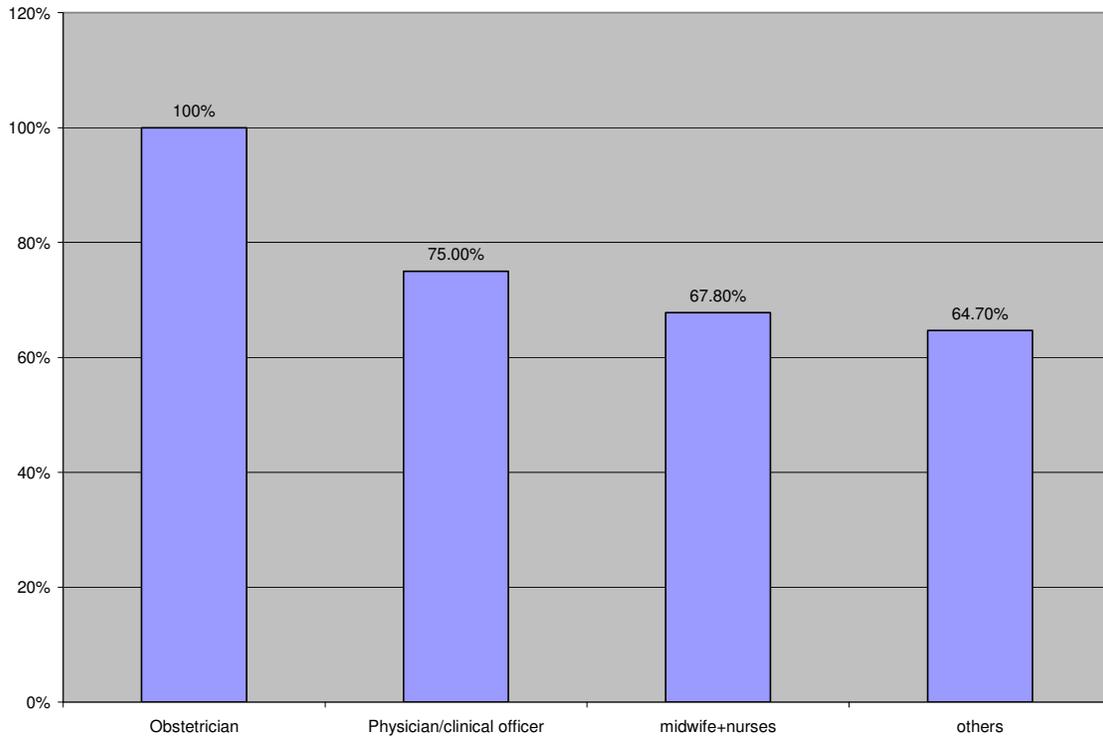
	AMTSL		
	Definition A (%)	Definition B (%)	N
Total	5.4	7.3	259
95% CI	3.0-8.9	4.5-11.2	
Age of mother			
<20 years	8.5	8.5	47
20-34 years	5.2	7.8	192
35+ years	0.0	0.0	16
p value	0.562	0.627	
Gravidity			
Prime	5.4	6.8	74
2-5	5.8	8.3	156
>5	3.5	3.5	29
p value	0.879	0.635	
Time of birth			
6 pm to 6 am	5.3	6.6	152
6 am to 6 pm	5.7	8.5	106
p value	0.962	0.813	
Type of facility			
Central referral hospital	2.3	4.6	44
Regional ref hospital	4.3	4.3	93
District hospital	14.8	20.4	54
PNFP	2.7	2.7	37
Health Centre	0	3.2	31
p value	0.013	0.02	
Cadre of health provider			
Midwife	4.6	6.1	198
Others	8.2	11.5	61
P value	0.27	0.156	
Location of facility			
Urban	5.8	7.8	243
Rural	0	0	16
p value	0.324	0.245	
Deliveries per month			
<200	0.0	0.0	38
200-500	4	4.8	125
>500	9.4	13.5	96
p value	0.06	0.008	
Region			
Central	6.7	10.1	149
Eastern	0	0	28
northern	12.5	12.5	32
South west	0.0	0.0	50
p value	0.044	0.028	

Controlled cord traction

Controlled cord traction, which includes gentle traction of the cord and manual support of the uterus, was practiced in 67.6% of observed deliveries. *Figure 2* presents the use of controlled cord traction by provider qualification. Use of controlled cord traction is more common among obstetricians (100%)

compared to general physicians/clinical officers, midwives/nurses and others (*medical students and midwifery students*); 75%, 67.8%, and 64.7%, respectively.

