

Helping Babies Breathe:

Case study of a successfully translated development solution to address intrapartum asphyxia

Presented by:

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Round 1 Case Study Workshop – Successful translation of MCH health systems

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Kampala, Uganda

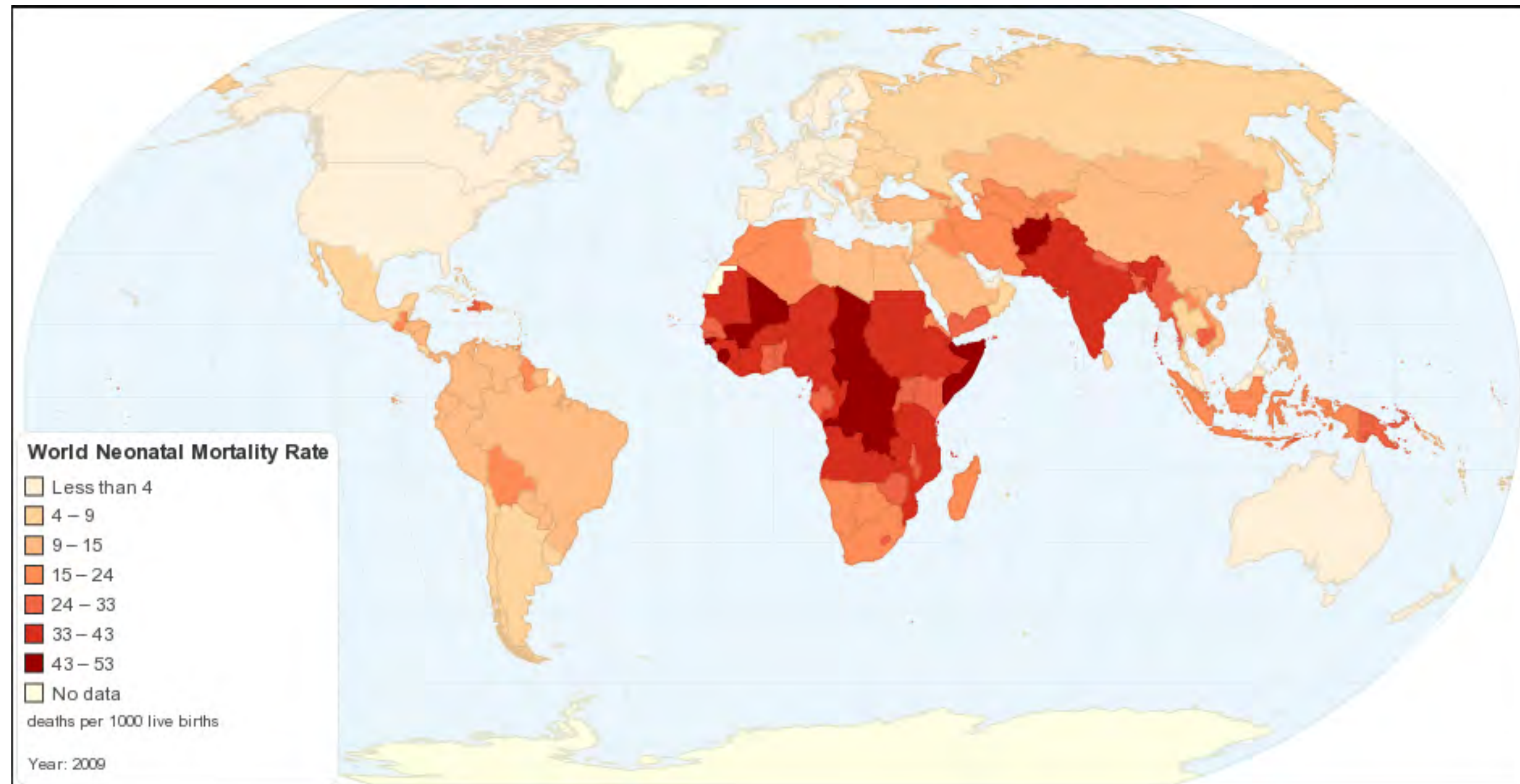


High Rates of Maternal & Neonatal Mortality

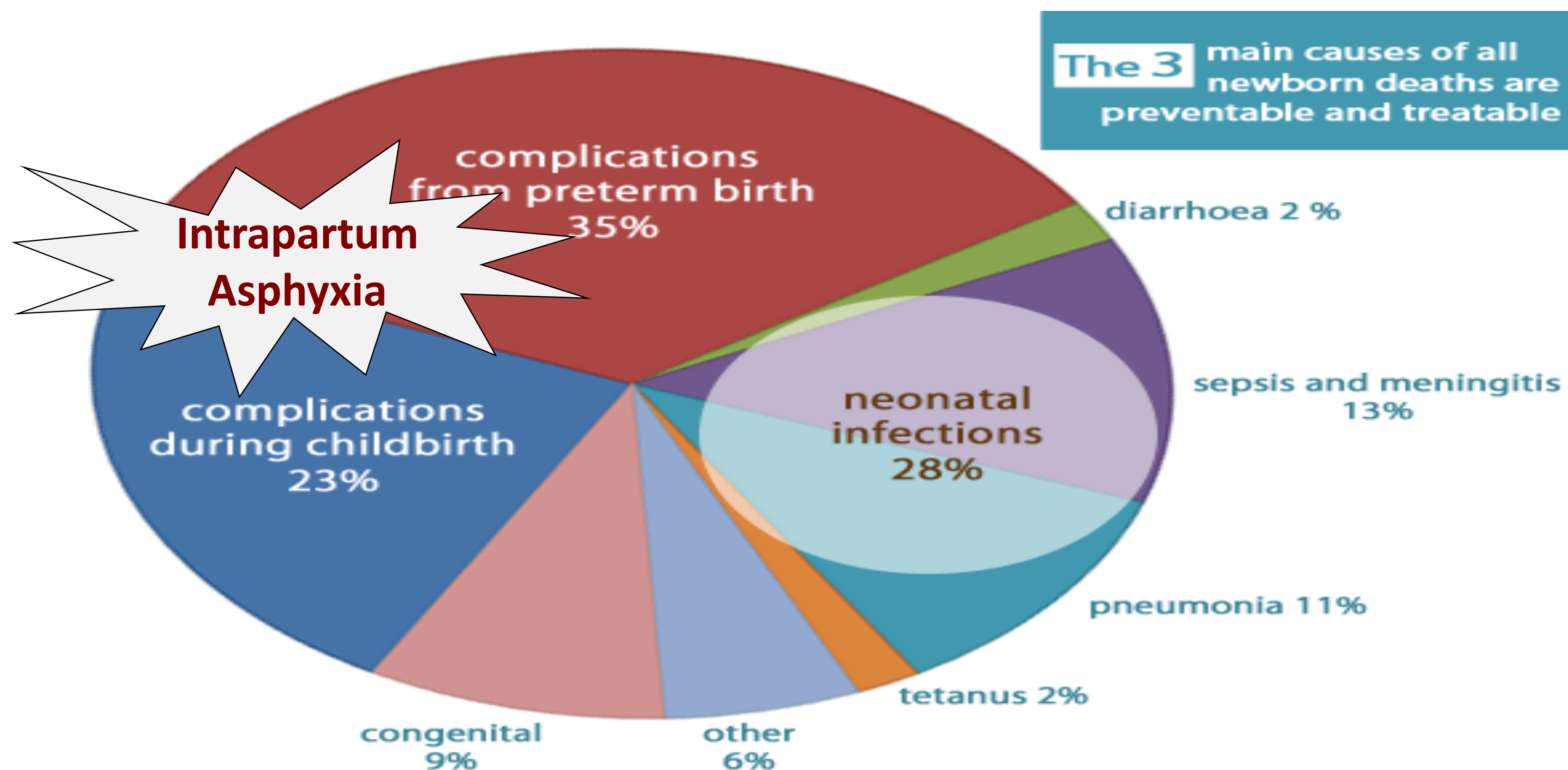
- Around 303,000 women die each year from pregnancy and childbirth complications (830 day)¹
- "Women make up 70 percent of Africa's labor force and produce 80 percent of food; therefore, **maternal deaths and disabilities are a direct cost to the economy**," *Dr. Nomonde Xundu, South Africa.*
- **2.5 million stillbirths** and **2.6 million neonatal deaths each year** (7,000 newborns a day).
- Globally, **46%** of all Under-5 years mortality occurs during the first month of life.

¹WHO: <https://www.who.int/news-room/fact-sheets/detail/maternal-mortality>

- Low- and Middle-income countries bear a **disproportionate burden** for maternal & neonatal mortality.
- In some settings, neonatal mortality (death during the first 28 days postnatal) accounts for **up to 60% of under-5 years mortality** (UNICEF²)



²<https://data.unicef.org/topic/child-survival/neonatal-mortality/#>



Leading Direct Causes of Neonatal Mortality

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 problem of intrapartum asphyxia

- Each year, there are about **10 million babies** who suffer from breathing problems at or around the time of birth (intrapartum asphyxia).
- Intrapartum asphyxia is a **leading cause of newborn death**: almost 1 million babies a year die from this common birth complication. Survivors can suffer brain damage.
- Low/middle-income countries bear a disproportionate burden, **especially Sub-Saharan Africa and Asia**.
- Death and disability from intrapartum asphyxia are **preventable**.
- **Neonatal resuscitation** programs dramatically **reduce rates of asphyxia-related mortality and morbidity**.

