

Helping Babies Breathe

Amanda Higginson, MD

November 9, 2016

Outline

- The problem
- A solution
- The evidence
- Hands-on

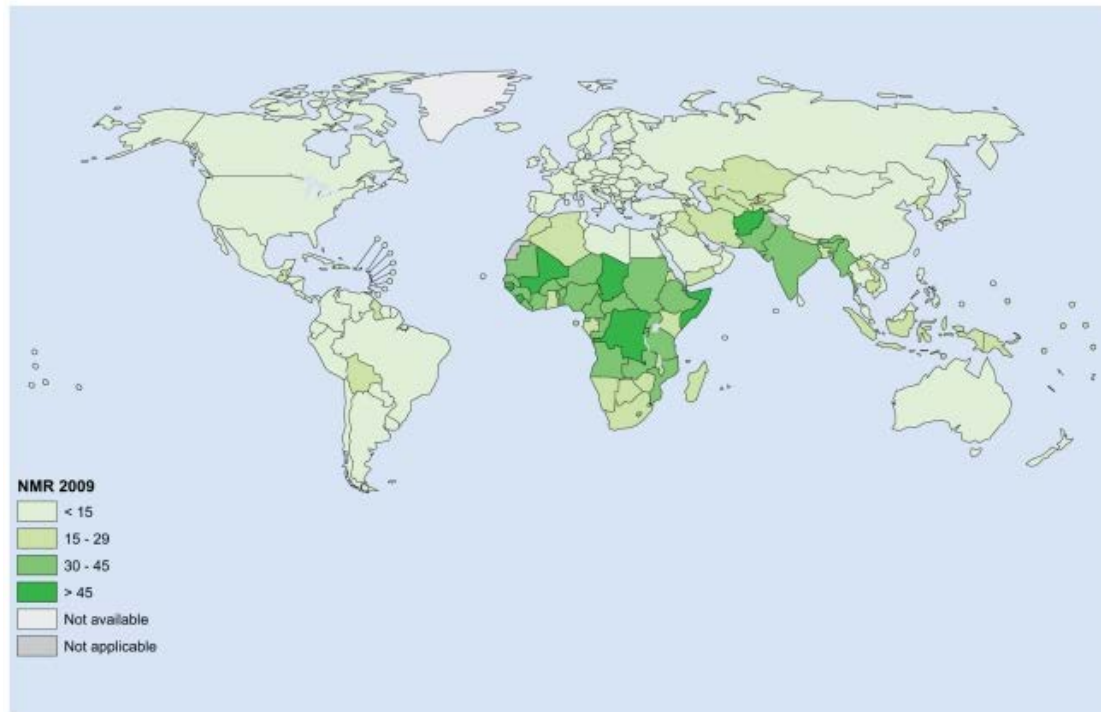
The majority of these slides are from Dr. Carl Bose's presentation at the 2015 AAP NCE

Global Neonatal Health

- 3.8 neonatal deaths (3.2 million stillbirths)
- ~ 3x deaths due to HIV/AIDs and malaria combined
- > 400 neonatal deaths each hour

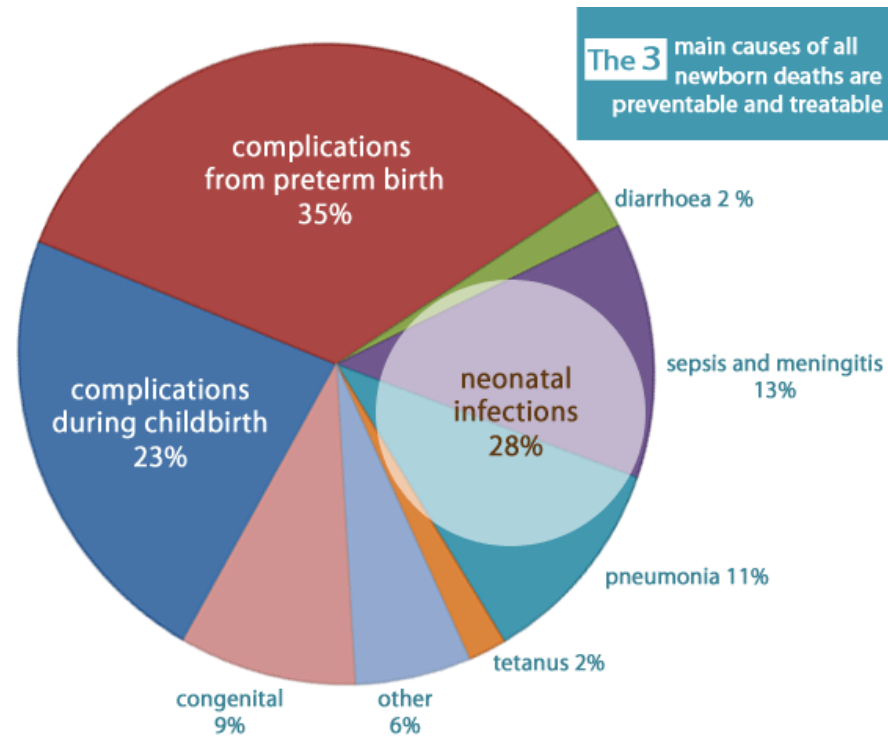
Most of these deaths are preventable!

Where do most neonatal deaths occur?