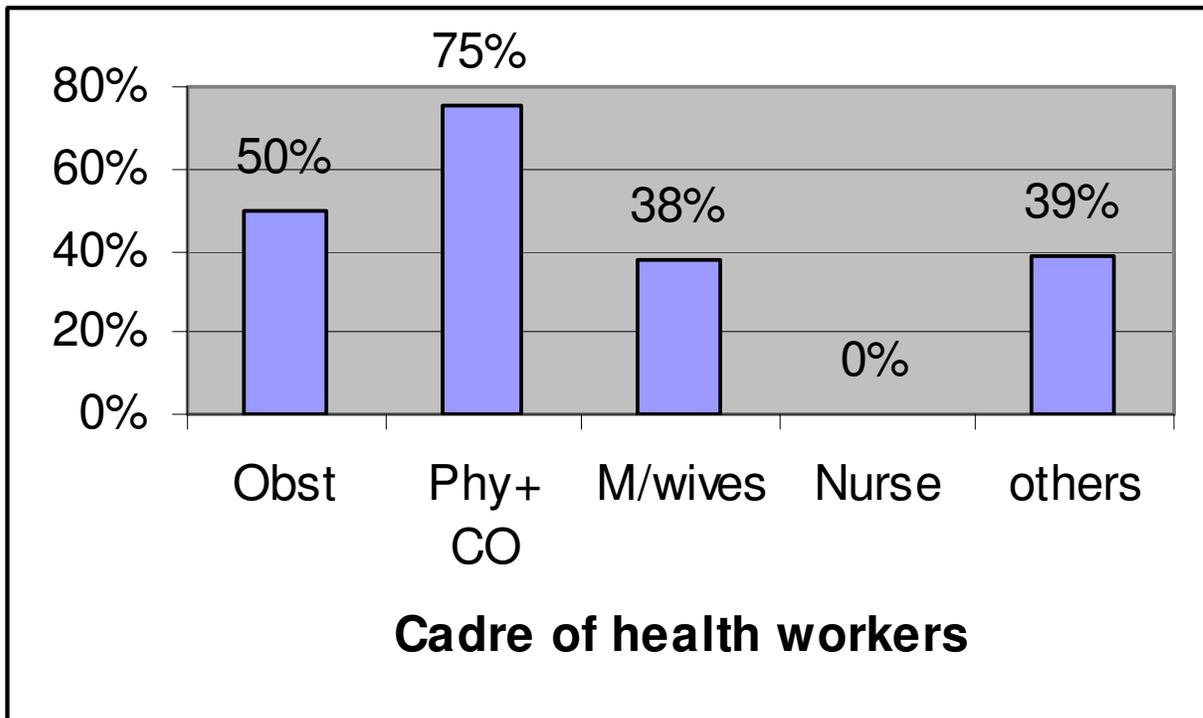
Figure 2. Percent of deliveries with controlled cord traction, by qualification of provider



Uterine massage

Overall 69.5 percent of the deliveries received uterine massage immediately following the delivery of the placenta. Figure 3 represents the use of massage by provider qualification. Though the numbers were small for different cadres there is difference of massage by the cadres. Only other physicians and clinicians had performance above 50%.

Figure 3. Percent of deliveries receiving immediate uterine massage following the delivery of the placenta, by qualification of the provider

