

Fortifying Neonatal Care in Ghana: An Annual Training Initiative

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ABSTRACT

- The neonatal mortality rate in Ghana is 23 deaths per 1,000 live births, with asphyxia accounting for 50% of deaths in children under age five.
- The Ghana Health Service "Making Every Baby Count Initiative" (MEBCI) provides neonatal resuscitation and essential care training using the American Academy of Pediatrics' Helping Babies Breathe (HBB) and Essential Care for Every Baby (ECEB) modules. Although embedded in select hospitals, MEBCI has limited reach in rural areas.
- The HBB curriculum has been shown to reduce neonatal mortality by up to 50% and stillbirths by 25% in resource-limited countries.
- In partnership with the Eastern Regional Hospital in Koforidua (ERHK), the Penn State College of Medicine (PSCOM) initiated a longitudinal two-phase to expand HBB training to rural healthcare facilities.
- Annual sessions, led by PSCOM Global Health Scholars focus on sustainably enhancing health workers' proficiency in efforts of reducing neonatal mortality in the Eastern Region of Ghana.

INTRODUCTION

- Neonatal mortality in Ghana, at 23 deaths per 1,000 live births, exceeds the UN's Sustainable Development Goal target of 12 by 2023. In the Eastern Region, this equates to about 45 newborn deaths weekly. Preventable asphyxiation accounts for a significant portion of these deaths.



Figure 1. HBB and ECEB training session from 2019 with healthcare workers practicing skills on neonatal simulators.

In 2019, PSCOM and ERKH launched the HBB and ECEB initiative, training 34 midwives in essential newborn care. Unfortunately, the COVID-19 pandemic disrupted follow-up efforts. This highlights a persistent need for ongoing support and routine neonatal resuscitation training.

- The "Saving Newborns" program led by the Global Health Scholars addresses this gap through annual, two-phase training sessions, emphasizing neonatal resuscitation and continued mentorship for health workers in the Eastern Region of Ghana.

METHODS

Program Overview

An annual "Saving Newborns" training for health workers from 17 rural health facilities, co-led by PSCOM Global Health Scholars and ERH.

Phase I: MEBCI Training

- Duration:** Two-day sessions with 48 participants, facilitated 8 Master Trainers (1:6 trainer-to-trainee ratio).
- Resources:** Newborn resuscitation equipment (NeoNatalie resuscitator, penguin suction, and basic delivery sets), educational materials (action plans, flip charts, provider guides).
- Assessment:**
 - Pre- and post-test assessments (i.e., knowledge tests, OSCEs)
 - Pre- and post-test questionnaires on self-efficacy

Phase II: Follow-Up

- Timing:** Six-month post-training site visits
- Assessment:**
 - Skills retention tests
 - Updated self-efficacy surveys
 - Newborn care data

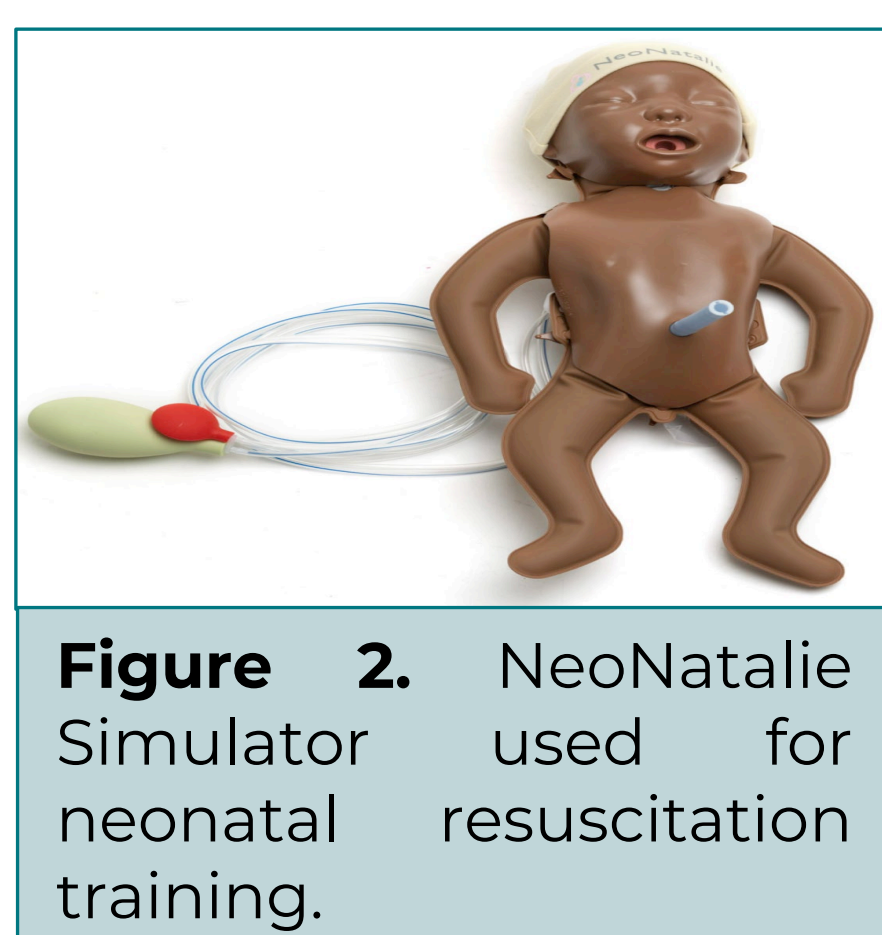


Figure 2. NeoNatalie Simulator used for neonatal resuscitation training.