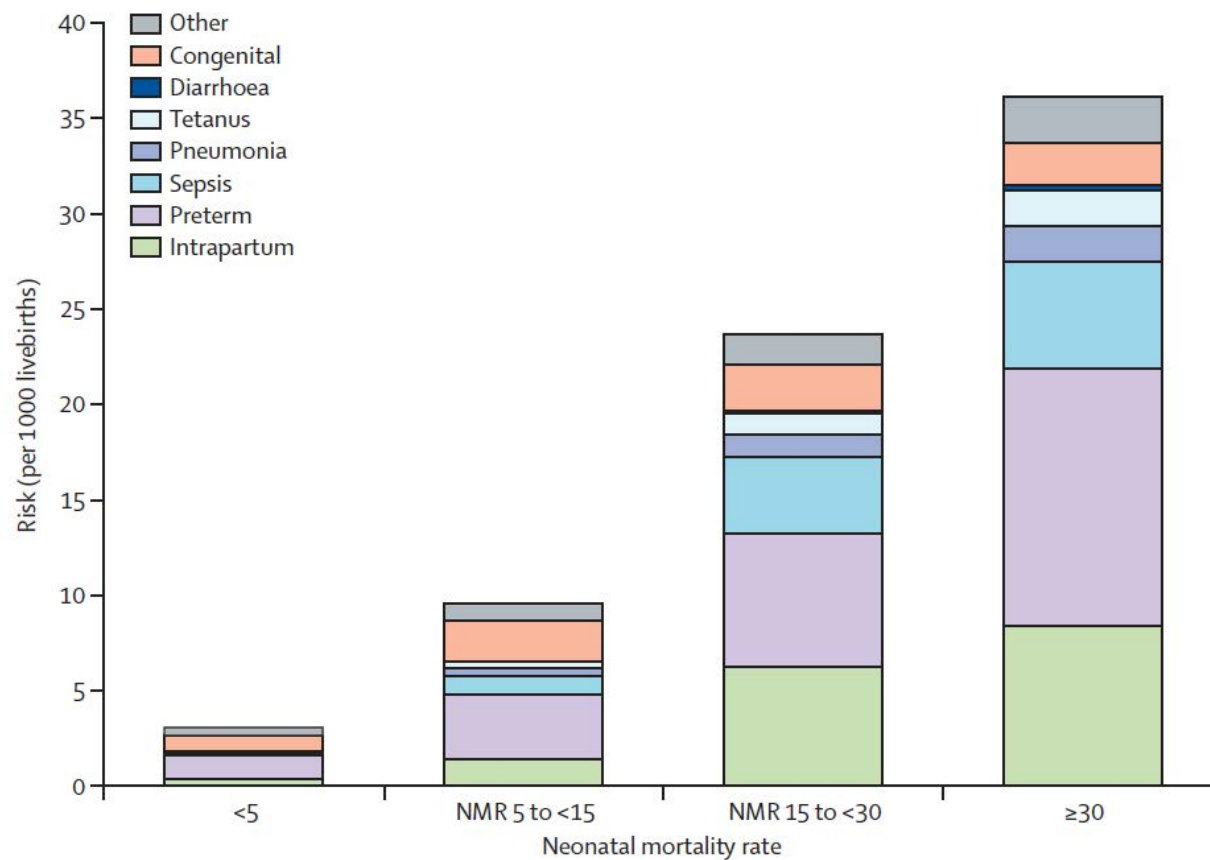
Oestergaard et al. PLoS Med 2011

What Causes Neonatal Death?

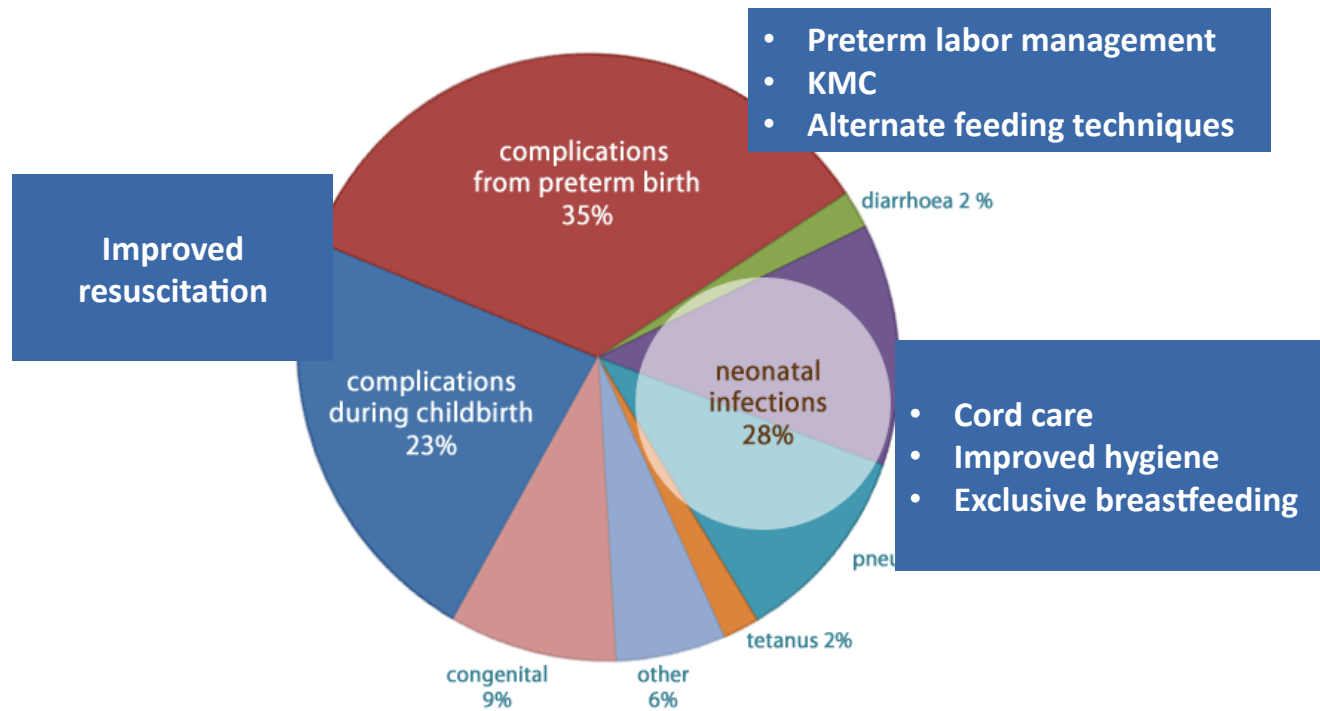


Source: Liu L, Johnson H, Cousens S et al. 2012. Global, regional and national causes of child mortality: an updated systematic analysis. Lancet 379(9832):2151-61.

What Causes Neonatal Death?



What can be done?