Evidence for Neonatal Resuscitation

Pediatrics
April 2001, VOLUME 107 / ISSUE 4
Article

Effect of a Statewide Neonatal Resuscitation Training Program on Apgar Scores Among High-Risk Neonates in Illinois

Daksha Patel, Zdzislaw H. Piotrowski, Merwyn R. Nelson, Robert Sabich

Brain Dev. 2008 Jan;30(1):43-6. Epub 2007 Jun 18.

The impact of Neonatal Resuscitation Program courses on mortality and morbidity of newborn infants with perinatal asphyxia.

Duran R¹, Aladağ N, Vatansever U, Süt N, Acunaş B.

Int J Gynaecol Obstet. 2009 Oct;107 Suppl 1:S47-62, S63-4. doi: 10.1016/j.ijgo.2009.07.013.

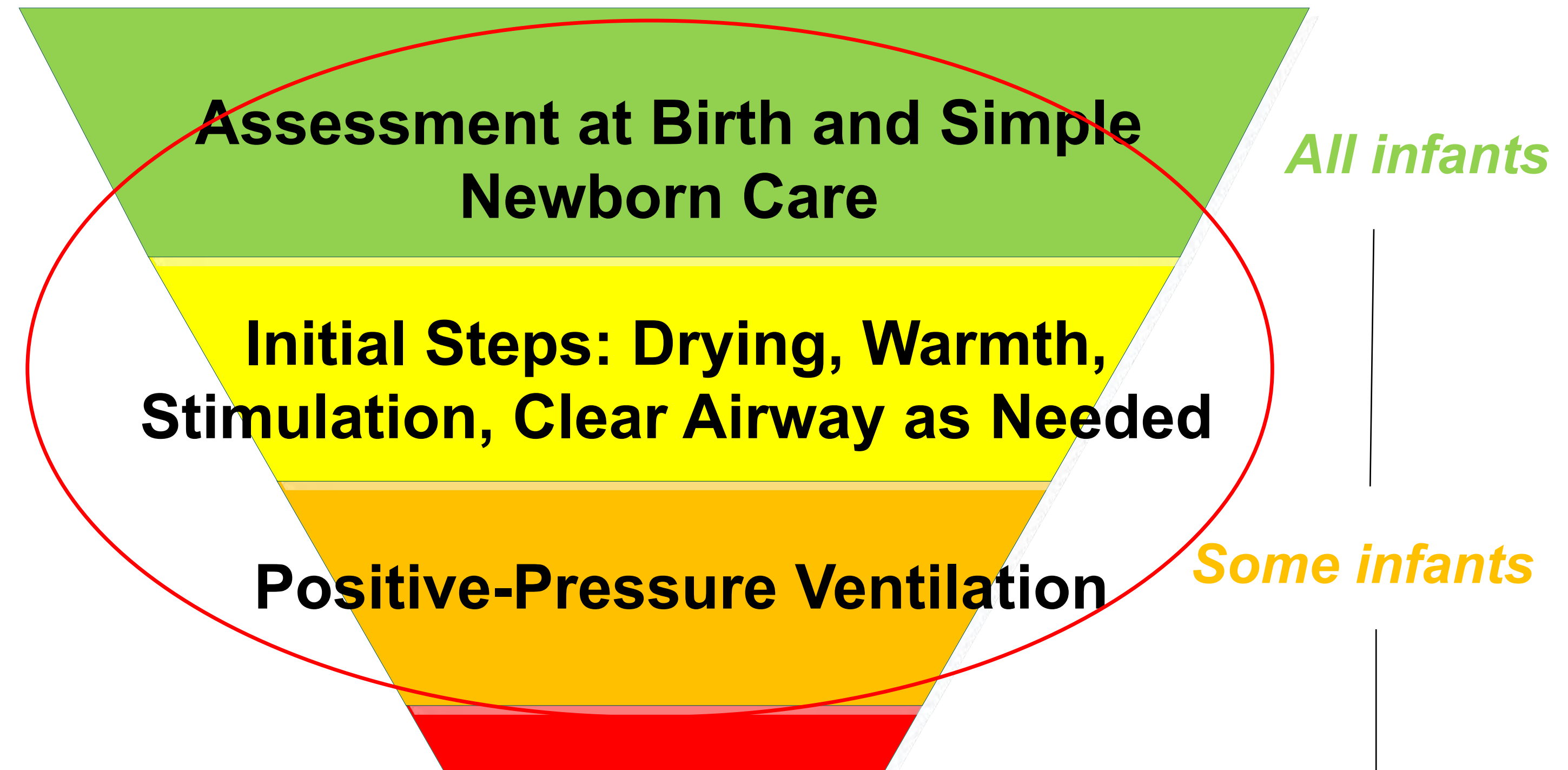
Neonatal resuscitation in low-resource settings: what, who, and how to overcome challenges to scale up?

