Using Helping Mothers Survive to Improve Intrapartum Care

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abstract

Data from the past decade have revealed that neonatal mortality represents a growing burden of the under-5 mortality rate. To further reduce these deaths, the focus must expand to include building capacity of the workforce to provide high-quality obstetric and intrapartum care. Obstetric complications, such as hypertensive disorders and obstructed labor, are significant contributors to neonatal morbidity and mortality. A well-prepared workforce with the necessary knowledge, skills, attitudes, and motivation is required to rapidly detect and manage these complications to save both maternal and newborn lives. Traditional off-site, didactic, and lengthy training approaches have not always yielded the desired results. Helping Mothers Survive training was modeled after Helping Babies Breathe and incorporates further evidence-based methodology to deliver training on-site to the entire team of providers, who continue to practice after training with their peers. Research has revealed that significant gains in health outcomes can be reached by using this approach. In the coronavirus disease 2019 era, we must look to translate the best practices of these training programs into a flexible and sustainable model that can be delivered remotely to maintain quality services to women and their newborns.

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POTENTIAL CONFLICT OF INTEREST: Dr Evans directs the Helping Mothers Survive (HMS) project and is an instructional designer and expert trainer; Dr Kamunya supports HMS globally as an expert trainer; Ms Tibaijuka supports HMS regionally as an expert trainer and is the technical director of a large project in Tanzania that uses both HMS and Helping Babies Survive.

Although progress has been made in newborn survival, much remains to be done. Gains in child survival have meant that newborn deaths make up a larger proportion of under-5 mortality. In 2018, neonatal mortality accounted for 47% of under-5 mortality, compared to 40% in 1990.[1] To achieve the Sustainable Development Goal 3 to decrease the neonatal mortality rate to ≤12 per 1000 live births,[2] we must look at the maternal-infant dyad and bring increased attention to the quality of maternal care. Maternal complications play a critical contribution to the top 3 causes of neonatal mortality: prematurity, birth asphyxia, and infection.[1] For example, hypertensive disorders in pregnancy can result in growth restriction, fetal compromise, and premature birth.[3] Prolonged or obstructed labor, if not addressed in a timely fashion, may result in birth asphyxia and fetal demise.[4] If left unmanaged, prolonged rupture of the membranes may result in chorioamnionitis and sepsis of the newborn.[5] These complications and others must be identified and managed early to achieve further reductions in neonatal mortality.

An appropriately trained and deployed workforce is key to ensuring the quality of maternal and newborn health care, along with sufficient infrastructure, equipment, consumables, drugs, and robust supply chains and referral systems. The highest attainable standard of mental and physical health of the woman and her newborn, a basic human right, will never be realized without a well-trained, empowered, and properly remunerated workforce. However, providers' ability to offer quality care to women and their newborns is hampered in some settings by a lack of the knowledge, skills, and confidence needed to provide appropriate assessment, monitoring, identification, and management of complications when they arise.[6] To address these gaps, we must intensify our efforts in both pre-service and in-service education.

INNOVATIVE TRAINING APPROACHES CAN IMPROVE PROVIDER PERFORMANCE AND HEALTH OUTCOMES

The Helping Babies Breathe (HBB) initiative provided a foundation for the development of a new model of training to reduce maternal and neonatal mortality. It has succeeded in improving outcomes of newborns requiring help to breathe at birth.[7,8] Although HBB met a great training and supply need for newborn resuscitation, asphyxia is not the only cause of neonatal death. To expand on the HBB initiative and address other knowledge and skills gaps for newborn care, complementary newborn modules were developed by the American Academy of Pediatrics, including Essential Care for Every Baby and Essential Care for Small Babies. In addition, to address gaps in knowledge and skills for maternal care, a series of Helping Mothers Survive (HMS) training modules were developed by Jhpiego, an affiliate of Johns Hopkins University, in partnership with global stakeholders. HMS was purposefully designed to build the capacity of the entire team of providers who care for women and their newborns at birth or assist those who do, including midwives, nurses, doctors, clinical officers, and other assistants.