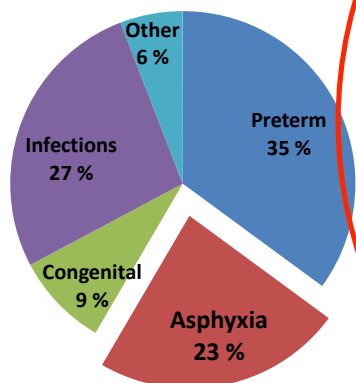


Source: Liu L, Johnson H, Cousens S et al. 2012. Global, regional and national causes of child mortality: an updated systematic analysis. Lancet 379(9832):2151-61.

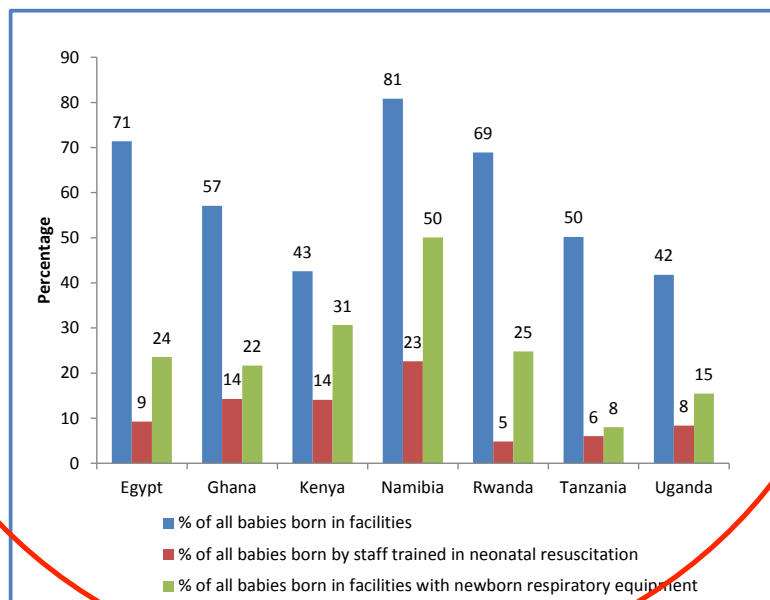
The challenge

Asphyxia: Major cause of newborn death

Total newborn deaths: 3.1 million



Access to newborn resuscitation is severely limited





Helping Babies Survive

Helping Babies Breathe®

A Global Public-Private Alliance



USAID
FROM THE AMERICAN PEOPLE



NIH Eunice Kennedy Shriver National Institute
of Child Health and Human Development



Save the Children

American Academy
of Pediatrics



DEDICATED TO THE HEALTH OF ALL CHILDREN™



Laerdal
helping save lives



Johnson & Johnson



Center for Global Health
and Economic Development
EARTH INSTITUTE | COLUMBIA UNIVERSITY



International pediatric association
association internationale de pédiatrie
asociación internacional de pediatría

The Helping Babies Survive Programs: Educational Programs to Improve Neonatal Outcomes *2015 NRP® Current Issues Seminar*

Helping Babies Breathe Facilitator Flip Chart



 **Helping Babies Breathe** American Academy of Pediatrics
DEDICATED TO THE HEALTH OF ALL CHILDREN

Helping Babies Survive **Essential Care for Every Baby** Facilitator Flip Chart



 **Helping Babies Survive**
ESSENTIAL CARE FOR EVERY BABY

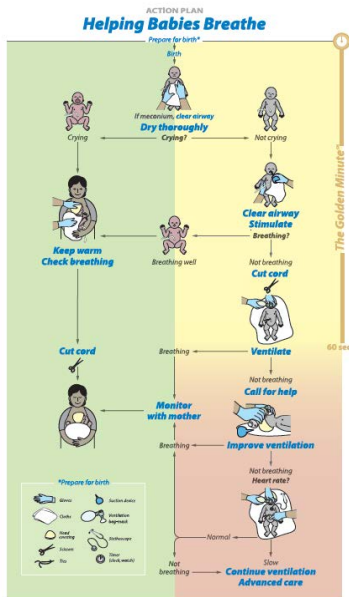
Helping Babies Survive **Essential Care for Small Babies** Facilitator Flip Chart