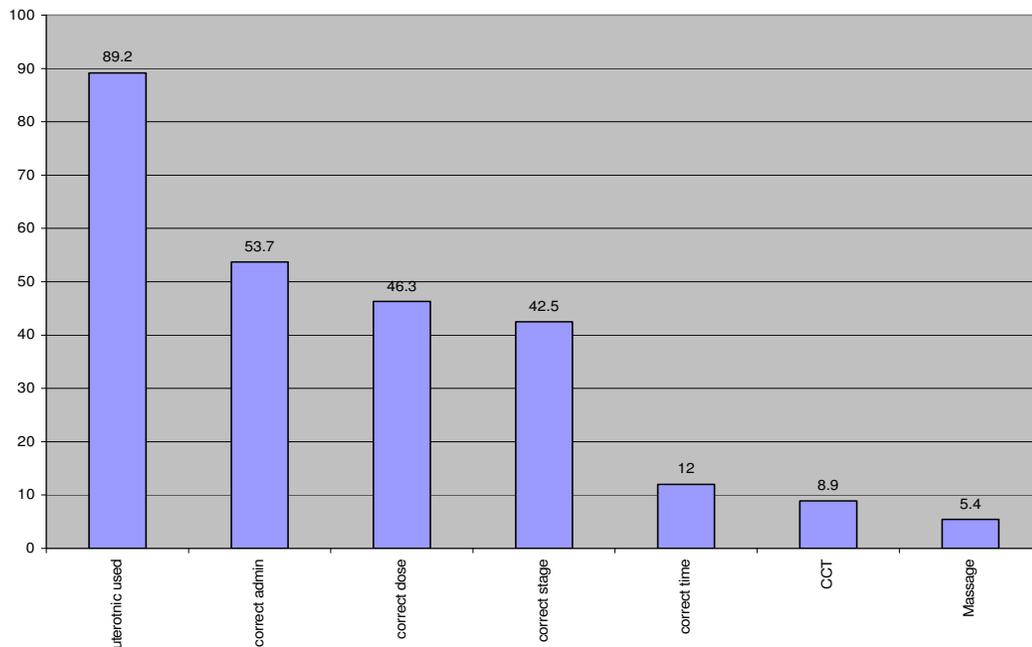


Use of AMTSL

The study team found out that correct use of AMTSL was so low in this study, despite high use of uterotonic drugs (89.2%) in facility-based deliveries and approximately 67.6% of observed deliveries receiving controlled cord traction; and that 69.5% receiving immediate uterine massage.

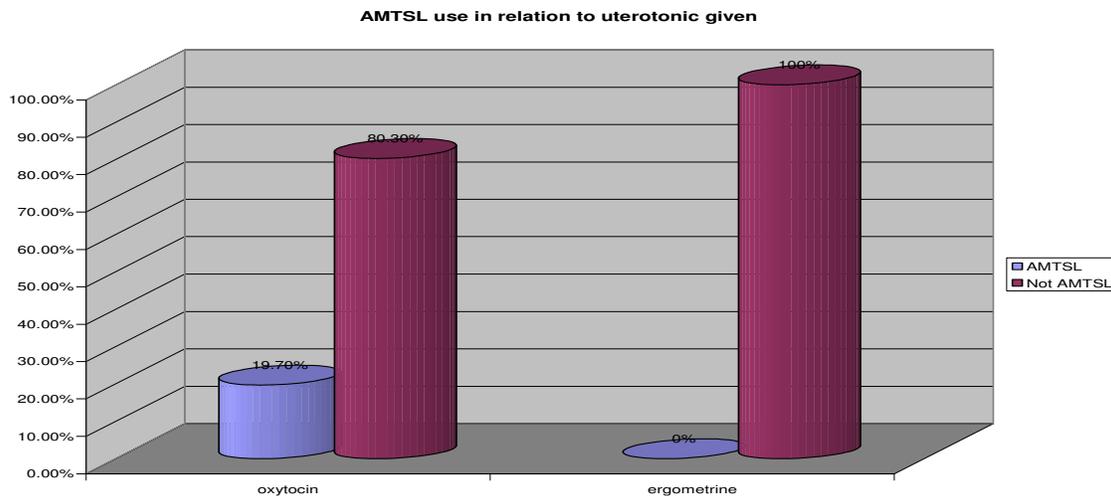
To isolate which practice or practices are responsible for the relatively low percentage of deliveries meeting the criteria for correct use of AMTSL, Figure 2 shows the practice by the individual components of AMTSL. Uterotonic was given during the third or fourth stage of labor to 89.2% of the deliveries. 53.7% of the deliveries received the correct administration (IM) of either oxytocin or ergometrine which caused a substantial drop in the percentage. When correct dosage was added, the percentage dropped again to 46.3%. When the correct stage of giving uterotonic is included, there was a slight drop to 42.5% of all deliveries receiving a uterotonic after delivery of the fetus. After adding the time criteria, only about 12% of all deliveries received a uterotonic in less than or equal to one minute after delivery of the fetus, reflecting a substantial decrease. Another decrease is shown when control cord traction and immediate massage are added. Thus, aside from use of a uterotonic, all components of AMTSL could be improved, and timing within one minute of the delivery of the fetus and correct stage appear to be the practices most in need of improvement.

