

Helping Babies Breathe Around the World

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ABSTRACT

Helping Babies Breathe (HBB) is an educational curriculum using the train-the-trainer model to teach neonatal resuscitation in resource limited areas. The purpose of this evidence-based program is to reduce global neonatal mortality by educating birth attendants to provide basic neonatal resuscitation. This program directly addresses the Millennium Developmental Goal #4 of reducing child mortality.

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The numbers are staggering: every year, approximately 3.7 million neonates die globally. According to the World Health Organization (WHO), one fourth to one half of these neonates die within the first 24 hours after birth (WHO, 2012). An additional three million stillbirths are also recorded annually (Carlo et al., 2010). Although technology has certainly allowed the developed world to save the smallest of neonates, the same life-saving measures are lacking in undeveloped nations. In fact, neonatal death accounts for approximately one half of the 7.7 million deaths per year of children younger than age 5 (Rajaratnam et al., 2010). In 2000, the United Nations (UN) held a summit that included all 193 nations and adopted the United Nations Millennium Declaration. This declaration is a call to end extreme poverty, hunger, disease, and preventable mortality globally. Sadly many people in the United States and other developed nations may not even know about this initiative. One of the UN's goals is to reduce child mortality through better maternal and neonatal care. Programs such as Helping Babies Breathe (HBB) have been developed to assist in training health care professionals to improve maternal and neonatal care globally. The HBB program focuses on neonatal resuscitation and is designed to provide education and training for traditional birth attendants (TBAs) in resource-

limited areas. In this article, I describe the issue of global neonatal death, review the HBB training program, and describe one experience of HBB training for a rural community in Haiti.

Millennium Developmental Goals

Two years after the 2000 United Nations Millennium Declaration, an action plan known as the Millennium Developmental Goals (MDGs) was formalized. These goals include eradicating diseases; providing adequate access to health care, food, and clean water; promoting gender equality; and ending human injustice (UN, 2012). Specifically, MDG #4 is to reduce child mortality. With 3.7 million neonates dying each year, to achieve MDG #4 we must address maternal care and neonatal deaths. This goal represents the growing attention being given globally to the unique needs of the neonate and efforts to give every infant a chance at life.

Global Neonatal Death

The problem of global neonatal death is overwhelming, and 98% of these deaths occur in the undeveloped world. Mortality rates may be underestimated, and international authorities acknowledge that in the most resource-limited

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Three million neonatal deaths and three million stillbirths occur globally every year.

areas, reliable record keeping, including recording of births, stillbirths, and neonatal death, is not managed properly (Nelson, Simonsen, Henry, Wilder, & Rose, 2011). In particular, the recording of stillbirths may be inaccurate as a portion of these infants may actually not be stillborn but live births with infants living very a short period of time (Nelson et al.). These infants may be hypoxic due to difficulty during the late stages of labor and birth, and their poor presentation may be mistaken as a stillbirth. Experts postulate that this cohort of stillbirths may represent depressed infants that would respond to resuscitative efforts from birth attendants trained in neonatal resuscitation (Nelson et al.). If millions of infants are documented as stillborns around the world, one must question how many of these infants would respond to the life-saving measure of neonatal resuscitation?

In 2010, Carlo et al. reported on newborn care training for trained midwives using the WHO's Essential Newborn Care Course (ENCC). The ENCC is designed to train health care professionals in the most important steps needed for newborn care. The ENCC focuses on proper neonatal care at birth with thorough drying, skin-to-skin contact with mother, cord clamping, early initiation of breastfeeding, and exclusive breastfeeding, eye care, and immunizations. The ENCC course also reviews positive pressure ventilation if an infant is not breathing properly after birth. Carlo and colleagues concluded that "additional in-depth training in neonatal resuscitation may reduce mortality rates further" (Carlo et al., 2010, p. e1064). Based on these findings, the American Academy of Pediatrics (AAP) created HBB, an evidence-based program to reduce global neonatal mortality (AAP, 2010).

Helping Babies Breathe

The HBB is an initiative of the AAP an many collaborative partners, including the WHO; National Institute of Child Health and Development (NICHD); United States Agency for International Development (USAID); Saving Newborn Lives, International Liaison Committee on Resuscitation (ILCOR); and other public and private globally minded organizations. This scientifically based, comprehensive educational training program was

developed to equip birth attendants with skills for neonatal resuscitation in resource-limited areas. The HBB program may be taught exclusively for neonatal resuscitation or in conjunction with other newborn education.

Most births in undeveloped nations are attended by one person, a TBA who cares to care for the mother and neonate. Many of these TBAs have no formal education or training and have learned their skills from elder TBAs. The HBB program emphasizes the presence of skilled attendants at every birth. These attendants provide an assessment of every infant, temperature support, stimulation to foster breathing, and assisted ventilation as needed within the first minute after birth (AAP, 2010). The HBB program trains the birth attendant to accurately assess an infant's status after birth by maintaining warmth, cutting the umbilical cord, assessing respiratory drive and stimulation, clearing the airway, and assisting with breathing if necessary. The TBA is taught that if the infant is not breathing effectively by one minute of age, then ventilation should be provided with an airway mask and bag and to continue to assess the infant's response to ventilation. The HBB program does not include cardiac support. The resuscitative efforts with airway clearance, warmth and stimulation, and bag mask ventilation should provide adequate stimulation for most depressed infants. If not, the infant likely needs cardiac support. If available, the TBA resources emergency care for more advanced cardiac life support or ceases intervention if the infant remains unresponsive to resuscitative efforts.

The HBB program uses various specialized educational tools to enhance the translation of learned material from classroom to clinical practice, including color-coded, culturally sensitive picture flipcharts, learner workbooks, and action plan posters. These tools provide visual practice guidelines for the TBA. The newborn simulation mannequin is easy to use, durable for various weather climates, realistic for effective training, and does not require electricity. The newborn mannequin simulates umbilical cord pulsation and cord clamping as well as bag mask ventilation with appropriate chest rise. All learners must demonstrate knowledge and new skills gained in a multiple choice evaluation and clinical scenarios. In addition to these materials, the HBB training kit includes two neonatal airway masks, a self-inflating bag for ventilation, and an aspirator for airway clearance that may be boiled before use.

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