Wall SN¹, Lee AC, Niermeyer S, English M, Keenan WJ, Carlo W, Bhutta ZA, Bang A, Narayanan I, Ariawan I, Lawn JE.



Reducing Intrapartum-Related Neonatal Deaths in Low- and Middle-Income Countries—What Works?

Stephen N. Wall MD, MS, MSW^{*}, Anne C.C. Lee MD, MPH^{†,‡}, Waldemar Carlo MD[§], Robert Goldenberg MD[¶], Susan Niermeyer MD, MPH^{**}, Gary L. Darmstadt MD, MS^{††} & William Keenan MD^{‡‡}, Zulfiqar A. Bhutta MBBS, PhD^{§§}, Jeffrey Perlman MBChB^{¶¶}, Joy E. Lawn MBBS, MRCP, MPH, PhD^{*}



By doing the first 3 steps well, we can prevent **99%** of asphyxia-related death and disability

Neonatal Resuscitation: The global context 2006 - 2009

How to translate complex programs such as Neonatal Resuscitation Program, typically taught and implemented in high-tech settings, using very expensive simulation training equipment, into curricula that would be feasible, acceptable, affordable, safe, and effective in low-resource settings?

- American Academy of Pediatrics formed the *Helping Babies Breathe* Global Implementation Task Force.
- Key partners included – USAID; Save the Children; National Institute of Child Health and Human Development (NICHD); Laerdal Medical AS, in close consultation with WHO.
- Four dedicated neonatologists (Susan Niermeyer; Nalini Singhal; George Little; William Keenan) lead development of a curriculum, called *Helping Babies Breathe*.
- Content aligned with International Liaison Committee on Resuscitation (ILCOR) guidelines.
- Underwent DELPHI review among key stakeholders.
- 2008 – AAP released RFA seeking University partners for global sites to perform educational evaluation.

Helping Babies Breathe Global Educational Evaluation: 2009



- Feasible and acceptable.
- Low-cost simulation equipment & paired learning effective within LMIC context.
- HBB improved feelings of confidence & self-efficacy among health workers.
- Disconnect between knowledge and skills (bag-and-mask ventilation).



***Helping Babies Breathe* Global Launch & Pilot Test: 2010 - 2011**

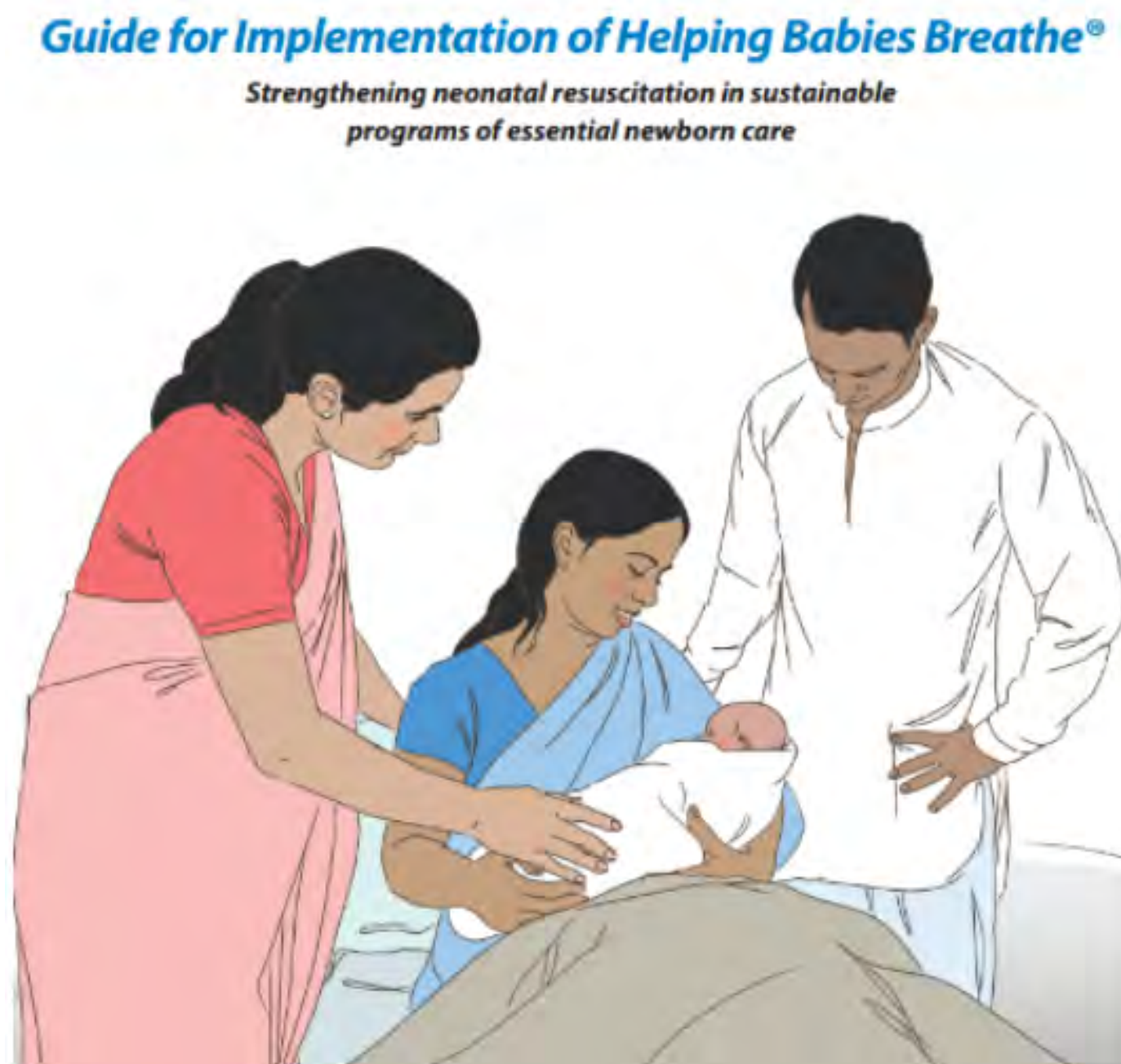
- Five countries: **Bangladesh, India, Kenya, Pakistan, Tanzania.**
- Training of Trainer (TOT) implementation cascade: Master Trainers; Facilitators; Providers.
- Kenya: 1st recorded incident of HBB-trained provider to save baby.
- **HBB training resulted in significant decreases in rates of fresh stillbirth (27%; India) & early neonatal mortality (47%; Tanzania).**
- **Global Launch of HBB June 2010**
 - 100+ persons trained in Washington DC
 - US Congressional briefing
 - August 2010: Congress of International Pediatrics Association
 - Formation of the **HBB Global Development Alliance** (private-public partnership)