Figure 4. Percent for deliveries with use of uterotonic drugs during the 3rd stage of labor (oxytocin and ergometrine), plus additional elements of AMTSL



Comparison of AMTSL use by the providers when different uterotonic was used showed that no provider met the FIGO/ICM definition when ergometrine was used (figure 4).

Figure 5. AMTSL use in relation to the uterotonic given



As shown in above figure 5, all the health providers who used ergometrine as the uterotonic did not meet the correct definition of AMTSL. This could be due the perception by health professionals that giving ergometrine before the delivery of the placenta is associated with retained placenta.

Duration of the third stage of labor

Table 7. presents the time elapsed between the delivery of the fetus and the placenta. The average duration of the third stage of labor among deliveries in which AMTSL was used was 4.3 minutes, compared to 15.76 minutes among deliveries in which AMTSL was not used. Using the more relaxed

time requirement for oxytocin administration, the difference between deliveries with and without AMTSL use is 4.4 and 16.00. The differences are statistically significant for both definitions.

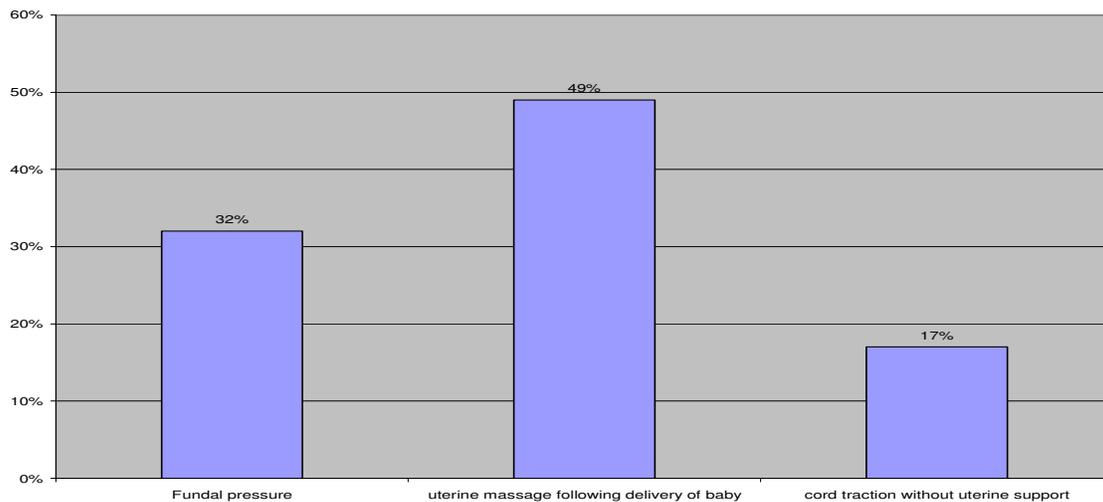
Table 7 Average duration of the third stage of labor among deliveries, with and without use of AMTSL

Use of AMTSL	Average duration of third stage of labor	95% confidence intervals	n	P value
Definition A:				
Administration of 10 IU of oxytocin/ergometrine <u>within 1 minute</u> following the delivery of the fetus, controlled cord traction, immediate uterine massage following delivery of the placenta, and palpation of uterus every 15 minutes.				
Use of AMTSL	4.29 minutes	3.11-5.45	14	0.0102
Non-use of AMTSL	15.76 minutes	7.17-24.33	245	
Definition B:				
Administration of 10 IU of oxytocin/ergometrine <u>within 3 minutes</u> following the delivery of the fetus, controlled cord traction, immediate uterine massage following delivery of the placenta, and palpation of uterus every 15 minutes.				
Use of AMTSL	4.42	3.57-5.28	19	0.0110
Non-use of AMTSL	16.00	7.22-24.74	240	

Potentially harmful practices

In addition to documenting AMTSL use, data from this study also identified three practices considered potentially harmful (Figure 6). These practices include fundal pressure to deliver placenta (32%) uterine massage following delivery of the fetus (49%), and application of cord traction without manual support of the uterus (17%). All of these practices can increase the risk of postpartum hemorrhage or cause problems such as uterine inversion.

