



# Prevention of Postpartum Hemorrhage Initiative (POPPHI) Project

Evaluation Report of Training  
Strategies for the Active Management  
of Third Stage of Labor

**April 2007**

This publication was produced for review by the United States Agency for International Development. It was prepared by RTI International and PATH.

# Prevention of Postpartum Hemorrhage Initiative (POPPHI) Project

Evaluation Report of Training Strategies for the Active Management of Third Stage of Labor

Contract GHS-I-02-03-00028-00

Prepared for  
USAID/GH/HIDN/MCH

Prepared by  
RTI International  
3040 Cornwallis Road  
Post Office Box 12194  
Research Triangle Park, NC 27709-2194

and

Frances Ganges  
POPPHI  
PATH  
1800 K St. NW, Suite 800  
Washington, DC 20006 USA  
Tel: 202.822.0033 Fax: 202.457.1466

RTI International is dedicated to conducting research and development that improves the human condition by turning knowledge into practice. With a staff of more than 2,500, RTI offers innovative research and technical solutions to governments and businesses worldwide in the areas of health and pharmaceuticals, education and training, surveys and statistics, democratic governance, economic and social development, advanced technology, energy, and the environment. The second largest independent nonprofit research organization in the United States, RTI maintains nine offices in the U.S., five international offices, and one international subsidiary, as well as project offices around the world.

RTI International is a trade name of Research Triangle Institute.

The author's views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

## Background

Research has demonstrated the effectiveness of active management of the third stage of labor (AMTSL) as a feasible and low-cost intervention that prevents postpartum hemorrhage. In several major studies, AMTSL was associated with a significant decrease in postpartum hemorrhage (PPH). It is estimated that AMTSL can eliminate at least half of postpartum hemorrhage cases—potentially saving thousands of women’s lives.

PPH—excessive bleeding after childbirth—is the single most important direct cause of maternal deaths in developing countries, with an estimated 14 million cases of pregnancy-related hemorrhage each year (World Health Organization [WHO] 1998). A woman can die within two hours after the onset of PPH if she does not receive proper treatment. In developing countries, where most births occur in homes or local clinics, the interventions needed to treat postpartum hemorrhage—emergency referrals, obstetric care, blood transfusion, and surgery—are often out of reach. Treatment simply is not available for the majority of women.

The availability of trained personnel is critical to the widespread use of AMTSL. To this end, many programs have incorporated AMTSL into their safe motherhood or related in-service training. However, to reduce mortality from PPH, AMTSL must be available for every woman, regardless of where she gives birth. This requires the training and supervision of maternal health providers at all levels. Periodic training updates will also be needed as AMTSL is integrated into pre-service programs.

Before considering recommendations on AMTSL training, POPPHI conducted a small evaluation to review available training strategies. The evaluation comprised the following:

- Review of existing training materials on AMTSL.
- Review of recent literature on relevant training strategies and methodologies.
- Interviews with experienced maternal–newborn trainers.
- Review of alternatives to traditional classroom training.

For the purposes of this report, AMTSL is defined as the use of the following components, used together to prevent PPH:

- Administering uterotonic drugs within one minute of birth (oxytocin is the drug of choice).
- Assisting with the delivery of the placenta, known as controlled cord traction (CCT).
- Massaging the uterus after the placenta has been delivered.

This report summarizes the evaluation, outlines relevant resources, and presents preliminary recommendations based on evaluation findings. Appendix A includes a list of technical and training resources, including Web links, training documents, and other resources used in the evaluation.

## Existing Training Materials

Many countries have developed their own training manuals; others have adapted generic or other program materials. Some of these safe motherhood/maternal health training materials include AMTSL and/or other components of PPH prevention or management. The listing in Table 1 is not exhaustive but describes the materials most often cited in interviews and literature searches.