 **Helping Babies Survive**

EDUCATIONAL DESIGN

SIMPLE



HANDS ON



CO-OPERATIVE LEARNING



EDUCATIONAL DESIGN

PURPOSEFUL DEVELOPMENT OF EDUCATIONAL MODELS

Bag and Mask Ventilation



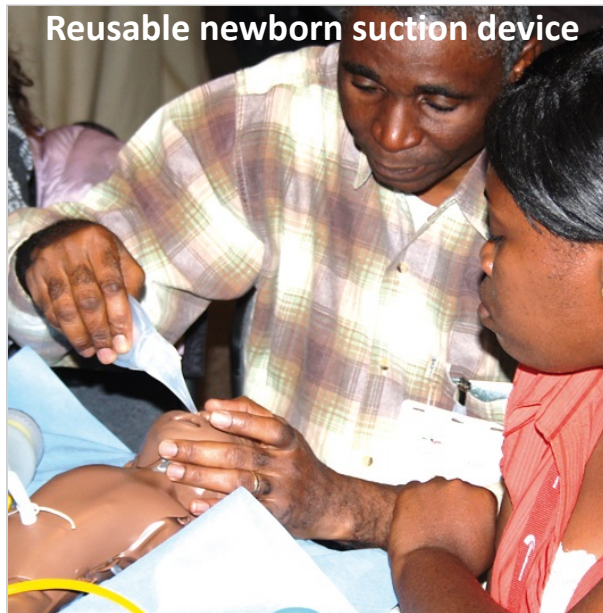
Expression breast milk



Nasogastric tube feeding



Spurs new medical device innovations



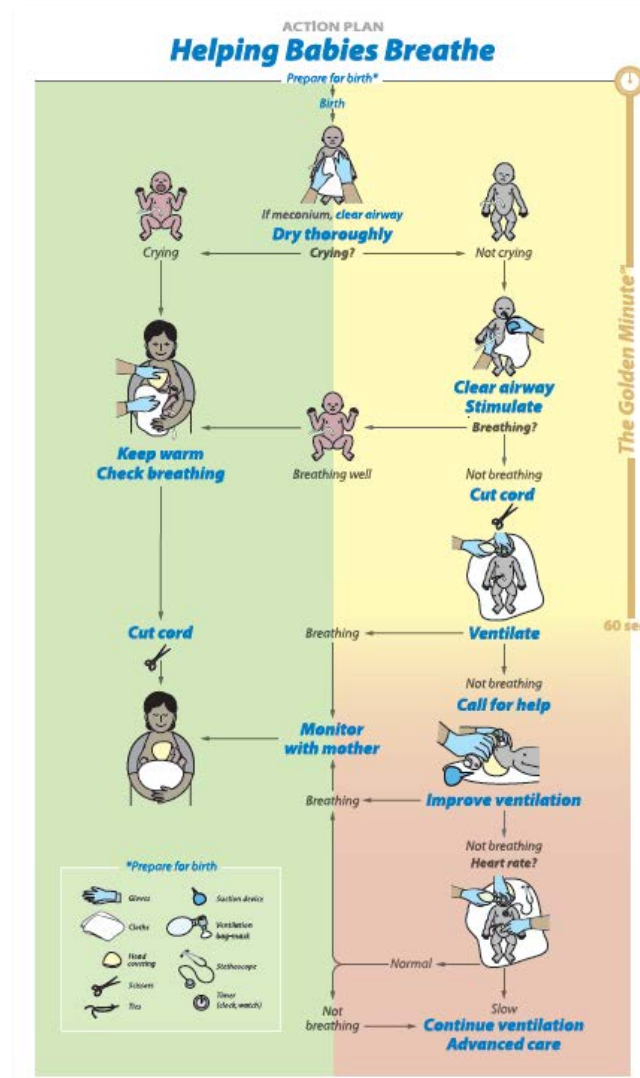
- Openable for cleaning
- Boilable for disinfection
- Reusable 100s of times
- Highly affordable (\$ 3)



- Better mask seal
- Fewer parts
- Easier to clean
- Lower cost

Helping Babies Breathe (HBB)

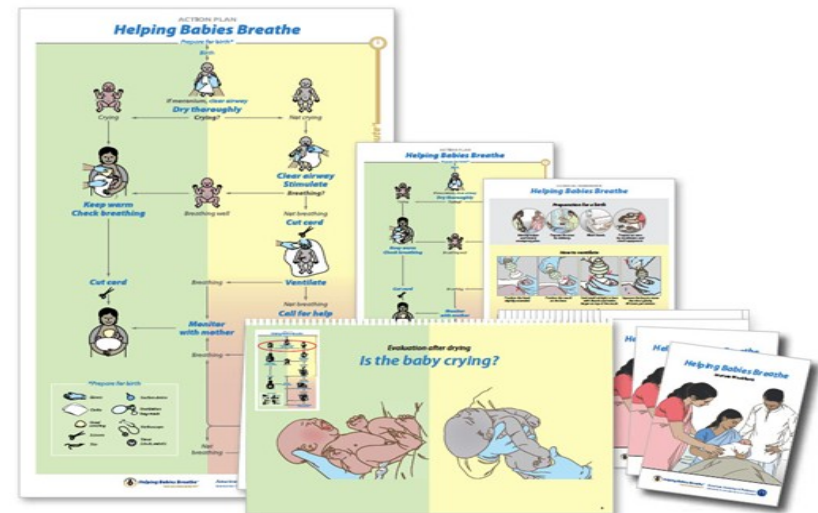
Action Plan



Helping Babies Breathe Materials



- Neonatal Simulator
- Bag and Mask
- Suction Device



- Action Plan
- Facilitator Flip Chart
- Learner Workbook

Results from the Field: Tanzania

Newborn I

Georgina
Karim M



WHAT THIS STUDY ADDS: The Helping Babies Breathe program was implemented in 8 hospitals in Tanzania in 2009. It has been associated with a sustained 47% reduction in early neonatal mortality within 24 hours and a 24% reduction in fresh stillbirths after 2 years.

ng Babies

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gia, Hege

DOI: 10.1542/peds.2012-1795

Results from the Field: Nepal

Reducing Perinatal Mortality in Nepal Using Helping Babies Breathe

Ashish KC, MBBS, MHCM, PhD,^{a,b} Johan Wrammert, MD,^a Robert B. Clark, MD, MPH,^c Uwe Ewald, MD, PhD,^a Ravi Vitrakoti, MSc,^d Pushpa Chaudhary, MBBS, MD,^d Asha Pun, MBBS, MPH,^a Hendrikus Raaijmakers, MD, MPH,^a Mats Målqvist, MD, PhD^a



Pediatrics. 2016; 137(6):e20150117

Lots of ongoing research

All Scientific Articles

Evaluation of Helping Babies Breathe Quality Improvement Cycle (HBB-QIC) on retention of neonatal resuscitation skills six months after training in Nepal

Ashish KC, Johan Wrammert, Viktoria Nelin, Robert Clark, Uwe Ewald, Stefan Swartling Peterson, Mats Målvist
Uppsala University Publications, November 2015

Each year 700,000 infants die due to intrapartum-related complications. Helping Babies Breathe (HBB) uses an algorithm to increase knowledge and improve skills on neonatal resuscitation. [READ MORE](#)

Educational Outcomes of Helping Babies Breathe Training at a Community Hospital in Honduras

Teresa Seto, Meredith Tabangin, Srirama Josyula, Kathryn K. Taylor, Juan Carlos Vasquez, Beena D. Kamath-Rayne
Perspect Med Educ, Oct 2015, 4(5): 225-32; doi: 10.1007/s40037-015-0214-8

Helping Babies Breathe is an evidence-based curriculum designed to teach basic neonatal resuscitation in low-resource countries. The purpose of this study was to evaluate the acquisition of knowledge and skills following this training and correlation of learner characteristics to performance in a Spanish-speaking setting. [READ MORE](#)

Cost-Effectiveness of the "Helping Babies Breathe" Program in a Missionary Hospital in Rural Tanzania

Corinna Vossius, Editha Lotto, Sara Lyanga, Estomih Mduma, Georgina Msemo, Jeffrey Perlman, Hege L. Ersdal
PLoS ONE, July 2014, 9(7): e102080; doi: 10.1371/journal.pone.0102080