Figure 6. Deliveries in which potentially harmful practices were used



5. Findings: Qualitative study:

Factors identified by Health providers as barriers to AMTSL

The study team interviewed 60 health providers and regional distribution is as shown in table below.

District	Number interviewed
Arua	8
Kampala	11
Nakaseke	8
Mbale	21
Kabale	12
Total	60

It was noted during the interviews that skilled providers widely use Physiological Management as compared to AMTSL. Lack of training was identified as one of the major barriers towards use of AMTSL. AMTSL was considered as a new practice for which they still needed training. The findings show that majority of the health workers have never been trained on AMTSL. All the health workers had received pre service training in the management of the third stage of labour however only 6% reported to have received in service training on the management of the third stage of labour. The health worker also noted lack of access to literature. And general poor reading culture of the providers

Lack of information sharing within the health units-it was established that majority of health workers trained in new practices rarely pass on the new knowledge to their colleagues.

Lack of adequate staff this was cited as the major barrier towards adoption of AMTSL in all the districts visited. Health workers complained that they are very few to manage the delivering mothers. Health care shortage makes the recommended practice of massaging the fundus every 15 minutes for two hours impossible in managing the third stage of labour. Many providers in this regards advised that the mothers could do this by themselves with the help of their attendants.

Inadequate supplies for AMTSL was another factor mentioned by providers as a hindrance to effectively performing AMTSL. Shortages were either due to delayed deliveries of drugs by NMS or patients load is higher than supply

Community Factors

In Uganda where 58% of the women still do not deliver from health facilities, it was necessary to capture community knowledge, perceptions and practice towards PPH management. These large number of women definitely do not benefit from AMTSL. Some of factors that mentioned by the women and community leaders why these women prefer to deliver from home or TBA included;

1. Poor attitude of some health providers,
2. lack of necessities for the delivery of a baby,
3. Lack of privacy in facilities.
4. Long distance to health facilities
5. cost of treatment at the health facility
6. Fear of caesarean section when they go to hospital
7. social stigma associated with women who deliver in the hospital

The findings of the study revealed that community active participation in reproductive health is important in reducing PPH. Several ways in which the community can be involved were explored.

TBA's and the management of the Third Stage of Labour

The study sought to establish how Traditional Birth Attendants manage the third stage of labour, the constraints they face and recommendations on how to reduce bleeding among mothers. In an ideal situation, during child birth, every mother should be helped by a health professional that can manage normal delivery as well as detect and manage complications such as haemorrhage, shock and infection. However, this is not always possible in majority of the rural areas. Majority of mothers have to deliver from home, with Traditional Birth Attendants or with unskilled providers.

The study observed that majority of the TBAs are not trained. They receive their training from their grandmothers or mothers as they grow up. Women who had their relatives work as TBAs are most likely to take on the practice. Some few receive training from health facilities.

TBA approach to managing the third stage of labour

TBAs use physiological management of the third stage of labour with variations in the type of uterotonic drug they give to women and method of managing the third stage of labour.

1. Support uterus with another hand on the fundus after seeing signs of separation of the placenta. Ask mother to push while at the same time supporting the fundus. After delivery of the placenta, check the placenta for tears, clots and retained membranes. *(TBAs Mbale)*
2. Clump the cord as soon as the baby is delivered. Feel the uterus to ensure that there no baby remaining. Give a cold drink and deliver the placenta. Check the placenta to ensure that there are no remaining cotyledons within the body. In case there are cotyledons, give another herbal drink to the mother to help expel the cotyledons. *(TBAs Kabale)*
3. Clump the cord the separate baby from the placenta, put baby on the breast to help in the separation of placenta and push uterus to deliver placenta by CCT *(TBAs Nakaseke)*

It was also found out that there is a wide use of local herbs and medicines as uterotonic drugs to stop bleeding among mothers. However these drugs vary according to the TBAs location and training. In addition, they are given at unspecified times during the delivery of the baby and in the third stage.

Causes of bleeding according to the TBAs

Bleeding that causes concern is seen as that which is more than one tumpeco (mug) or 500ml. It is important to note that the tumpeco of blood is mixed with urine and other substances.