**Table 1. Most-cited Training Materials and Their Components**

Training document	Author(s) or organization	Includes PPH?	Includes AMTSL?	Includes illustrated steps?	Intended audience	Method	Comments
Life Saving Skills for Midwives (3 <sup>rd</sup> Edition)	American College of Nurse-Midwives (ACNM)	Y	Y	Y	Midwives	Competency-based training (CBT)	In-service
Home-Based Life-Saving Skills	ACNM	Y	N	Y	Community providers	CBT	In-service
Basic Maternal and Newborn Care	WHO	Y	Y	Y	Skilled providers	CBT	In-service
Managing Complications of Pregnancy and Childbirth (IMPAC)	JHPIEGO (affiliate of Johns Hopkins University)	Y	Y	Y	Midwives Doctors Nurses	Symptom-based; Rapid assessment decision making	In-service district hospital or similar facility providers
Emergency Obstetric Care for Doctors and Midwives: A Course Notebook for Trainers	JHPIEGO and Averting Maternal Death and Disability	Y	Y (included in delivery checklist)	N	Midwives Doctors	Learning activities and resources; checklists	Trainer's guide—in-service or pre-service
Emergency Obstetric Care: Quick Reference Guide	JHPIEGO	Y	Y	Y	Frontline providers	Self-study; technical resource	Pocket guide; symptom-based; for health post level
Pregnancy, Childbirth, Postpartum and Newborn Care (IMPAC)	WHO	Y	Y (CCT but no uterine massage)	N	Skilled providers	"guide for clinical decision making"	Primary level (facility or community) provider guide

## Literature Review

The literature search focused on training programs, strategies, and methodologies related to training providers in maternal or reproductive health (not just PPH). The findings revealed information about a wide variety of training programs for different cadres but not necessarily detailed descriptions of the training methodology, content, and/or outcome. Appendix A includes a list of the main studies and reports that were reviewed. Summary points from the literature review are as follows:

- Training in AMTSL has mainly been documented among skilled providers in facility settings.
- Programs have trained both facility- and community-based providers in some aspect of prevention, recognition, treatment, and/or referral, or women with PPH. This training sometimes included AMTSL or at least one of the main components (fundal massage, administration of oxytocin, and/or CCT or maternal effort).
- Training resources are available for skilled birth attendants as well as traditional or community providers.
- Various studies are under way in developing countries to determine behavior change, feasibility, and best practices for implementing AMTSL.
- No one method or resource could be cited as a best practice.

## Interviews

Telephone interviews were conducted with 12 seasoned professionals who have been or are involved with various aspects of training. See Appendix A for a complete list and affiliations. Table 2 summarizes the interview responses.

### Legend:

IS = in-service

CBT = competency-based training

IP = infection prevention

PS = pre-service

SS = self-study

PI = performance improvement

**Table 2. Summary of Telephone Interview Responses (N = 12)**

Have you been involved in improving provider skills in AMTSL?	What approaches are you using?	Type of training methodology*	Technical content	Process of developing approach	Strengths/challenges of this approach	Would you use approach again? Why or why not?
Yes: n = 12 (2 not direct training but other aspects of PI)	CBT: n = 7 IS: n = 5	IS: n = 5 OJT: n = 1 CBT: n = 5 PS: n = 1 SS: n = 1	AMTSL: n = 11 PPH: n = 7 IP: n = 9	Development of materials: n = 4; Materials already developed: n = 8; Used technical assistance (TA): n = 1	<p><b>Strengths</b> Availability of in-country resources and support, consistent with WHO standards, short training—2 days, not new skills for most providers—easy to train</p> <p><b>Challenges</b> Need for external TA, lack of adequate clinical cases, high training costs, opposition to AMTSL, support by tutors needed, availability of drugs, process is labor-intensive, training materials take time to develop, low ratio of trainers to trainees, centralized training—on-the-job training would be better, discrepancies between national and international standards</p>	Yes: n = 12 Most said “because it is effective” or “it works.”

\* Some citations involved more than one methodology.

## Conclusions

No one training methodology or strategy will be effective for all programs and settings. Training in the prevention and treatment of PPH can take many forms. In general, there are two possible scenarios, in-service or pre-service training:

1. Training clinically active maternal-newborn providers (in-service).
  - a. On-the-job training – training conducted at provider’s work site
  - b. Centralized training (e.g., workshop)
  - c. Distance learning – may include self-study
  - d. Self-study (with a mentor or preceptor for skills learning/assessment)
  - e. A combination of two or more of the above (e.g., centralized classroom training with on-the-job clinical training)
2. Integrating information into existing pre-service training and supporting the training of pre-service faculty.

The length and type of training will depend on the following factors:

1. Level of provider and scope of practice
  - a. Skilled birth attendant (SBA), community provider
  - b. Whether scope of practice allows:
    - Injections and/or or administration of drugs (e.g., misoprostol)
    - CCT
    - Bimanual compression and/or manual removal of placenta
  - c. Cannot assume that all SBAs are permitted to perform skills
    - Mali: Policy recently changed to permit midwives to give oxytocin.
    - Malawi: Midwives not permitted to do manual removal of placenta.
    - Tanzania: Midwives not permitted to do bimanual compression.
2. Specifics of training
  - a. Are these new skills or updates of skills previously learned?
  - b. Is this integrating into existing training or single-topic training?
  - c. What is the type of training—centralized, on-the-job, or distance learning?
3. Technical content
  - a. PPH prevention (including AMTSL)
  - b. AMTSL only
  - c. Management of PPH (manual removal, bimanual compression)
4. Available resources (e.g., human, financial, logistic)

Pre-service integration is the key to sustainability, but in-service training should be used in the meantime for currently practicing clinicians.