The Helping Babies Breathe™ (HBB) program is an evidence-based curriculum in basic neonatal care and resuscitation, utilizing simulation-based training to educate large numbers of birth attendants in low-resource countries. We analyzed its cost-effectiveness at a faith-based Haydom Lutheran Hospital (HLH) in rural Tanzania. [READ MORE](#)

Beyond Newborn Survival: The Global Burden of Disease Due to Neonatal Morbidity

Joy E. Lawn, Parviz Minoo
Paediatric Research, Dec 2013, 74(S1), S1-S6; doi: 10.1038/pr.2013.202-208

This supplement includes six research articles presenting the first systematic estimates of impairment after neonatal morbidity, bringing together the work of almost 50 authors representing 35 institutions from 12 countries, from more than a thousand different data inputs. [READ MORE](#)

Resuscitation in Resource-Limited Settings

H.L. Ersdal, N. Singhal
Fetal & Neonatal Medicine, Dec 2013, 18(6), 373-378; doi: 10.1016/j.siny.2013.07.001

Intrapartum-related hypoxia leading to deaths and disabilities continues to be a global challenge, especially in resource-limited settings. Primary prevention during labour is likely to have a significant impact, but secondary prevention with focus on immediate basic stabilization at birth can effectively reduce a large proportion of these adverse outcomes as demonstrated in the resource-rich settings. [READ MORE](#)

Helping Babies Breathe' Training in Sub-Saharan Africa: Educational Impact and Learner Impressions

R Hoban, S Bucher, I Neuman, M Chen, N Tesfaye, JM Spector
Journal of Tropical Pediatrics, Jun 2013, 59(3), 180-6; doi: 10.1093/tropej/fms077

Poor resuscitation contributes significantly to neonatal deaths globally. Helping Babies Breathe (HBB) is a new evidence-based neonatal resuscitation curriculum for low-resource settings. We sought to characterize knowledge changes after national-level HBB training in Ethiopia, factors correlated with successful training, resuscitation skills and trainees' perceptions. [READ MORE](#)

Stillbirth and Newborn Mortality in India After Helping Babies Breathe Training

Shivaprasad S. Goudar, Manjunath S. Somannavar, Robert Clark, Jocelyn M. Lockyer, Amit P. Revankar, Herta M. Fidler, Nancy L. Sloan, Susan Niernmeyer, William J. Keenan, Nalini Singhal
Pediatrics, Feb 2013, 131(2), e344-e352; doi: 10.1542/peds.2012-2112

This study evaluated the effectiveness of Helping Babies Breathe (HBB) newborn care and resuscitation training for birth attendants in reducing stillbirth (SB), and predischARGE and neonatal mortality (NMR). India contributes to a large proportion of the worlds annual 3.1 million neonatal deaths and 2.6 million SBs. [READ MORE](#)

Addressing High Infant Mortality in the Developing World: A Glimmer of Hope

John Kattwinkel
Pediatrics, Feb 2013, 131(2); doi: 10.1542/peds.2012-3171

Extraordinary progress has been made in reducing infant mortality in the developed world over the past 7 decades, with death rates during the first year of life falling by more than 90% since my own birth in 1941. However, infant mortality rates in the developing world are still nearly 10 times higher than in the United States. [READ MORE](#)

Appropriate Interventions to Reduce Perinatal Mortality and Morbidity in Low-Resourced Settings

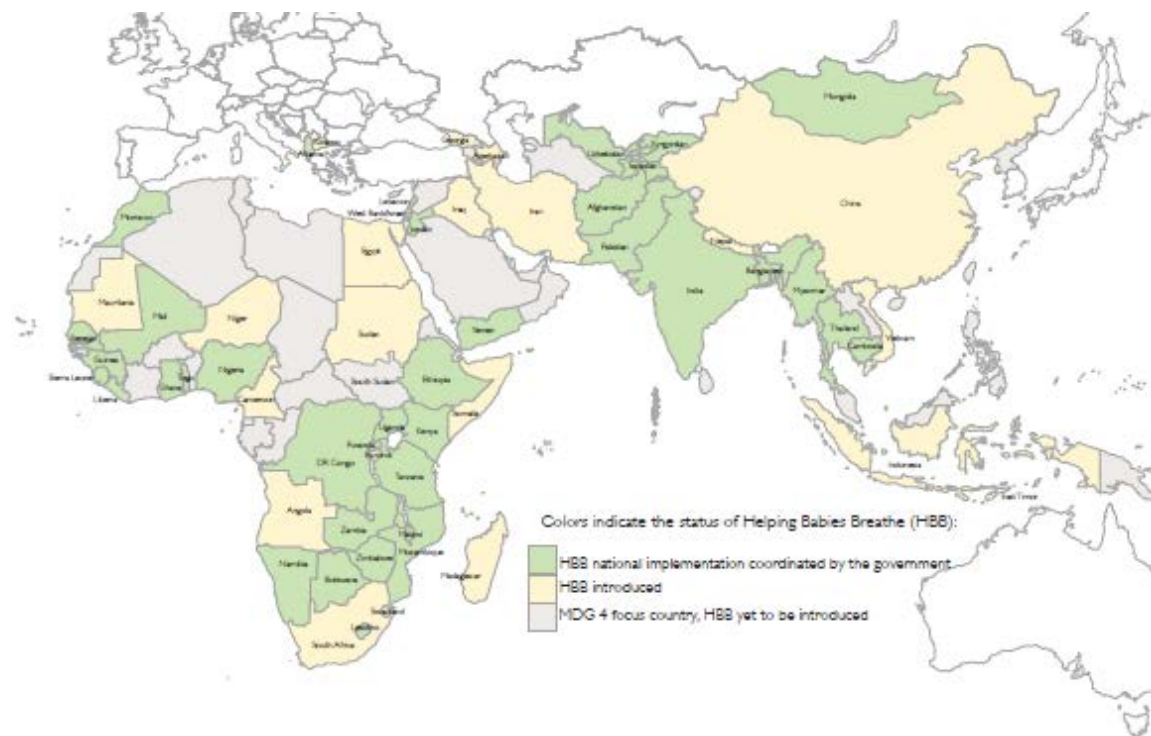
HL Ersdal
PhD Thesis, Stavanger University Hospital, 2012