Mary Wekesa, RN, used lessons learned from *Helping Babies Breathe* to save **Baby Job** October 30, 2009 at Bokoli sub-district hospital, Kenya

***Helping Babies Breathe* has catalyzed translation in all domains**

American Academy of Pediatrics: Practices



Laerdal Global Health: Products

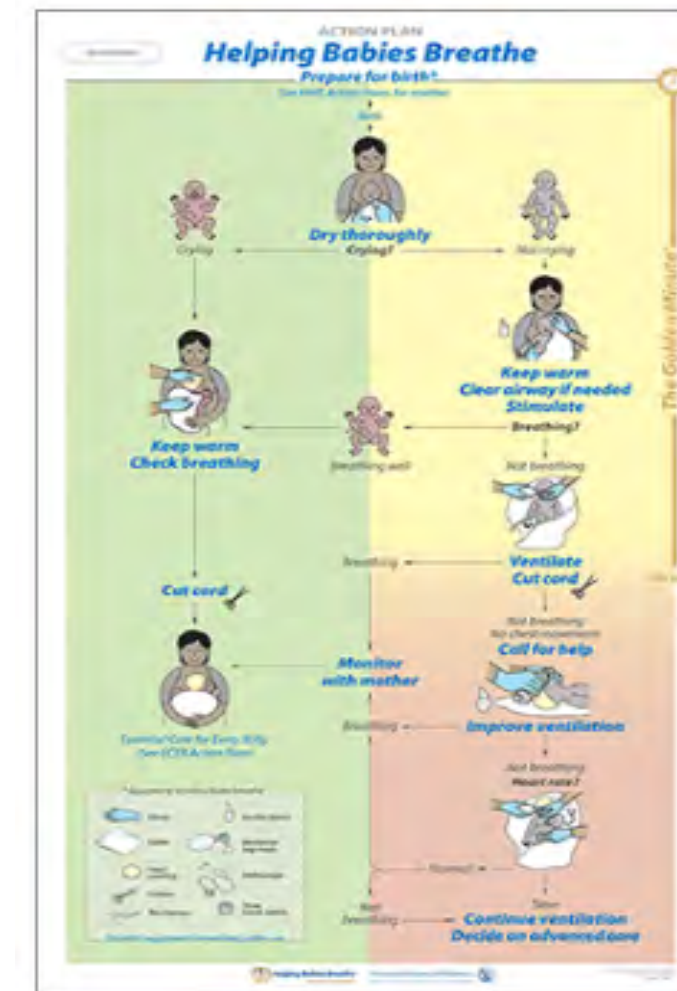


USAID: Partnerships & Programs



Translation to Global Practices

Lead HBB GDA partner: American Academy of Pediatrics



“The Golden Minute”