During development of the first HMS module, evidence emerged suggesting that conventional approaches to training that rely on workshops conducted away from the clinical setting were not yielding the desired results. In 2016, Leslie et al[9] demonstrated that traditional training, even when coupled with supportive supervision, did not meaningfully improve the care of pregnant women and children who were sick. Around this time, new evidence was emerging about the most effective teaching techniques for in-service training.[10] A change in methodology and further innovation were clearly needed to shift the off-site approach to a more holistic workforce-capacity building approach to improve provider performance and health outcomes.

Recognizing the need for fresh training approaches and cognizant of the fact that the same provider often cares for both the woman and her newborn, HMS Bleeding after Birth (BAB) was launched in 2013 to address postpartum hemorrhage (PPH), which is the leading cause of maternal death globally. HMS BAB was modeled on HBB, the first module in the Helping Babies Survive (HBS) series, which recommends hands-on training and continued skills practice after training. To facilitate learning specifically for PPH, the first low-cost childbirth simulator was developed and launched in 2012.[11] Implementation and research experience from HBB and HMS BAB highlighted that a stronger emphasis was needed to help consolidate providers' skills.[12] To fill this need, HMS BAB incorporated deliberate practice after training day. This practice is not merely the simple repetition of skills; rather, it is systematic, purposeful practice undertaken with focused attention with the goal of improving performance of a particular skill. The combined method of short hands-on and team-based learning that is delivered on-site and followed by ongoing deliberate practice has been called "low dose, high frequency" (LDHF).

The LDHF training methodology incorporated into HMS programming has been the subject of several research studies. From 2014 to 2015, HMS BAB and HBB were delivered as one-day trainings to all labor ward staff at 125 hospitals and health centers in 12 districts in Uganda. HMS BAB training was provided to each facility first, followed by HBB training 2 to 3 months later. All providers were asked to deliberately practice

certain skills once per week for a total of 12 weeks after training. Two-thirds of facilities had practice coordinators to facilitate this practice. Direct clinical observations revealed improvements in care practices, such as timely administration of a uterotonic for prophylaxis, preparation of the bag and mask in advance of birth, and breastfeeding within one hour. Improvements were greater in facilities with practice coordinators. Across all facilities, improvement in the care of women and their newborns in the 6 months after the intervention was noted by declines in retained placenta (47%), PPH (17%), fresh stillbirth (32%), and newborn death before discharge (62%) compared with baseline.[13] Similar results regarding HMS BAB training were found in 2 studies in Tanzania resulting in a decrease in blood transfusion and near-miss cases.[14,15]

EXPANDING THE SCOPE AND APPROACHES EMPLOYED BY HMS

HMS has since expanded to include a suite of 6 training modules as well as a fresh approach to capacity building (Table 1). This suite now encompasses all basic emergency obstetric and newborn care competencies that directly affect newborn survival, including routine care for normal and prolonged or obstructed labor and management of preeclampsia and eclampsia. In particular, HMS Essential Care for Labor & Birth (ECL&B) is the cornerstone of the suite and has the largest potential to improve outcomes of both women and their newborns (Fig 1). Grounded in respectful care, ECL&B reinforces the importance of monitoring the woman and her fetus to ensure early identification of complications to decrease severe morbidity and mortality.

In response to further evidence suggesting that poor quality of care in facilities is a greater barrier to good outcomes than access to care,[6] the original LDHF approach has been embedded in a quality improvement framework, with training targeted to identified performance gaps. HMS training is still provided on-site to the whole team, by using hands-on learning, and followed by deliberate skills practice, but training is also supported by use of videos, other digital tools, and quality improvement activities. These quality improvement activities are often as simple as posting referral and transportation plans and ensuring the emergency cart is well maintained, but they also include more complex activities, such as patient chart reviews and reordering client service flow.

