

# Low Dose, High Frequency: A Learning Approach to Improve Health Workforce Competence, Confidence, and Performance

## Background

Improving the quality of health services and subsequently improving outcomes for women and families is the overarching goal of Jhpiego's programs. Building the capacity of health care providers to deliver evidence-based care is one important piece of quality improvement (QI). Traditional training approaches that focus on extended, off-site, group-based workshops have had limited effectiveness in improving and maintaining provider performance after training. New evidence identifies better ways to optimize sustained improvements in service delivery. These ways include the use of interactive techniques that engage the learner, provide opportunities for simulated practice, constructive feedback, and learning opportunities planned and delivered at an appropriate dose and frequency. This brief defines Low Dose, High Frequency (LDHF) learning and explains the benefits of this approach to building the capacity of providers. This brief also provides an example of Jhpiego's experience and results with LDHF by highlighting the Helping Mothers Survive (HMS) program.

## Introduction

Traditional in-service training typically takes place in a workshop setting, where providers leave their workplaces for variable lengths of time to receive didactic classroom training in a large group. (For example, basic emergency obstetric care or essential obstetric care is often taught over two or three weeks, and HIV/AIDS/infectious disease is taught over one or two weeks.) In some settings, these didactic sessions are coupled with simulation and/or direct patient care in a clinical setting. Blended learning approaches in which learners are expected to review didactic content in advance of training activities help shorten off-site training time, but are not always practical for busy providers. In addition, workshops do not reach all health workers in need of in-service updates and may or may not be attached to a QI component that measures improvement in clinical performance.

## Evidence

A systematic review of interventions to improve health care provider performance in low- and middle-income countries (LMIC) identified that one-time training interventions result in very low effect size.<sup>1</sup> In 2011, Jhpiego's review of the literature on effective teaching helped to delineate a set of techniques more likely to improve learning outcomes and possibly result in changes in provider performance.<sup>2</sup> This review identified that didactic instruction, such as relying on reading and lecture, often results in no to low learning outcome. In contrast, the use of interactive, practice-heavy techniques, such as clinical simulation, case-based learning, hands-on practice with anatomic models, and immediate feedback on performance, results in better learning outcomes. In addition, repeated frequency is preferable to one-time training interventions; workplace learning may be superior for skill acquisition, and multiple media modes of delivery can be used to deliver training more efficiently. Using these techniques will result in greater improvement in clinical performance.

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<sup>1</sup> Rowe AK, Rowe SY, Vujcic M, et al. 2009. Review of Strategies to Improve Health Care Provider Performance. In: Peters DH, El-Saharty S, Siadat B, et al. eds. Improving Health Service Delivery in Developing Countries: From Evidence to Action. Washington, D.C.: The World Bank; 101-126.

<sup>2</sup> Bluestone J, Johnson P, Fullerton J, et al. 2013. Effective in-service training design and delivery: evidence from an integrative literature review. *Human Resources for Health*. 11:51.

The literature also suggests that in order to improve quality, training alone is not sufficient. In their systematic review of LMIC, Rowe et al. identified that when training is combined with QI efforts, such as coaching or supervision, the effect size is significantly greater.<sup>1</sup> To be most effective, training activities must be part of a broader QI framework that includes coaching and supportive supervision and where needs are assessed across the health care system.

## Building Capacity with an LDHF Approach

### Definition

LDHF is a capacity-building approach that promotes maximal retention of clinical knowledge, skills, and attitudes through short, targeted in-service simulation-based learning activities, which are spaced over time and reinforced with structured, ongoing practice sessions on the jobsite.

### What Does the LDHF Approach Entail?

LDHF learning and capacity-building are achieved through two important and distinct applications:

1. Clinical content is delivered during short simulation-based learning activities, which are spaced over time to optimize learning.
2. Ongoing practice sessions at the jobsite follow each in-service education activity to cement and sustain learning. These sessions are completed before progressing to additional clinical content. Practice sessions are brief and use a combination of training techniques that engage learners. These sessions may include role play, team drills, and clinical simulations to support clinical decision-making as well as hands-on repetition of skills with feedback from a peer mentor.

Where group-based basic emergency obstetric and newborn care (BEmONC) or skilled birth attendant (SBA) training exists, LDHF capacity-building can complement and reinforce the traditional training structure by acting as the “booster shot” to the initial “immunization” of the workshop. Because LDHF learning is facility-based and includes the entire team of providers, it serves to extend the reach of learning to build competencies and teamwork for all providers.