Simulation Training

Action Planning

Prepare for every birth

Knowledge

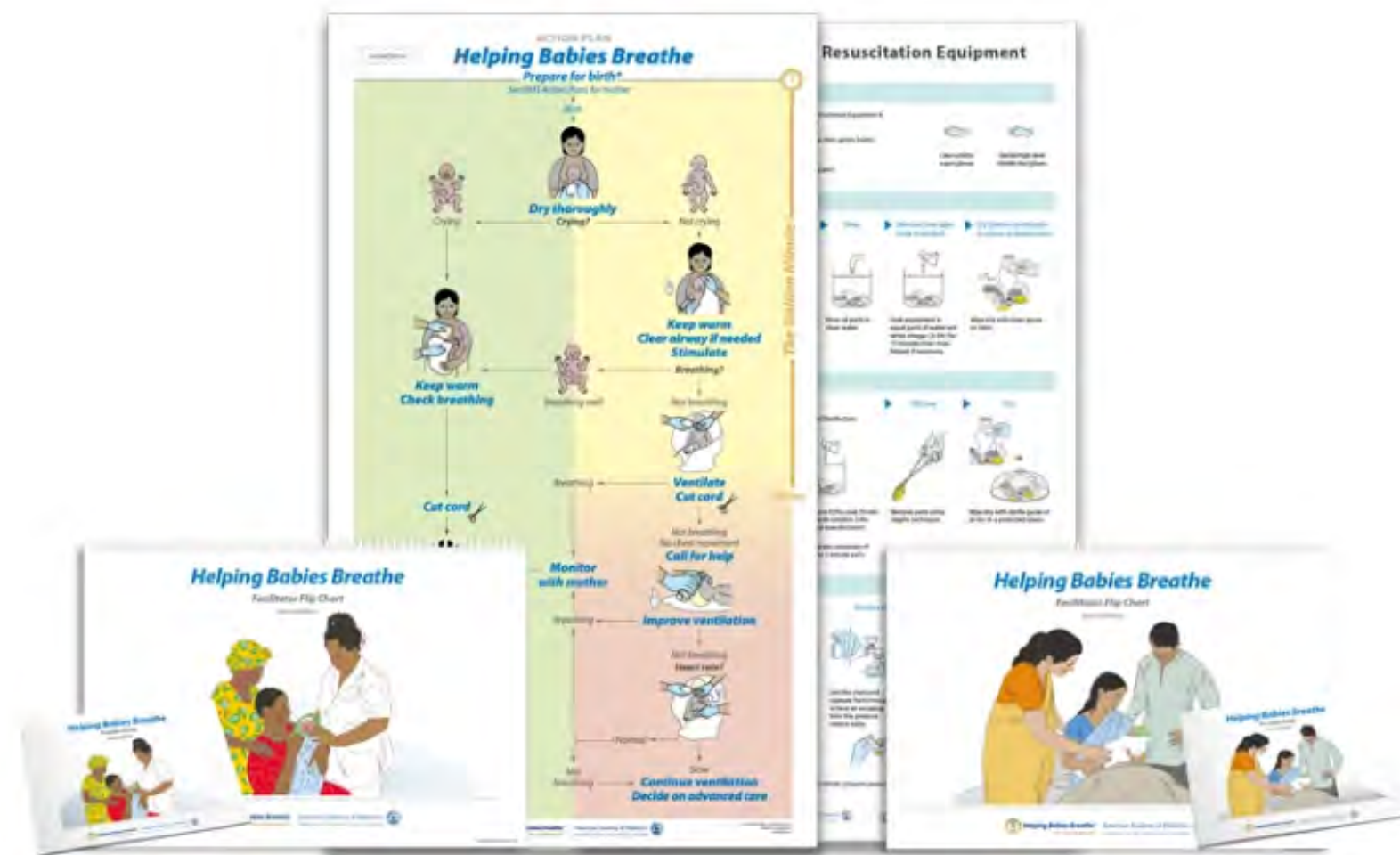
Skills

Competencies

Impact

Translation to Global Products

Lead HBB GDA partner: Laerdal Global Health



Educational Materials



**Low-cost simulation
equipment**



**Neonatal resuscitation
commodities**

Translation to Global Partnerships & Programs

Lead HBB GDA Partner: USAID