According to the TBA, bleeding is mainly due to having a full bladder, retained membranes, early or premature separation of the placenta-this is attributed to women being involved in heavy work like digging before delivery. They mentioned that multi-parous women were more likely to bleed than prime gravida

Another key factor in the management of bleeding was cited as the husbands support to the wife. It was ascertained that women with supportive husbands are less at risk as compared to those who do not have supportive partners. Supportive partners tend to offer the necessary help to their wives such as escorting them to hospital, meeting medical bills among other things.

TBA Referrals

The TBA said that the decision to refer is made immediately a woman develops a complication. Others are referred basing on the previous obstetric history.

Constraints TBAs face

a) Lack of transport

One of the major constraints TBAs have is lack of transport in case of emergencies. They rely on the goodwill of the community members and spouses or relatives of the mother. In some cases, mothers are taken on foot to the health units in case of an emergency. Other means of transport usually used include bicycles, community ambulances, and motor cycles or in a few cases they may receive help from the health units who have ambulances. Organizing transport for the mothers remains a challenge for the TBAs. For instance in Mbale, the TBAs said that

b) TBA relationships with health workers

Working relations between health workers pose a challenge for the TBAs. In areas where TBAs have a good working relationship with the health workers, there are high numbers of cases referred to the health centres. Because of the good working relationships, TBAs access training opportunities and also participate in community health education initiatives. On the other hand, however, areas where TBAs do not have good working relationships with the health workers, referrals are limited. This is usually because, there activities are not recognized by health workers. It was ascertained that there is at times problems of the abilities of the TBAs to deliver quality care to the mothers. According to the health workers, TBAs refer mothers late to the health units at times with complications that would have been avoided in the first place.

c) Lack of birth plan by the mothers

It was found out that at times mothers go to the TBAs when they are not prepared. They lack towels, gloves, basins and other necessities for the delivery of the babies. One difference with the TBAs is that even in this kind of situation, they do are not rude to them or abuse them as is the case in some of the health units. A TBA in Nakaseke said that

“Some mothers come to us without preparation. They have no towels, or any form of clothing with them. For instance, one mother has never returned a Kitengi (cloth) which I lent her for wrapping her baby”

Being forced to help mothers that have no form of support from relatives or a spouse is a challenge for us. We have to improvise to ensure that the mother and baby are well catered for. TBA Nakaseke

“If a person is in danger and in need, you cannot just sit back at home you have to find a solution.” TBA Arua.

Community involvement in the management of the third stage of labour

Bleeding of women during child birth is a major concern to community members. Local leaders get to know about cases of bleeding when it reported by community members. It was observed

that in some communities, when faced with a bleeding mother, members are quick to mobilize resources to transport her to the nearest health facility. However, this form of community assistance is not sustainable. Sometimes community leaders have nothing to do about a situation. In other communities, such as in Mbale and Kabale, there is a readiness for any emergency situation. For instance, it was established that some in Mbale and Kabale have devised community ambulances. In case of emergencies, the local leader is alerted and the ambulance-a bicycle with a stretcher or on a stretcher made put of poles and carried between four men. Women are carried on foot in a suspended stretcher and taken to the nearest health unit. This form of transport however is very cumbersome in hilly areas; in areas with bad roads and or where the health unit is far from the community.

It is important therefore to create awareness among the communities to put in place mechanisms to deal with emergencies as they occur. Organizing a community in an emergency leads to loss of time.

Community perceptions of PPH and AMTSL

The findings of the study reveal that majority of the women do not deliver from the health care centres for a number of reasons. These relate to the distance from the communities to the health units, poor facilities in the health units, health workers reception, and presence of TBAs in the health facility

There is reluctance by the pregnant women to deliver from the health units. Majority of the respondents were of the view that community involvement was important in the prevention of PPH among the mothers. From the perspective of the health workers, Community can play a leading role in encouraging mothers to deliver from the hospitals and health centres; transport a woman to hospital, tell more people about AMTSL;

Perceived barriers to community involvement in AMTSL

- Limited number of well equipped health centres at parish level.
- Lack of transport
- Poor roads
- Poverty
- Social stigma associated with delivering from health units.
- Cultural beliefs such as placenta preservation and position of delivery.
- Un preparedness to respond to PPH emergencies
- Inability to demand for services
- Fear to pay money at the health units
- Fear of a caesarean delivery if they went to hospital
- Distance of health units from the communities
- Lack of transport

- Lack of skilled personnel in the hospitals
- Use of local medicine in the community
- Social stigma associated with delivering from the health units

When a woman delivers from the hospital, they are not considered strong enough.

