

ACT FOR BIRTH, UGANDA

Ensuring safe delivery through fetal heart rate monitoring and a mobile phone-based mortality audit system

In Uganda, almost half of births take place in facilities. However, even when emergency care is available, many opportunities for saving lives are missed. In 2010, there were an estimated 6,000 maternal deaths, 39,000 neonatal deaths and 38,000 stillbirths. Poor quality care at the time of birth, including the lack of fetal monitoring during labor, has been highlighted as a key gap through Uganda's maternal and perinatal mortality audit process. The baby's heart rate is one of the most important markers of distress in labor and a key indicator of the need for prompt intervention. Current devices for monitoring labor in high-income countries can be expensive, complex, electricity-dependent and unreliable in resource-limited settings, where they may be ill-suited for use.



c. Ian P. Hurley, Save the Children

C = Connecting Communities: Village Health Team (VHT) members equipped with mobile phones and maternal and newborn health training are directly connected to referral facilities. VHTs assist with referral of mothers and newborns with danger signs, report births and deaths at the community level, and conduct pre- and postnatal visits to promote best maternal and newborn care practices, including care seeking, facility based deliveries and the identification of danger signs.

T = Technology and Training: The innovative wind-up Doppler FHRM is powered by human energy and designed

by South African non-profit medical device company Powerfree Education Technology. It is paired with training on intra-partum care, and thus, empowers health workers to provide better care.

ACT for Birth, Uganda is an initiative to improve quality of care at birth using high-impact, low-cost technology to promote timely decision-making for safe and successful delivery. The project involved testing an innovative fetal heart rate monitor (FHRM) and an action-oriented mobile phone-based mortality audit system. The integrated pilot was implemented in Uganda by Save the Children's Saving Newborn Lives Program and partners from 2011-2013.

Implementation date: April 2011 to 2013

About ACT for Birth

ACT for Birth comprises three components:

A = Audit and Accountability: Uganda's national paper-based mortality audit forms were adapted to a mobile phone platform to capture and input information on maternal and neonatal deaths and stillbirths in real time by midwives that is fed into a central database. It captures information on causes of deaths and missed opportunities for care. Data is analyzed on-site and used to inform decision-making for improved quality of care.

Evaluation and Results

ACT for Birth consisted of four phases. The year-long startup phase included meetings with stakeholders, feasibility assessments, baseline data collection using maternity register data and protocol development. During Phase Two, health workers and VHTs were trained and facilities equipped with FHRMs and mobile phones. Project implementation (Phase 3) occurred from July 2012 – July 2013. Regular support and supervision meetings were held to assess progress and evaluate implementation. The final phase included documentation and dissemination of findings.

Audit and Accountability: Mortality audits can reduce deaths by up to 30% if data are used effectively and clearly linked to action. Working with the Ministry of Health (MOH), the project simplified the MOH death audit form and adapted it for use on cell phones to make it more user-friendly. Twenty-five health workers involved in service delivery were trained to capture data using the adapted audit software which allows midwives to code the direct cause of death, as well as the avoidable factors linked to each death. During the

project period, all five maternal deaths were audited. In addition, 75% (121/162) of all newborn deaths were audited, compared to 7% (9/123) during the baseline.

Connecting Communities: The intervention to link women to health facilities through VHT also proved successful. As a result of the training provided, VHTs were highly motivated to perform their work, health workers knew and respected them and honored the referrals they made, and the communities developed trust in them.

Technology and Training: In the endline evaluation, 17 of the 25 health workers interviewed indicated that they had recently received in-service training on intrapartum care. All who attended thought that the trainings were effective. However, training alone is not sufficient to maintain skills; ongoing supervision and mentorship are also essential. Correct use and completion of partographs during deliveries was also monitored and markedly improved during the course of the project.

The Doppler FHRM registered high levels of success in Nakaseke in terms of acceptability, usefulness, and appropriateness. Health workers and mothers found the devices effective in monitoring the fetal heart rate before, during and after contractions. However, there were noted challenges related to the inability of the device to display the remaining battery life.

Lessons Learned

- ACT for Birth functioned as an integrated whole resulting in a sustainable package ready for scale up.
- The level of quality improvement would not have been reached if any of the three interventions were implemented as a stand-alone solution.
- At the health facility level, quality of care and accountability improved through the training, technology and frequent audit meetings.
- The use of an electronic audit platform was successful and is promising even in sites with limited connectivity due to cell phone adaptation.
- Improved knowledge and skills of VHTs improved accountability.

Conclusion

In light of ACT for Birth's findings and engagement of the National Newborn Steering Committee with the project, the Ugandan MOH is currently updating the Maternal and Perinatal Death Review strategic plan and guidelines. **There is strong government commitment and high potential for uptake of the whole package, including audit and the FHRM and Helping Babies Survive Labor training, as well as the connection between the district, VHTs and health facilities.** Additionally, the training package is being adapted for pre-service training for nurses and midwives in partnership with the Ministry of Education and Academic Institutions, and the Uganda Association of Ob/Gyn.

Geographic Coverage: Nakaseke District, Uganda

Implementation Partners: Save the Children, in partnership with the Ugandan Ministry of Health, the Association of Obstetrics and Gynaecology of Uganda, Powerfree Education Technology, MTN

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