survive & thrive : member organizations



With USAID's Support

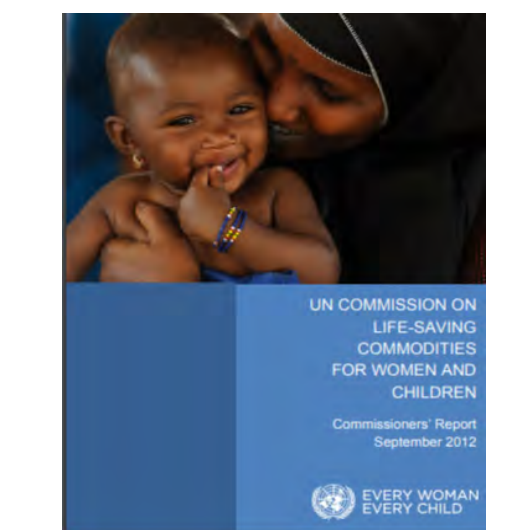
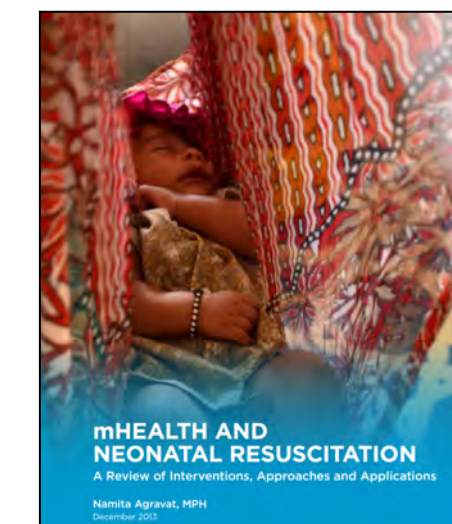
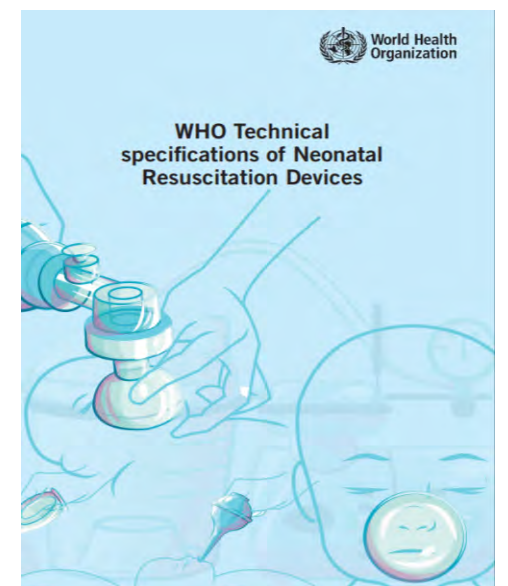


survive & thrive educational programs



Translation to Global Policies

Survive & Thrive GDA partner synergy



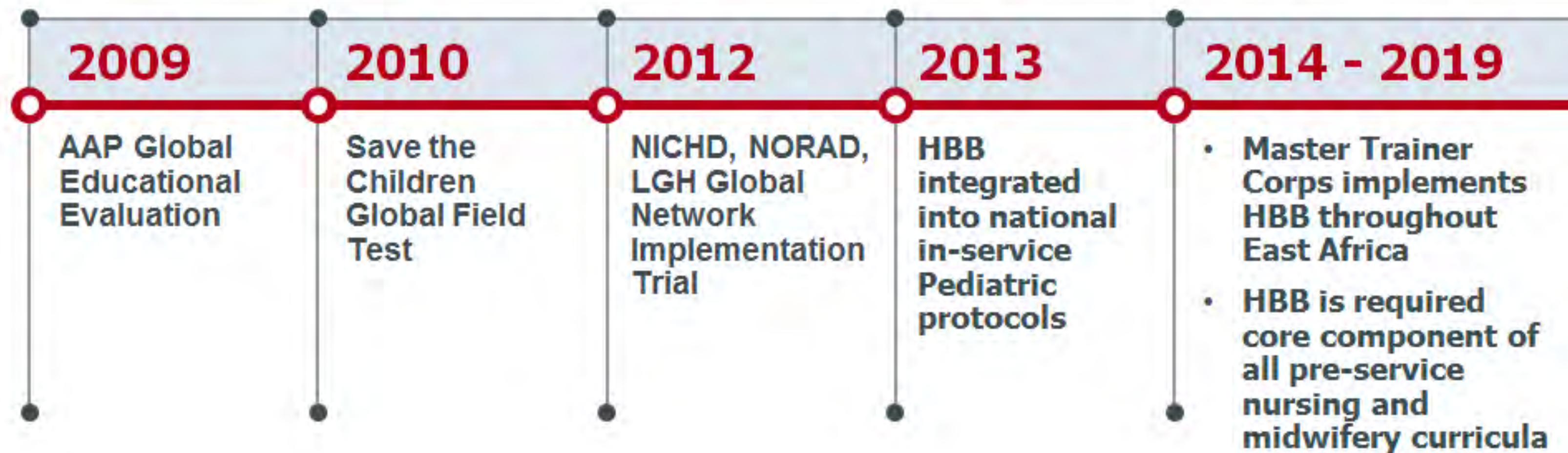
Helping Babies breathe has rolled out in 80+ countries