(Medical superintendent Kuluva hospital)

Community members are not organized to effectively respond to bleeding among mothers

How to get the community involved in AMTSL

The findings of the study show that there is an urgent need to mobilize the communities to effectively prevent and manage PPH among mothers. Communities need to be made sensitized on the social consequences of bleeding during delivery, the magnitude of the problem, and how they can effectively intervene. For instance, the form of community mobilization can address cultural issues and stigma associated with delivering from home, improve emergency preparedness such as community ambulances for those who are a distance away from the health centres. According to the community leaders and health workers interviewed, this can be achieved through various ways such as:

a) *Use of the mass media* to sensitize the communities on AMTSL. Radio programmes were cited as one of the most effective methods of getting information to the communities.

b) *Working with Local Council leaders* to sensitize the community and changing community attitudes. For instance the secretary for health at local council one can be in a position to sensitize the community on the importance of delivering from health units as opposed to home deliveries. village meetings and house visits can pass on vital information to the community members regarding bleeding among mothers

c) *Posters*

Posters strategically located at the health units or in community centres can sensitize and remind community members on the importance of delivering from health units.

d) *Health education programs for the communities*

Health education programs for the communities can also play a leading role in community sensitization on the problem of PPH during and after delivery. Sensitization programs can also be used to encourage mothers to deliver from hospitals.

e) *Religious leaders* such as Imams, priests and pastors can also be a vital conduit of information. Once sensitized, religious leaders can play a leading role in community sensitization on PPH. It was for instance observed that Sensitizing them and making them aware of the dangers of PPH Seminars, Update handbooks, Community involvement

f) *Village Health Teams* once facilitated and empowered, can also help in changing community attitudes.

g) *Working with TBAs* to improve service delivery. In the foreseeable future, TBAs will continue to play a vital role in the rural areas. Therefore it is recommended that they are sensitized on how to manage the Third Stage of Labour to prevent PPH. One local leader in Kabala even suggested attaching TBAs to particular health units in their communities. This would ensure that mothers

who have trust in the TBAs will access the health units and receive the interventions that they require.

h) *Men mobilization* is important in changing community attitude. The findings of the study show that men, as decision makers and financiers of women's health play a major role in prevention of maternal complications. It was ascertained for instance that supportive husbands reduce the incidences of complications. There is growing evidence that involving men in reproductive health can reduce incidences of complications and increase quality of service.

6. Conclusions and recommendations

This study documented practices during the third and fourth stages of labor in a nationally representative sample of public facility-based, vaginal births in Uganda. The results show that 89.2% of such births receive a uterotonic drug during the third and fourth stage of labor. Ergometrine was used more than oxytocin in all the deliveries (61.4% and 27.4% respectively). A significant number of providers gave the uterotonic drug (ergometrine) after the delivery of the placenta or in the fourth stage of labor. 10.8% of the women did not receive any uterotonic drug.

Use of AMTSL according to the recommendations of FIGO/ICM was observed in 5.4% of deliveries. A variety of factors account for the relatively low use of AMTSL as compared to the overall use of oxytocin. These include the delayed administration of oxytocin following the delivery of the fetus, incorrect dose, lack of controlled cord traction, lack of uterine massage immediately following delivery of the placenta and no use of uterotonic in third and fourth stage of labour. If the definition of AMTSL is relaxed to allow administration of the uterotonic drug within the first 3 minutes (as opposed to 1 minute) following delivery of the fetus, 7.3% of deliveries received AMTSL. The use of AMTSL using the correct or adequate definition varies by region, with two regions (50%) showing no deliveries for either definition. The use of AMTSL also varied by the type of health facilities and location of the facility, with the health centres showing no deliveries for the strict definition of AMTSL and facilities in rural setting showing no deliveries for both definitions. Of concern is 10.8% of the deliveries did not receiving any uterotonic drug at all.