## Non-training Approaches

Learning can also take place through other modes, either in the absence of or complementary to the training approaches listed above. There are numerous examples of these non-training approaches, but the following were most commonly cited by those interviewed:

- a. Peer learning approaches: Refers to the use of teaching and learning strategies in which students learn with and from each other without the immediate intervention of a trainer or tutor. Also known as “cooperative learning,” such approaches may be established and/or monitored by trainers (and may even occur in their presence), but trainers are not involved in directly teaching or controlling the learning activities. Examples of peer learning include study groups, student-led skill practice sessions, team projects, and peer feedback sessions in class.
- b. Learning through observation: A very basic form of learning, often applied to infants and children, in which something is learned through repetitious observation. In the clinical area, this could apply to a skill or practice being learned by watching it being performed, often by a more experienced provider. This type of learning is not always intentional, as clinical practice techniques and habits (not always good ones) are often unknowingly picked up in this manner, especially by pre-service students and new clinicians.
- c. Learning through “champions” or charismatic leaders/advocates: This involves learning about a practice, procedure, or topic through a person or persons who are strong advocates of the topic or practice. This “champion” is an expert in the topic/practice and is intensely dedicated to its defense and promotion. Examples include the following:
  - i. Suellen Miller—a midwife researcher who has been involved in the research for and testing of the anti-shock garment for the management of PPH. Dr. Miller travels and writes extensively, advocating the importance of this innovative technology to save mothers’ lives, especially in low-resource settings.
  - ii. Abhay Bang—a physician dedicated to the reduction of newborn mortality through community- or home-based strategies. Dr. Bang has dedicated his life to community work and has successfully designed programs to reduce newborn morbidity and mortality. Providers and program managers worldwide continue to learn from his advocacy, research, and hands-on involvement in this cause. The Government of India, having also learned from his work, is now replicating his strategies in other Indian states.
- d. E-learning: Refers to computer-generated or computer-enhanced learning. This usually is a form of self-study and is often free of charge. E-learning is useful for acquiring new knowledge but lacks the “hands-on” practice necessary to gain skill competency. It also requires a computer and Internet access. Many technologies can be used in e-learning, such as multimedia CD-ROMs, Web-based learning/teaching courses or materials, Web sites, simulations, and discussion boards. Examples include



- The Preventing Postpartum Hemorrhage course from the USAID Global Health E-learning Center ([www.globalhealthlearning.org](http://www.globalhealthlearning.org)).
- Emergency Obstetric Care for Doctors and Midwives, developed by JHPIEGO and the Averting Maternal Death and Disability program. The course, which includes information on PPH management, was developed for training providers but can also be used for self-learning. It can be downloaded from <http://www.reproline.jhu.edu>.
- Tutorials. Although this review did not identify a tutorial specific to PPH prevention or management, these types of programs can be very useful for acquiring new knowledge and, in some instances, skill observation. Examples include the interactive tutorial on basic newborn care by Save the Children/Bolivia and the tutorial on Malaria in Pregnancy by JHPIEGO.
- E-mail discussion forums. These processes are usually informal, with a group of several people who discuss ideas, share resources and technical updates, and ask and respond to topical questions. Advantages are that a forum can be started, expanded, or stopped any time, and participants are free to join in as they desire or are available. The POPPHI director, along with some colleagues, participated in such a discussion on community-based management of PPH.

## Recommendations

1. When possible, use existing training materials that have already been adapted for country-specific use.
2. Develop training modules for the following:
  - a. Self-study for both prevention and management of PPH and AMTSL only.
  - b. Short technical updates that can be adapted for various types of in-service training. Include both PPH and AMTSL-only training as appropriate
3. Update/revise CD-ROM on AMTSL and make available in different media (e.g., transparencies, PowerPoint, hard copy, video). Include audiovisuals in modules. Consider an interactive CD-ROM for self-study.
4. Field test new modules using a variety of training methodologies.
5. Support operations research of community-based AMTSL.
6. Support integration of PPH prevention and management into pre-service curricula (midwifery, medical, and nursing as well as other relevant providers like clinical officers).
  - a. Support the training and follow up of clinical and classroom faculty including examiners and staff at all student clinical sites. Physicians, who are not otherwise involved in technical updates, are often included.
7. Consider the whole-site training approach to implementing PPH training (see Appendix A).