To meet the Millennium Developmental Goal (MDG) 4, a significant reduction in early neonatal mortality is required. It is necessary to definite appropriate and effective low-tech interventions that can be implemented with high coverage and low costs worldwide. [READ MORE](#)

Implementing a simplified neonatal resuscitation protocol-helping babies breathe at birth (HBB) - at a tertiary level hospital in Nepal for an increased perinatal survival

Ashish KC, Mats Målvist, Johan Wrammert, Sheela Verma, Dhan Raj Aryal, Robert Clark, Naresh P KC, Ravi Vitrakoti, Kedar Baral, Uwe Ewald
BMC Pediatrics, Oct 2012, 12(1), 1; doi: 10.1186/1471-2431-12-159

Reducing neonatal death has been an emerging challenge in low and middle income countries in the past decade. The development of the low cost interventions and their effective delivery are needed to reduce deaths from birth asphyxia. [READ MORE](#)



Colors indicate the status of Helping Babies Breathe (HBB):

- Green: HBB national implementation coordinated by the government
- Yellow: HBB introduced
- Grey: MDG 4 focus country, HBB yet to be introduced

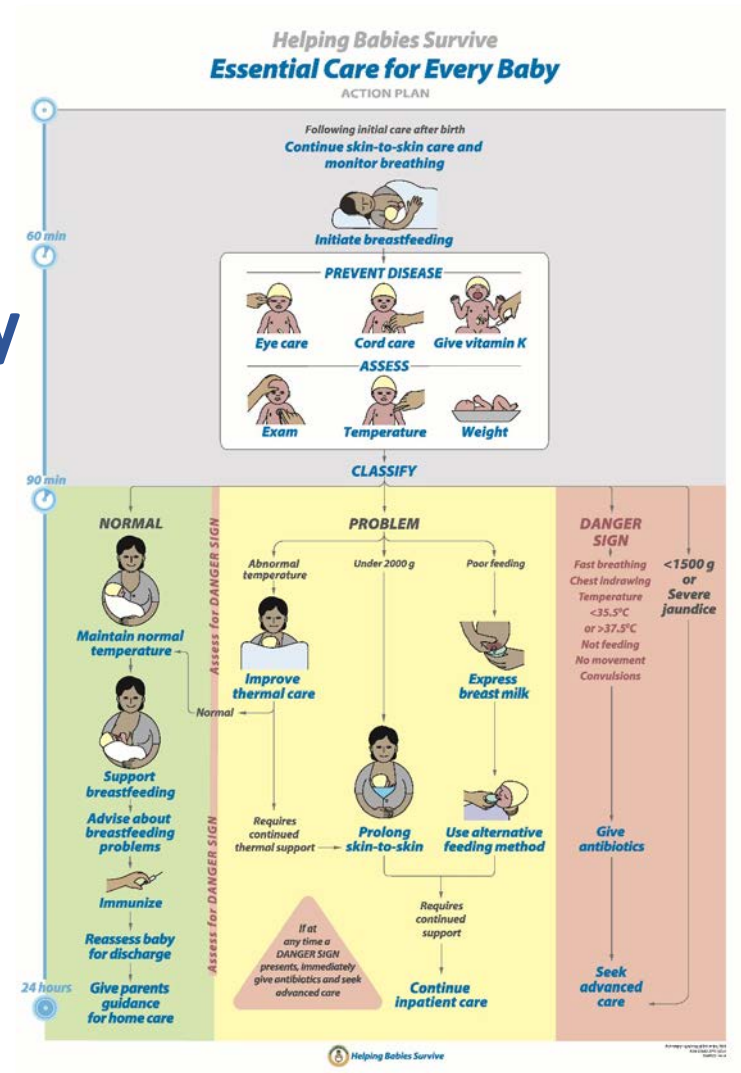
A Global Public-Private Alliance



Helping Babies Survive

Essential Care for Every Baby (ECEB)

Action Plan



Essential Care for Every Baby Materials



- Action Plan
- Facilitator Flipchart
- Provider Guide
- Parent Guide

Parent Guide

Danger Signs

← DANGER SIGNS

ESSENTIAL CARE →

Seek health care immediately!

**Yellow palms or
soles of feet**

Help your baby survive

NOTES

Baby's birth weight: grams

Date and location of next
follow-up appointment:/...../.....

Clinic:

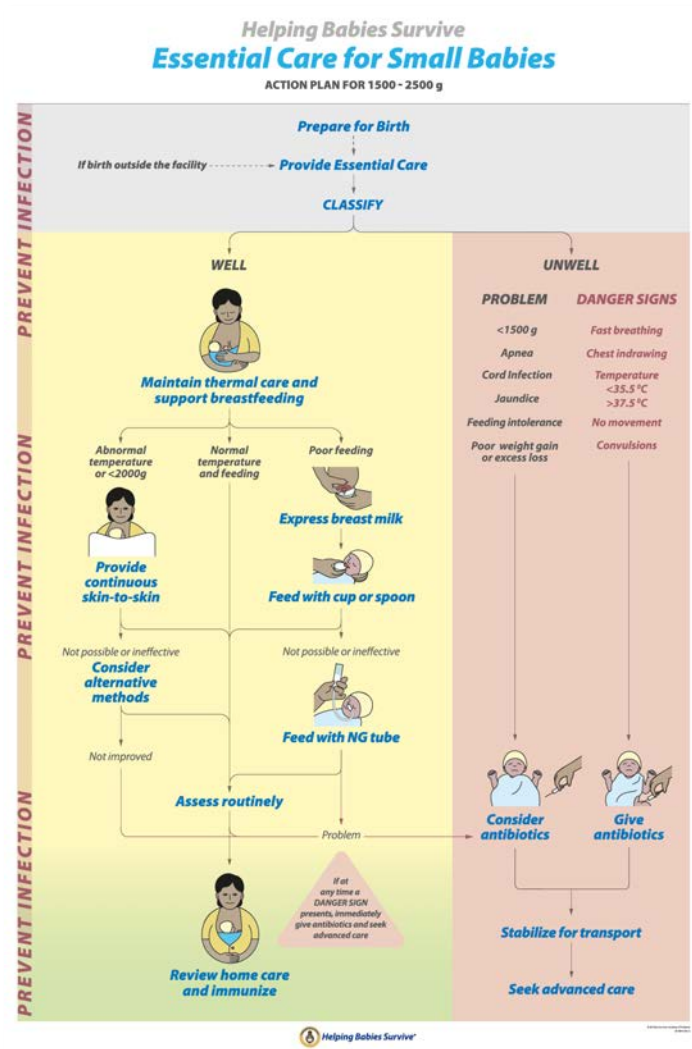
Health worker contact:

Other notes:

OBSERVATIONS AND ADVICE

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10-07923 Rev A

Helping Babies Survive

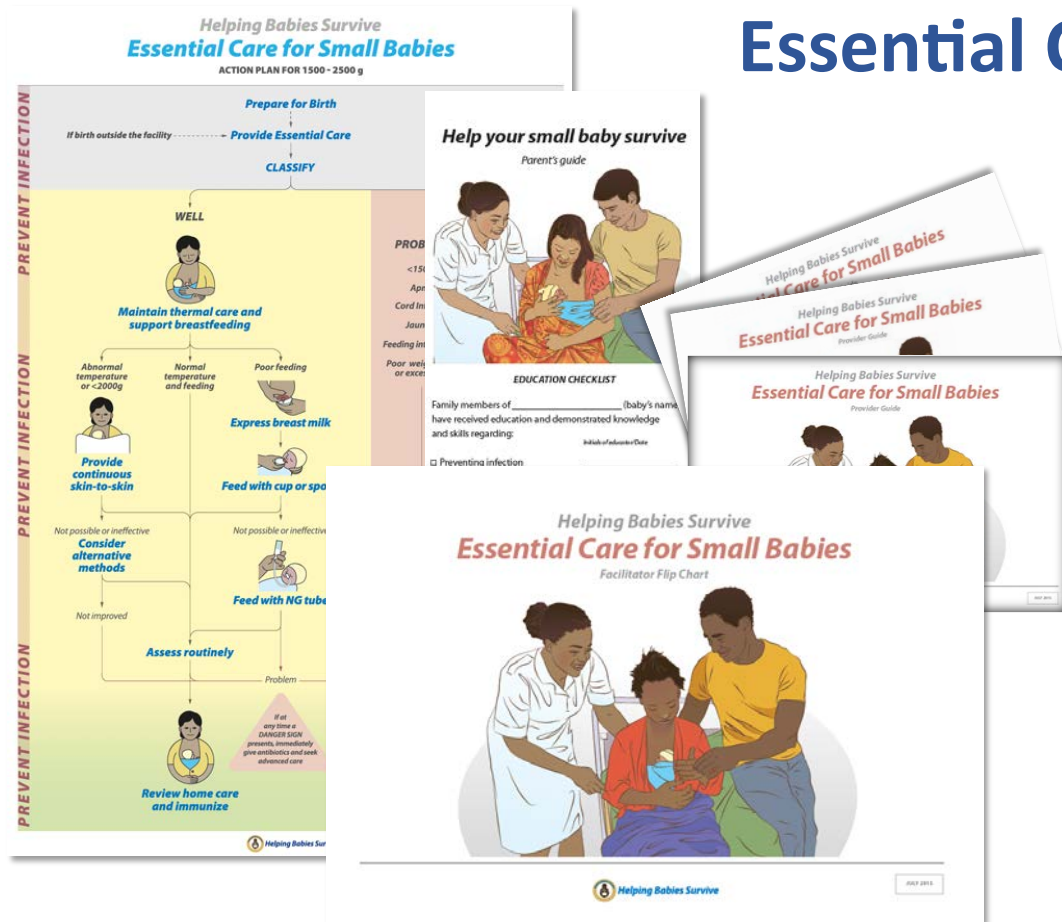


Essential Care for Small Babies (ECSB)

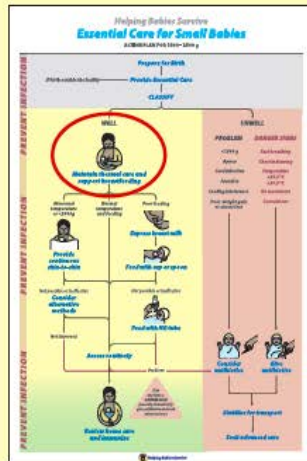
Action Plan

Essential Care for Small Babies

Materials



- Action Plan
- Facilitator Flipchart
- Provider Guide
- Parent Guide



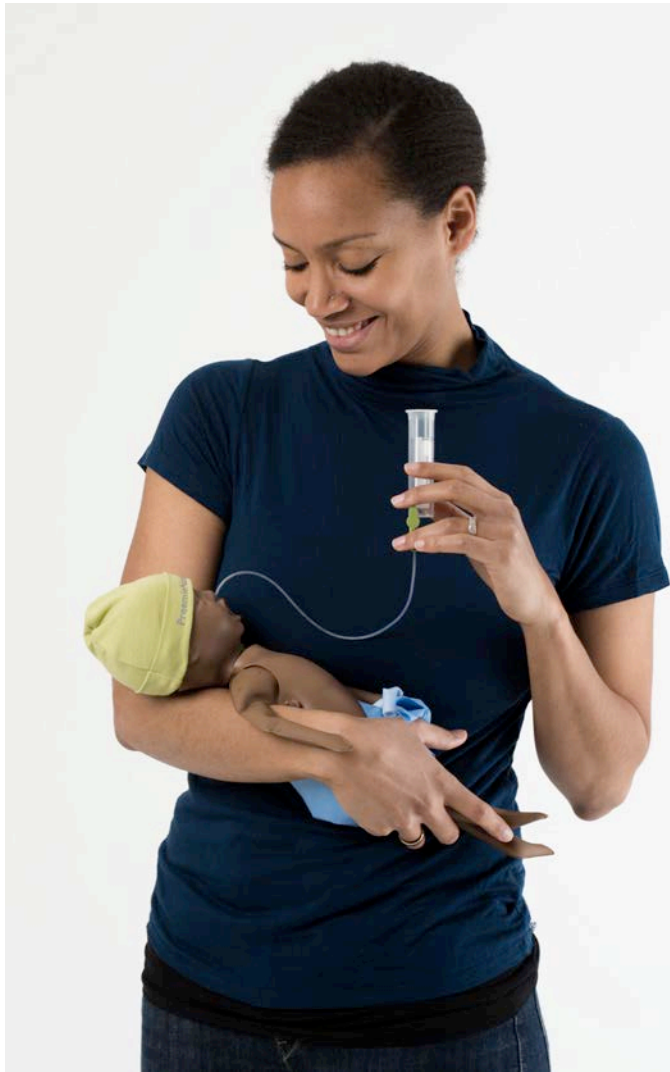
If a baby is small
Support breastfeeding



