

mHBB: A digital health tool to support scale-up of an high-impact, evidence-based intervention to save newborn lives

Our Success So Far

Although newborn mortality accounts for around 44% of all under-5 years' child mortality annually, and an additional 2.6 million stillbirths occur each year, until recently, the newborn period was largely ignored by global public and digital health experts alike. This has begun to change. *Helping Babies Breathe* (HBB), a global neonatal resuscitation program which targets one of the leading causes of newborn death, intrapartum asphyxia, has scaled-up rapidly since its global launch in June 2010, *Helping Babies Breathe* has been introduced or implemented in over 80 countries worldwide,¹ and has been shown to reduce rates of stillbirth and neonatal mortality in low- and middle-income settings, However, paper-based data collection methods hamper efficient monitoring, evaluation, and reporting of key indicators to local, national, and international partners.

In response to this problem, with funding from the *Laerdal Foundation for Acute Medicine*², our team from Indiana and Moi University Schools of Medicine utilized iterative processes to develop web- and app-based (ODK) systems to collect *Helping Babies Breathe* data using mobile phones. We conducted proof-of-concept testing for 12 digitized forms in Kenya among existing HBB Master Trainers, Facilitators, and Providers, to assess the feasibility and acceptability of each of the “mobile HBB” (mHBB) systems as compared to the standard HBB paper-based data collection system. Five mHBB Master Trainers deployed mHBB among a convenience sample drawn from 253 health workers at 24 public and private health facilities in Western Kenya. Both the web-mHBB and ODK-mHBB systems, as compared to paper, were preferred by experienced HBB-trained health workers, with the ODK-mHBB system being the clear favorite overall. The successful proof-of-concept study demonstrated that, as compared to paper-based data collection, mHBB:



ODK-mHBB

- improves efficiency and reduces data lag
- is convenient and reduces potential data loss
- reduces data errors
- is simple and intuitive
- reduces reporting burden

Our study identified key suggestions from front-line end-users for the way forward, including the recommendation that, for national neonatal resuscitation training initiatives, mHBB be integrated as part of a comprehensive training package for implementation of basic neonatal resuscitation among both pre- and in-service health providers.³

The Way Forward



A HBB-trained nurse-midwife in Kenya utilizes mHBB

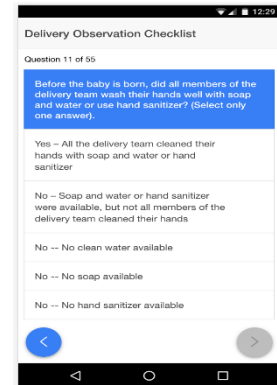
Photo credit: Md Touhidul Imran Chowdhury

¹ www.helpingbabiesbreathe.org

² www.laerdalglobalhealth.com

³ https://www.msh.org/sites/msh.org/files/2015_08_msh_mhealth_compendium_volume5.pdf (pp. 45-46)

mHBB is one of the few digital health tools purpose-built to support a high-impact, evidence-based newborn care initiative, and already incorporates many fields related to capture of proposed key indicators and metrics related to global roll-out of the *Every Newborn Action Plan*.⁴ Currently, in partnership with *Johnson & Johnson*, our team is: (1) Performing a desk review, stakeholder survey, and contextual analysis to identify partners and opportunities for scale-up; (2) Conducting iterative development and improvement of existing data collection forms and processes, with an eye toward deliberate integration of additional data fields to support linkage with the *Every Newborn Action Plan*; (3) Expanding the mHBB platform to include integrated support for a wider array of key functions, including linkage to video content, and modules related to data collection for other *Survive and Thrive* programs such as *Essential Care for Every Baby*,⁵ *Essential Care for Small Babies*,⁶ and *Helping Mothers Survive*⁷; (4) Implementing a limited usability and feasibility assessment for this revised platform, now renamed mHBS, at selected East African sites.



**Screen shot from
“Delivery Observation
Checklist” of the
revised mHBS platform**

Opportunities for Collaboration

We are eager to hear from anyone who is interested in learning more about mHBB/mHBS. In particular, partners and stakeholders from the following domains may want to contact us about potential collaborative opportunities which are unfolding over the next few months:

- Administrators, HBS Facilitators, and HBS Providers at health facilities in Ethiopia, Kenya, Tanzania, and Uganda who might be interested in participating in the upcoming limited usability and feasibility assessment for mHBS.
- Stakeholders involved in the integration of newborn indicators into national, county, or district Health Information Management Systems.
- iHRIS, DHIS2, CommCare and OpenHIE collaborators.

Learn more

Recently, mHBB was included as a linked ASH USAID mHealth case study for the Kenya Digital Health Dashboard developed by HealthEnabled.⁸ mHBB was also highlighted in a white paper prepared for the UNCoLSC Neonatal Resuscitation Technical Reference Team,⁹ and a realist review paper developed for the MCHIP Newborn Care Team in 2013 and presented at the Global mHealth Forum in 2015.¹⁰ A mHBS project web site is under development, and will be live soon! In the meantime, for additional information, please do not hesitate to contact Dr. Sherri Bucher, Indiana University School of Medicine, shbucher@iu.edu.

⁴ <https://www.everynewborn.org/>

⁵ <http://www.healthynetwork.org/blog/essential-care-for-every-baby-what-every-newborn-baby-needs/>

⁶ http://cdn.laerdal.com/downloads/f3586/ECSB_FINAL.pdf

⁷ <https://www.jhpiego.org/hms/>

⁸ <http://www.healthenabled.org/index.php/health-africa/country-dashboards/kenya-digital-health-dashboard>

⁹ http://www.mhealthknowledge.org/sites/default/files/4_mHA_neonatal_v3-5.pdf

¹⁰ <http://exhibitionfloor.himss.org/mhealth2015/public/SpeakerDetails.aspx?FromPage=Sessions.aspx&ContactID=8544>