### What Are the Principles of LDHF Learning?

1. **Competency-focused**—Content is focused on a desired set of competencies that prioritize clinical simulation as a technique to build those competencies. Learners receive targeted knowledge updates, observe demonstrations, perform clinical simulations, and practice new skills while receiving feedback on their performance. Information given is what providers “need to know”—eliminating what is “nice to know”—but includes additional resources for self-directed learning.
2. **Simulation and case-based learning**—While content delivery is required, it should be as brief as possible, with learning focused on hands-on simulation, case studies, and other interactive exercises.
3. **Appropriately spaced, brief periods of content delivery**—Targeted content is delivered in a single day or over several days. Content delivery is spaced such that new skills can be practiced and honed before additional skills are taught, allowing enough time for consolidation of skills during the practice period.
4. **Team-focused and facility-based**—To decrease absenteeism, improve teamwork, address onsite barriers, and promote changes to provider performance, facility-based delivery is essential. Where the entire team is trained, all providers will be onboard with new or updated clinical practice and can work together to implement improvements in care.
5. **Ongoing practice of skills and exposure to content after initial training/exposure**—All content delivery should be followed by reinforcement through consistent, scheduled practice and emergency drills over a sufficient period of time to enable consolidation of skills. These practice sessions should be of short duration (15 minutes or less), structured, concrete, problem-focused, and include debriefing.
6. **Facility-based peer staff is essential to facilitating practice**—Where there is a designated peer at the facility who can coach practice on simulators or other interactive exercises after learning, practice sessions increase and outcomes improve. Therefore, peer staff should be prepared and oriented at the time of the in-service education and before the initial practice session.
7. **Tracking results**—It is important to measure clinical performance and outcomes, where feasible. This can be done through an objective, structured clinical exam (OSCE) prior to the beginning of an LDHF intervention, and as a

follow-up assessment. Clinical outcome data should be used to help document the effectiveness of the approach and to note any gaps in performance.

8. **Changes in service delivery require comprehensive QI efforts**—Change in clinical performance requires more than in-service education. During initial education and ongoing clinical skills practice sessions, the service delivery system can be examined, with gaps noted and addressed with support from clinical supervisors.

### Helping Mothers Survive: LDHF Approach in Action

Using the evidence for LDHF learning, Jhpiego created HMS, a suite of facility-based learning modules to improve care and save lives during pregnancy and birth. HMS training provides brief, simulation-based updates of select content to improve competency and confidence of the entire health care team when performing lifesaving skills. Essential provider behaviors are reinforced following the training activity through facility-based, hands-on practice using learning materials and action plan job aids to continue developing skills and improve clinical decision-making. These brief sessions are facilitated by a specially oriented onsite peer. Repeated clinical updates and reinforcement sessions are spaced over time to allow for ample integration of new knowledge and skills before moving on to additional content areas.



Quality improvement activities are the framework for selection and delivery of content areas. A brief needs assessment is followed by selection of QI activities, which include the LDHF delivery of relevant content to providers at their facilities based on identified gaps in knowledge or skills. This delivery is followed by support for and monitoring of practice activities, together with the facility use of outcome data to solve problems. Using the LDHF facility-based approach, HMS modules extend the reach of conventional training by engaging the entire team with “boosters” of targeted, essential content that is timed to maximize impact and reach all facilities conducting deliveries. To date, Jhpiego and other implementing partners have prepared more than 530 HMS trainers and over 31,000 providers in 53 countries who serve millions of women each year. Four modules—Bleeding after Birth (BAB), Bleeding after Birth Plus (BAB+), Threatened Preterm Birth, and Pre-eclampsia/Eclampsia—have been developed, and Normal Labor and Complications of Labor modules are in the planning stages.