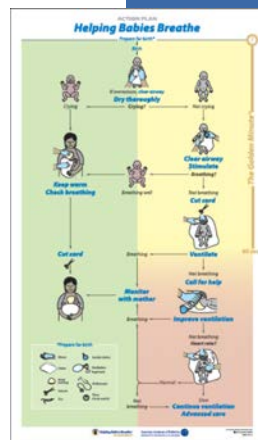
Expression of Breast Milk



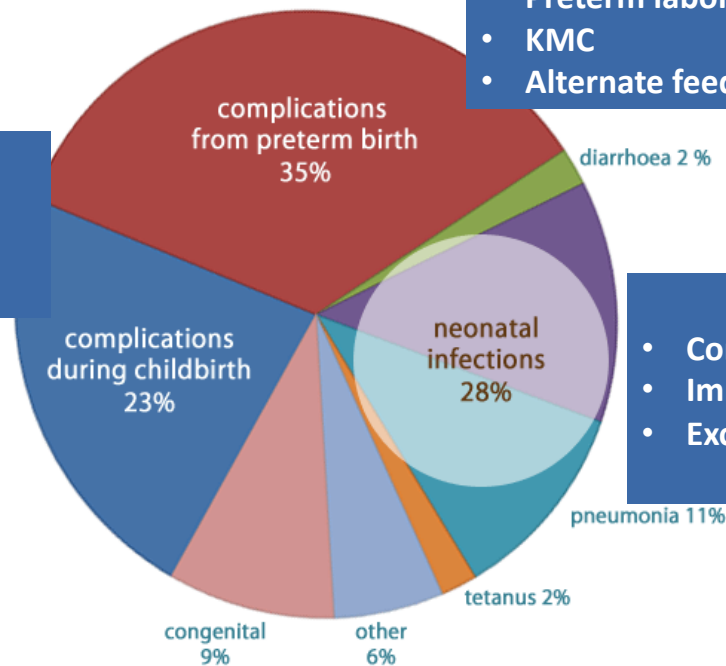
Nasogastric Tube Feeding



The Helping Babies Survive Programs

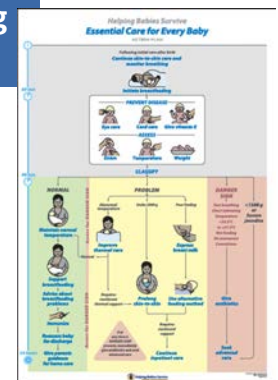
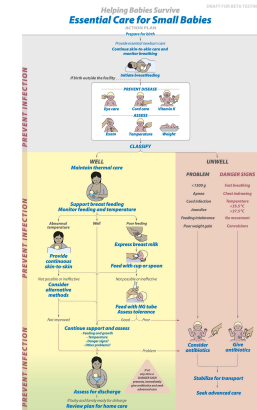


Improved resuscitation



- Preterm labor management
- KMC
- Alternate feeding techniques

- Cord care
- Improved hygiene
- Exclusive breastfeeding



Source: Liu L, Johnson H, Cousens S et al. 2012. Global, regional and national causes of child mortality: an updated systematic analysis. Lancet 379(9832):2151-61.

Sample Page from the Provider Guide

Review Key Knowledge

Breast milk is the best food for small babies. Small babies may not have the skills or strength to feed at the breast initially. Mothers attempting to breastfeed a small baby require extra support and encouragement.

Support the special needs of a small baby who is attempting breastfeeding with

- Nipple stimulation prior to feeding
- Added attention to positioning and supporting head
- Early licking and practice at breast.
- Manual expression of breast milk into baby's mouth
- Awakening baby when changing to opposite breast

Evaluate the baby's effectiveness at breastfeeding

- Wakes and shows feeding readiness cues.
- Latches, sucks steadily with pauses, and swallows audibly.

- Feeds without choking, turning blue or pale.
- Mother reports breast softening.

A baby who is adequately fed

- Breastfeeds for at least 10 minutes per side.
- Sleeps comfortably between feedings every 2-3 hours.
- Has 6-8 wet diapers a day.
- Loses no more than 10% of birth weight.

If a baby cannot breastfeed effectively, support mother's breast milk production and use an alternative feeding method as needed.

- Teach mother to express breast milk every 3 hours (page 29).
- Encourage time at breast during skin-to-skin care and reassess readiness to breastfeed daily.
- Ensure mother has adequate nutrition, increased fluid intake and care for medical problems.

Review Key Skills

Ask participants to work in pairs or groups of 3 to play the roles of the mother and the birth attendant. Enact the following scenario:

A 2000 gram baby is 3 days old and breastfeeding. Weight today is 1700 grams.

- Evaluate the baby's effectiveness at breastfeeding.
- Determine if the baby is breastfeeding adequately.

Change roles and repeat practice.

Monitor Key Indicators

What to monitor:

- How often do mothers receive counseling on breastfeeding?
- Do all mothers of small babies breastfeed or provide some breast milk?

Quality Improvement Strategies

To improve care in your facility, discuss:

- Who helps mothers and babies with breastfeeding in your facility?
- What methods help small babies breastfeed effectively?

Meet Neo Natalie





Helping Babies Breathe, ROC









***Help babies
breathe if they do
not cry at birth.
Provide essential
care to all
babies.***

***Keep small
babies well and
help them grow.***

**THANK
YOU!**