Integration into international & national policy frameworks

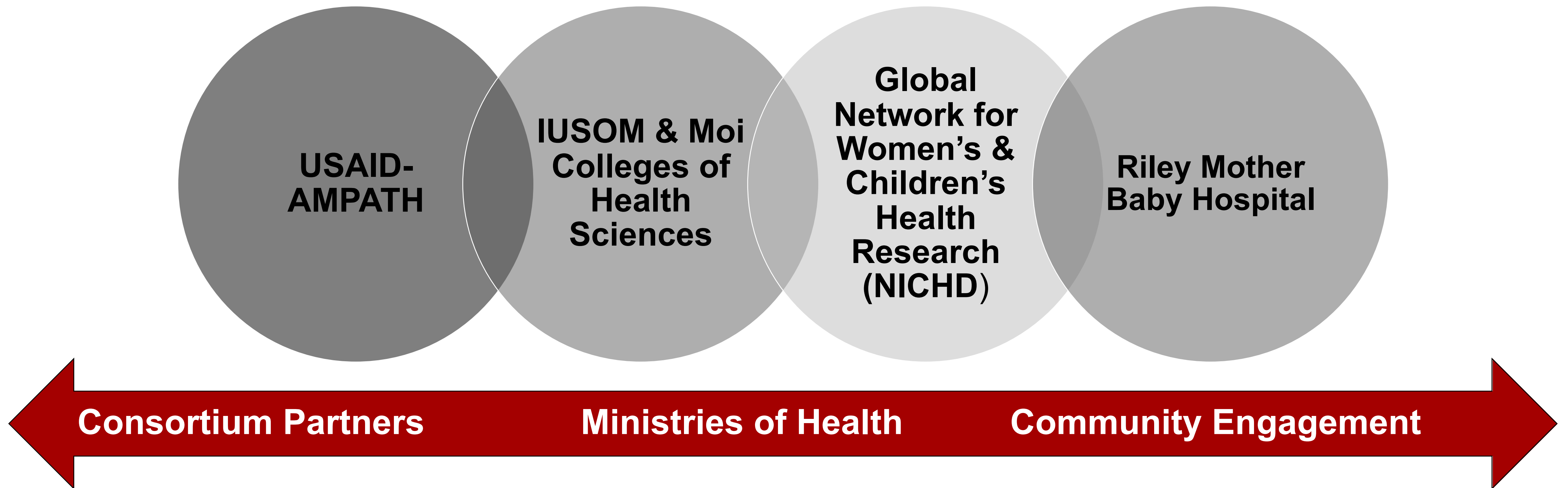


Kenya at the forefront of global HBB efforts

2009 to Present



Indiana-Moi University Partnership: Enabling environment & ecosystem for success



Global Health is Local Health



Mary Wekesa, RN, used lessons learned from *Helping Babies Breathe* to save **Baby Job** October 30, 2009 at Bokoli sub-district hospital, Kenya

Age 1 year



Job, Age 7, with his family



Thank you!

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Google Scholar:

https://scholar.google.com/scholar?q=%22Sherri+Bucher%22&hl=en&as_sdt=0,5

Summary Slides

Summary (1 of 3)

Development Context and Challenge

- High global rates of neonatal mortality from preventable causes.
- Neonatal resuscitation evidence-based, life-saving intervention that reduces asphyxia-related mortality and morbidity.
- Two-fold challenge: How to effectively adapt for low-resource settings; how to rapidly disseminate & implement in LMICs.

Research applied to the Challenge

- Original evidence-base generated in high-income countries.
- Curriculum deliberately aligned with global guidelines.
- Purposeful integration of research from the beginning – and funding provided (Educational evaluation; Field test).

Partners and Their Roles

- Clear roles, responsibilities, commitment (funding; in-kind).



June 2009: Training of the first 4 HBB Master Trainers in the country of Kenya.
HBB Global Educational Evaluation

Summary (2 of 3)

Helping Babies Breathe Translation Products

- **Practices:** The Golden Minute; active learning; Be prepared.
- **Products:** Affordable; award-winning innovation
- **Partnerships & Policies:** United Nations Committee for Life-Saving Commodities; MDGs; SDGs; WHO Every Woman Every Child; Every Newborn Action Plan; professional associations; Ministries of Health.

Translation Vehicles

- Thousands of trainings via TOT cascade
- Publications: peer-review; white papers; reports
- Implementation manuals
- Webinar



Summary (3 of 3)

Dissemination of Results

- Partner websites (cross –posting)
- Launch events & stakeholder meetings
- International & national conferences
- International, regional, national technical working groups
- Communities of practice
- Media & PR: ABC News Million Moms Challenge