Analysis

Changes in self-efficacy scores and skills retention will be analyzed and reported as mean agreement scores with standard deviations.

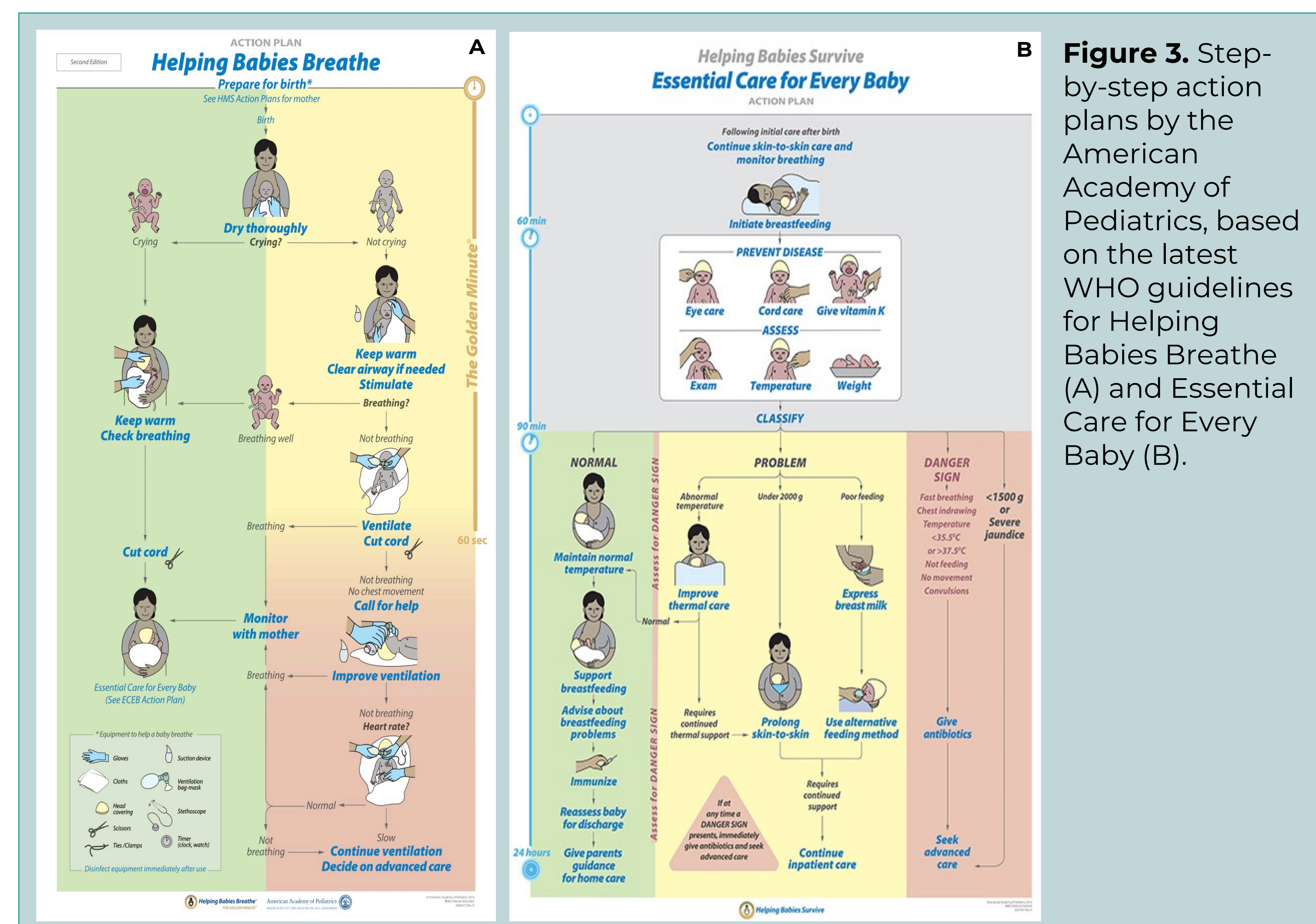


Figure 3. Step-by-step action plans by the American Academy of Pediatrics, based on the latest WHO guidelines for Helping Babies Breathe (A) and Essential Care for Every Baby (B).

ANTICIPATED RESULTS

Based on previous studies¹⁻³ on the implementation of neonatal resuscitation training in various hospitals in Ghana, several anticipated outcomes are outlined:

- 1) Reduction in neonatal mortality rates:** Early neonatal mortality and stillbirth rates aligned with HBB programs conducted in low-resource settings.
- 2) Improved proficiency in resuscitation techniques:** Higher knowledge test and OSCE scores, indicating enhanced clinical skills essential for newborn care.
- 3) Boosted health workers' self-efficacy:** Demonstrated through improved post-training survey scores. This improvement is crucial for empowering midwives to effectively manage complicated births and improve neonatal outcomes.

DISCUSSION

Continuous Support: The 2019 HBB initiative prior to the COVID-19 pandemic, highlighted the need for ongoing training and follow-up to address skill attrition and maintain impact in the Eastern Region of Ghana.

Sustainability and Replication: Integrating HBB and ECEB training into regular performance evaluations ensures long-term viability. The Global Health Scholars' involvement facilitates consistent program growth and scalability.

Training Approach: Implementing a low-dose, high-frequency training methodology enhances skills retention and encourages ongoing mentorship.

Challenges: Barriers include coordination of project logistics between Ghana and the U.S., ensuring frequent refresher courses within budgetary goals, and optimizing health data collection at participating facilities.

Future Directions: Expanding training with AI tools and virtual models could enhance scalability and feasibility.

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