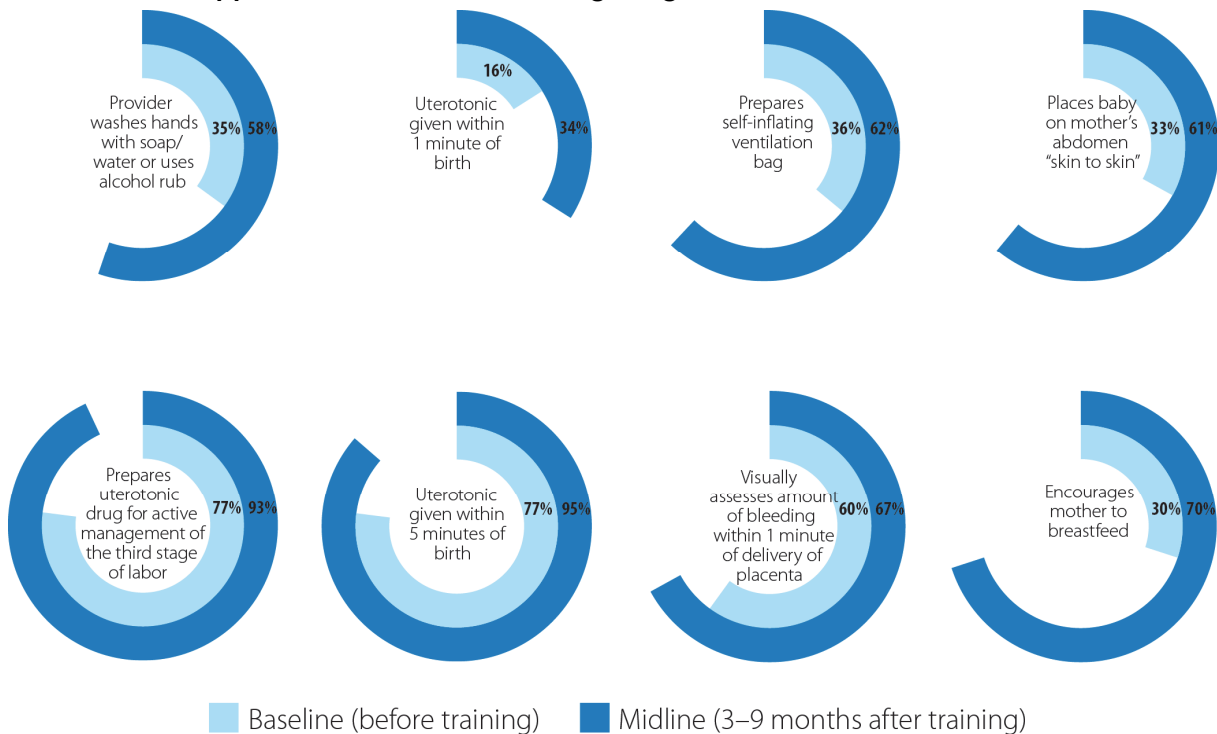
### What Is the Evidence for HMS?

The first “low-dose” HMS module to build capacity for basic management of postpartum hemorrhage (PPH), BAB, was developed and validated in a three-country study in 2012.<sup>3</sup> In 2014, Jhpiego paired HMS BAB with Helping Babies Breathe (HBB) (a comparable LDHF module to address birth asphyxia) in Uganda, under the Saving Lives at Birth research project. The goal was to sustainably build the capacity of providers to prevent and manage PPH and birth asphyxia and to measure change in health care provision and outcomes. Results showed that this LDHF combined approach using an onsite, peer mentor to facilitate practice improved directly observed care, and decreased stillbirth/neonatal death and incidence of retained placenta (see Figure 1 for illustrative results).

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<sup>3</sup> Evans CL, Johnson P, Bazant E, Bhatnagar N, Zgambo J, Khamis AR. 2014. Competency-based training “Helping Mothers Survive: Bleeding after Birth” for providers from central and remote facilities in three countries. *International Journal of Gynecology & Obstetrics* 126, no. 3: 286-290.

**Figure 1. Changes in Observed Care before and after BAB and HBB Facility-Based Training in Facilities That Supported Practice after Training in Uganda**



### Summary

Countries and donors spend significant amounts of funding on in-service training, which represents an opportunity to carefully apply evidence and “take stock of existing practices and identify strategies by which in-service training can be improved to ensure sustainability, effectiveness, and efficiency.”<sup>4</sup> The application of an LDFH simulation- and practice-based approach that is linked to ongoing QI efforts and documentation of outcomes presents a promising strategy for success.

<sup>4</sup> United States Agency for International Development (USAID ASSIST Project). 2013. "A Global Improvement Framework for Health Worker In-service Training: Guidance for Improved Effectiveness, Efficiency and Sustainability." Last modified November 8, 2013. <https://www.usaidassist.org/resources/global-improvement-framework-health-worker-service-training-guidance-improved>.