Localizing training and education to facilities where care is delivered allows for problems to be solved in real time and training updates to be delivered where needed most. On the basis of the World Health Organization's quality of care framework,[16] the HMS initiative matches training with competencies required for quality care, delivers training to all levels of the health system, and emphasizes women's experiences of care and human rights–based approaches. However, training alone can only go so far to improve outcomes; health system gaps also must be addressed to the fullest extent possible. When training is deployed to address identified performance gaps and is embedded in a quality improvement framework, we have the opportunity to achieve much greater impact. The quality improvement guide, "Improving Care of Mothers and Babies: A Guide for Improvement Teams," has been described in this supplement and offers one example of how to support

TABLE 1 HMS Modules

Module	Competencies
BAB Complete[a]	Active management of third stage of labor; early detection and management of PPH including management of shock, manual removal of placenta, uterine balloon tamponade, and cervical laceration repair
Preeclampsia & Eclampsia[b]	Correct assessment and classification of hypertensive disorders of pregnancy, administration of loading and maintenance doses of magnesium sulfate and antihypertensive medications, management of convulsions
ECL&B[c]	Respectful care and women's choice; infection prevention; classification, management, and monitoring of labor; early identification of complications; identification of poor progress of labor; supportive care during all stages of labor and birth
Threatened Preterm Birth Care[d]	Gestational age assessment; diagnosis of conditions leading to preterm birth: preterm labor, preterm prelabor rupture of membranes, severe preeclampsia and eclampsia, chorioamnionitis, and antenatal hemorrhage; treatment of maternal infection; advanced care for preterm newborns: resuscitation, safe oxygen use, thermal care, feeding support, treatment of infection
Prolonged & Obstructed Labor	Timely identification of prolonged or obstructed labor, treatment of infection, correct use of augmentation, rapid referral for obstructed labor, management of shoulder dystocia, and maneuvers for breech birth
Vacuum Assisted Birth	Decision-making for client selection for vacuum delivery and correct use of vacuum device, assessment and management of maternal and neonatal complications from vacuum birth

Adapted from Jhpiego. Helping Mothers Survive. 2020. Available at: https://hms.jhpiego.org/. Accessed June 2, 2020.
[a] Jhpiego. Bleeding after Birth Complete. 2020. Available at: https://hms.jhpiego.org/bleeding-after-birth-complete/. Accessed June 2, 2020.
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[d] Jhpiego. Threatened Preterm Birth Care. 2020. Available at: https://hms.jhpiego.org/threatened-preterm-birth-care/. Accessed June 2, 2020.