In Uganda, the policy environment is very supportive of AMTSL. At the national level, the Standard Treatment Guidelines (Essential Maternal and Neonatal Clinical Guidelines for Uganda) include postpartum hemorrhage, and provide recommendations regarding its prevention that does not differ from the FIGO/ICM definition of AMTSL. However only one third (33.3%) of the health facilities visited had the national clinical guidelines. The drug of choice in the guidelines is oxytocin. Essential drug list contains both oxytocin and ergometrine for the prevention of postpartum hemorrhage. Unfortunately the National Medical stores, the recommended supplier of government hospitals, have not stocked oxytocin for the last one year. Misoprostol is not yet in the EDL since this drug is not yet registered as a uterotonic. Though the policy environment is good, the unavailability of the STGs in facilities may contribute for the low use of AMTSL observed in this results.

Though the lecturers/tutors emphasize the AMTSL is taught to medical and midwifery students, their curricula does not include the description of AMTSL. It is left for the lecturer to discuss it when teaching the management of third stage of labour. There are significantly low number of health providers that have had training in AMTSL

Regarding drugs and supplies, the mean months of stock on hand within drug storage was 7.5 month for oxytocin (range: 0-49 months) and 7.3 months for ergometrine (range: 0-65 months). Nineteen (35%) facilities had no stock of oxytocin, and six (14.3%) facilities had no stock for ergometrine. The stock-out periods ranged from 1 to 90 days. About a third of the health facilities do not stock oxytocin reason being that the primary supplier National Medical Stores for the past one year stocked only ergometrine. The most common reasons for stock-out (in order of their frequency) were the delay by the supplier to deliver the drugs, supplier sent less than ordered and consumption exceeding expectation. In addition, families were requested to buy uterotonic drugs in 24 of 48 facilities and syringes in 30 of 48 facilities in our sample.

Measuring the effect of AMTSL implementation to prevent postpartum hemorrhage, our observations showed women who received AMTSL experienced a shorter third stage of labor than those who did not receive AMTSL.

Recommendations

The following recommendations are made based on the results of this study.

National policies

1. Standard Treatment Guidelines (Essential Maternal and Neonatal Clinical Guidelines for Uganda) to be disseminated to all health facilities in the country. Health facilities with low volume patients should be targeted for special attention as the study found out that use of AMTSL in such facilities was lower than in higher-volume facilities in this study.
2. The Ministry of Health should advise the national medical stores to stock oxytocin the drug of choice for AMTSL. The MOH should also sensitize health facility managers that oxytocin is mandatory for AMTSL.
3. The pre-service and in-service training materials should be modified and incorporated into the curricula for the medical doctors and midwives. A specific plan for increased provision of in-service training that includes AMTSL for the whole country should be developed and implemented.
4. AMTSL job aids should be developed and disseminated to all health facilities.

Providers/practice

5. Increase the correct use of AMTSL by creating a plan to improve the following practices: administration of the uterotonic drug within one minute of the delivery of the baby, correct dose of the uterotonic drug, application of controlled cord traction, and immediate massage of uterus after delivery of the placenta.
6. Prioritize type of facilities and regions with particularly low use of AMTSL.

Logistics and supplies

7. The procedures for procurement (national and locally) and distribution of uterotonic drugs, particularly oxytocin should be reviewed, to ensure that all facilities have adequate supplies of oxytocin to provide AMTSL to all women having a vaginal birth.
8. Oxytocin, a life-saving drug, should be made available to all women. If women cannot pay for oxytocin for AMTSL purposes, it should be provided to them at no cost.

Monitoring and evaluation

9. Develop a monitoring system for facilities that monitors the routine use of AMTSL. Supervisors should be trained in AMTSL, and supervision checklists should be included as an indicator of quality.
10. Add a column to labor and delivery logbooks to monitor the use of AMTSL.
11. Implement clinical audits focused on AMTSL.

12. To develop best practices for introduction and modeling of AMTSL at point of services (labour Ward). For example AMTSL Trials of Improved Practices (TIPS) should be conducted among skilled birth attendants who perform deliveries frequently.

In summary, AMTSL is low in Uganda, with less than 8% of births benefiting from this practice. The main reason being that uterotonic is given after the delivery of the placenta. However policies are in place and there is significant support from the Ministry of Health and other numerous agencies that are advocating for the implementation of this practice correctly. This support, along with the overall availability and high use of uterotonics, will allow Uganda to move quickly to increase the use of the effective intervention, AMTSL and to expand the practice to all providers and facilities in Uganda to decrease PPH and save women's lives.

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