## Appendix A. Literature Review

The following is a list of the main articles, reports, and Web sites reviewed.

- Title:** A cluster randomized controlled trial of a behavioral intervention to facilitate the development and implementation of clinical practice guidelines in Latin American maternity hospitals  
**Author:** Althabe F, Buekens P, Bergel E, Belizán JM, Kropp N  
**Source:** *Biomed Central Women's Health*. 2005;11;(5):4  
**Web site:** <http://www.biomedcentral.com/content/pdf/1472-6874-5-4.pdf>  
**Summary:** A significant proportion of the health care administered to women in Latin American maternity hospitals during labor and delivery has been demonstrated to be ineffective or harmful, whereas effective interventions remain underutilized. The routine use of episiotomies and the failure to use AMTSL are good examples. The aim of this trial is to evaluate the effect of a multifaceted behavioral intervention on the use of two evidence-based birth practices, the selective use of episiotomies and AMTSL (injection of 10 International Units of oxytocin). The intervention is based on behavioral and organizational change theories and was based on formative research. Twenty-four hospitals in 3 urban districts of Argentina and Uruguay will be randomized. The main outcomes to be assessed are the rates of episiotomy and oxytocin use during the third stage of labor. Secondary outcomes will be perineal sutures, postpartum hemorrhages, and birth attendants' opinions.
- Title:** Curriculum analysis for the midwife curriculum development group  
**Author:** Herem A (GTZ)  
**Web site:** <http://rc.racha.org.kh/docDetails.asp?resourceID=48&categoryID=28>  
**Summary:** This report provides an analysis of 5 current midwifery training programs (Cambodia), and recommendations to a working group for supporting its decision making, including how to upgrade skills of current midwives, what midwifery training might be provided to nurses and how to provide such training, and provision for training of new midwives. Only one curriculum specifically mentions AMTSL (“controlled management of the third stage”), but no other useful information is given.
- Title:** A midwifery model for training traditional midwives in Guatemala: A report from the field  
**Authors:** Foster J, Anderson A, Houston J, Doe-Simkins M  
**Web site:** <http://www.midwivesformidwives.org/pdf/article02.pdf>  
**Summary:** This report describes the characteristics of a model of training of traditional birth attendants. Information was gathered through interviews of the traditional birth attendants themselves, trainers, allied health professionals, and volunteers. The report provides limited information on the content of training.
- Title:** Report on the evaluation of advanced midwifery training in South Africa  
**Author:** Mativandlela TM  
**Web site:** <http://www.info.gov.za/otherdocs/1998/midwifetrain.pdf>  
**Summary:** This report assesses the Decentralised Program for Advanced Midwifery (post-graduate course) and the distance learning/self-study Perinatal

Educational Program programs. The results indicated that the skills of the advanced midwives were not being utilized effectively; the Perinatal Educational Program was not widely implemented; and the distributed manuals were not being utilized.

5. **Title:** Health service quality improvement after normal delivery: Competency-based training  
**Author:** PRIME II  
**Web site:** [http://www.gfmer.ch/Endo/PGC\\_network/Health\\_service\\_quality\\_improvement.htm](http://www.gfmer.ch/Endo/PGC_network/Health_service_quality_improvement.htm)  
**Summary:** PRIME II trained skilled birth attendants in AMTSL for vaginal deliveries at 8 pilot sites in Mali as part of the United States Agency for International Development's (USAID's) special initiative to prevent PPH in 4 African countries (Mali, Benin, Ethiopia, and Zambia). PRIME II also helped to begin work at the national level to incorporate AMTSL into service standards and protocols, start the process of revising pre-service training curricula to include AMTSL, and emphasize the importance of endorsing skilled attendants to administer oxytocics. Key results were: Provider scores for overall performance of AMTSL (record keeping, infection prevention, administration of oxytocin, controlled cord traction, and uterine massage) increased from 29% at baseline to 94% at final evaluation. Vaginal births with AMTSL at the intervention sites increased considerably, from 0% to 55% (6,151/11,191 births). No complications were reported at any of the sites. The Ministry of Health has indicated its interest in countrywide scale-up of AMTSL, and USAID/Mali has included prevention of PPH as a high-impact service in its two bilateral projects.
6. **Title:** Skilled birth attendance: What does it mean and how can it be measured?  
**Author:** Carlough M, McCall M  
**Web site:** [http://www.figo.org/publications\\_AMDD.asp](http://www.figo.org/publications_AMDD.asp) (May 2005 article in International Federation of Gynecology and Obstetrics [FIGO] AMDD publications)  
**Summary:** This is a clinical skills assessment of maternal child health workers in Nepal. These workers have a 15-week basic course and then a 6-week refresher in midwifery skills. This study compares the results of clinical skills assessments from 104 randomly selected maternal and child health workers and concluded that refresher-trained providers performed better than those who did not receive refresher training. Also, maternal and child health workers on average had an acceptable level of knowledge and skill to function as community skilled birth attendants. Not all the skills of this cadre were mentioned, but "PPH management" appeared to include administration of uterotonics and uterine massage.
7. **Title:** Improved responses to neonatal emergencies (Nicaragua)  
**Author:** PRIME II  
**Web site:** [http://www.prime2.org/prime2/pdf/PP\\_RR\\_31\\_300.pdf](http://www.prime2.org/prime2/pdf/PP_RR_31_300.pdf)  
**Summary:** This is a brief on the pilot project in rural Nicaragua to improve emergency obstetric and neonatal care. Focus was on danger signs, delays, and response to postpartum bleeding. Final evaluation demonstrated significant improvement in provider performance. Management of PPH by physicians, nurses, and auxiliary nurses also improved.