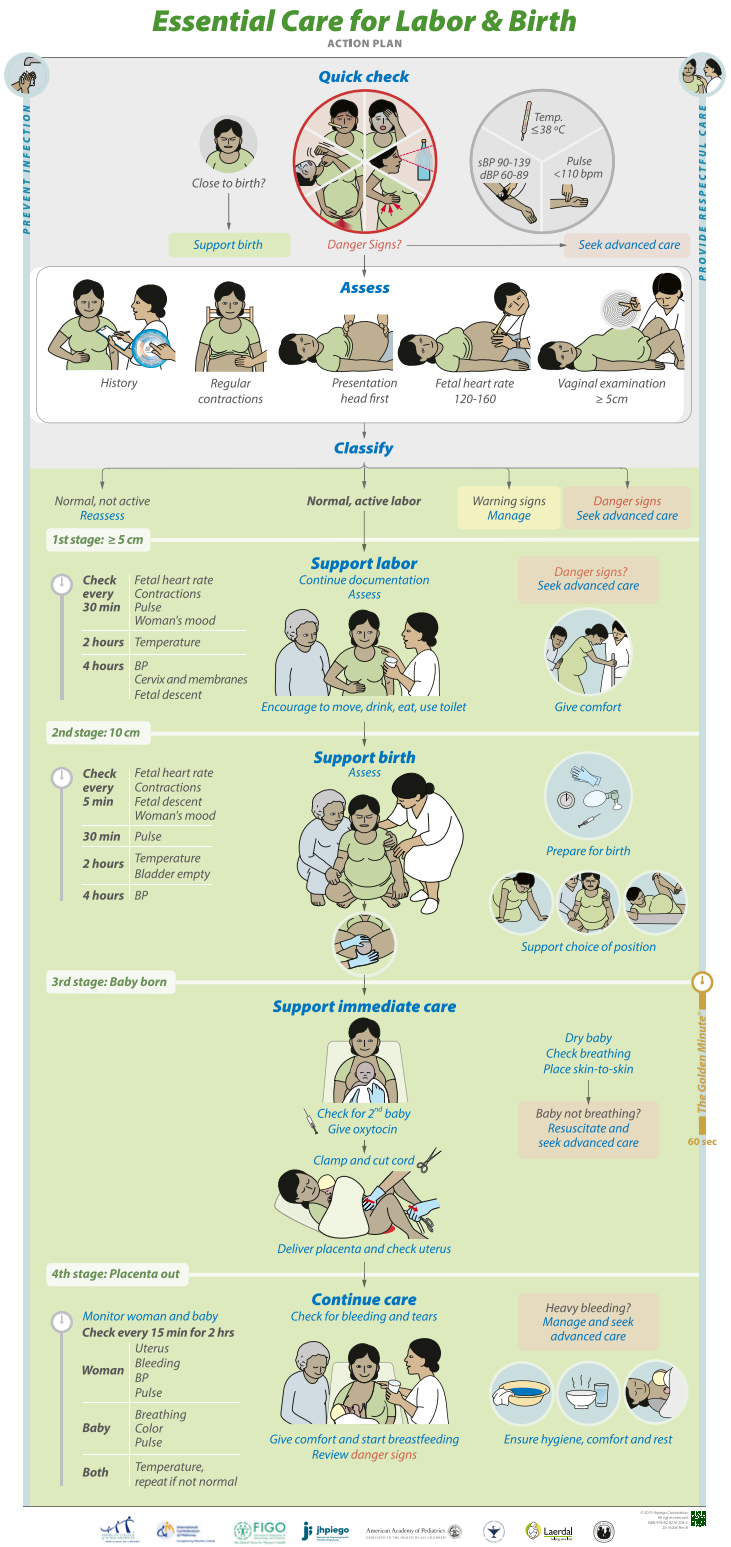

FIGURE 1
ECL&B action plan. BP, blood pressure; bpm, beats per minute. (Reprinted with permission from Jhpiego Corporation. *Essential Care for Labor & Birth Action Plan*. Baltimore, MD: Jhpiego Corporation; 2019.)

quality improvement locally.[17] This guide is particularly relevant in settings where facility-based quality improvement teams are integrated within the health system.

NEXT STEPS

To help ensure the best possible outcomes for newborns and their mothers, we must ensure that pregnant and laboring women are cared for by a workforce that is skilled in assessment, rapid identification, and management of complications. We can work toward this goal by building the capacity of that workforce through this enhanced approach to facility-based training using the LDHF methodology.

HMS and HBS are open access, and the educational strategies can be applied to any clinical service area. Indeed, expanding this interactive, hands-on educational approach to other areas of newborn and child health may help continue to drive reductions in neonatal and child mortality. In particular, the HMS and HBS style of learning can and should be adapted to preservice education, where it is uniquely suited to supporting local curricula through use in skills laboratories. Experience with the 50 000 Happy Birthdays project in Rwanda, Ethiopia, and Tanzania (which is reviewed in more depth elsewhere in this supplement) reveals that HMS and HBS can complement curricula in preservice education institutions in 2 important ways.[18] First, the LDHF approach can be used to strengthen the capacity of staff at clinical practicum sites before they supervise students during clinical placements. Second, the training materials and methods developed for team-based, hands-on learning can work in concert with standing curricula by offering students the opportunity for practice in skills laboratories before they are placed in a clinical site.

Finally, in this challenging time of the coronavirus disease 2019 pandemic, maintaining quality services for women and their newborns is at risk. It is now more important than ever that the health workforce is well prepared. We must now pivot from using only face-to-face training to provide remote learning, mentorship, and support to providers globally. HMS and HBS partners are working together to help meet this challenge in the next phase of our work together.

ABBREVIATIONS

BAB: Bleeding after Birth
ECL&B: Essential Care for Labor & Birth
HBB: Helping Babies Breathe
HBS: Helping Babies Survive
HMS: Helping Mothers Survive
LDHF: low dose, high frequency
PPH: postpartum hemorrhage

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