8. **Title:** Making it happen: Using distance learning to improve reproductive health provider performance  
**Author:** PRIME II  
**Web site:** [http://www.intrah.org/images/stories/pubs/DL\\_high\\_res.pdf](http://www.intrah.org/images/stories/pubs/DL_high_res.pdf)  
**Summary:** This document examines distance learning as an effective training approach for reproductive health providers in developing countries and provides illustrative examples for training. It helps the reader plan and implement effective distance learning.
  
9. **Title:** No magic bullets: A systematic review of 102 trials of interventions to improve professional practice  
**Source:** *Journal of the Canadian Medical Association*  
**Author:** Oxman AD, Thomson MA, Davis DA, Hayes B  
**Web site:**  
[http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list\\_uids=7585368&dopt=Abstract](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=7585368&dopt=Abstract)  
**Summary:** This article reports on a study to determine the effectiveness of different types of interventions for improving health professional performance and health outcomes. It concludes that there are no “magic bullets” for improving the quality of health care, but a wide range of interventions, if used appropriately, could lead to important improvements in professional practice and patient outcomes.
  
10. **Title:** What is whole-site training?  
**Author:** EngenderHealth  
**Web site:** [http://www.engenderhealth.org/pubs/workpap/wp11/wp\\_11.html](http://www.engenderhealth.org/pubs/workpap/wp11/wp_11.html)  
**Summary:** Whole-site training is an approach for meeting the learning needs of all staff at a health care service-delivery site. This paper describes whole-service training, the advantages it offers, the challenges it faces, and examples of where it is being used. The approach has been developed in response to the training needs of health care providers working in reproductive health in developing countries.

## Interviews

The following professionals were interviewed as a part of this evaluation:

1. Margareta Larsson, WHO
2. Hadi El Tahir, EngenderHealth
3. Susan Otchere, Save the Children
4. Cheick Toure, IntraHealth/Mali
5. Perle Combary, IntraHealth/Benin
6. Sandy Buffington, ACNM
7. Ellen Israel, Pathfinder International
8. Judith Standley, United Nations Children’s Fund
9. Patricia Gomez, JHPIEGO
10. Frances Ganges, Independent consultant
11. Barbara (Kinzie) Deller, JHPIEGO
12. Susan Rae Ross, Independent consultant

## Training materials

1. Marshall M, Buffington S. *Life Saving Skills Manual for Midwives*. 3<sup>rd</sup> Edition. Washington, DC: ACNM; 1998.
2. Buffington ST, Sibley LM, Beck DR, Armbruster DA. 2004. *Home-Based Life-Saving Skills*. Silver Springs, MD: ACNM; 2004.
3. JHPIEGO. *Basic Maternal and Newborn Care*. Baltimore, MD: JHPIEGO; 2004.
4. WHO. *Managing Complications in Pregnancy and Childbirth: A Guide for Midwives and Doctors*. WHO/RHR/00.7. Geneva: WHO; 2000.
5. JHPIEGO. *Emergency Obstetric Care: Quick Reference Guide for Frontline Providers*. Baltimore, MD: JHPIEGO; 2003.
6. WHO. *Pregnancy, Childbirth, Postpartum and Newborn Care: A guide for essential practice –IMPAC series*. Geneva: WHO; 2003.