Low-cost tools and resources are helping to save mothers and their babies in southeast Tanzania

VSO’s ACT! project aimed to reduce maternal and neonatal deaths in Lindi and Mtwara regions by 30 per cent. In this case study, members of the VSO team introduce the HDIF-funded pilot, describing some of the challenges they faced and the lessons they learned along the way.

HDIF Case Study
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Health Care Workers being trained on how to resuscitate a newborn baby at a Nyangao District Hospital
Introduction

The aim of the Accelerate Care and Treatment (ACT!) project was to accelerate the reduction of maternal and neonatal deaths in Lindi and Mtwara Regions in southeast Tanzania. The three-year project started in May 2015. ACT! partners included the regional health management teams of Mtwara and Lindi; eight selected district hospitals (three in Mtwara, five in Lindi) and linked dispensaries responsible for maternal, newborn and child health (MNCH) care planning and delivery; GE Healthcare as a private sector partner offering technical input and training for mobile ultrasound technology (Vscan); and VSO as the catalyst bringing volunteer expertise and project management input. VSO is a leading independent international development organisation providing expert volunteers to work alongside local colleagues to improve health services, livelihoods, educational opportunities, and ultimately to fight poverty in developing countries.

The innovation opportunity

Despite the fact that Tanzania has the National Road Map Strategic Plan to Improve Reproductive, Maternal, Newborn, Child and Adolescent Health (2016–2020): One Plan II, newborn deaths account for 40 per cent of all deaths of children under five years and progress is still needed to reduce maternal mortality. Tanzania did not attain MDG 5 to reduce the maternal mortality rate to 193/100,000 live births. In many facilities, newborns were either sent to the postnatal ward with their mother where systematic monitoring was not taking place or in the case of premature babies sent home, which would often result in the baby’s death. Within this context, VSO and its partners previously piloted several key innovations in three hospitals in Lindi and Mtwara Regions as well as the introduction of ultra-portable ultrasound devices (Vscans) in Pwani Region to screen at-risk pregnant women, which had contributed to significant decreases in maternal and neonatal mortality at the hospital level.

The innovation

ACT introduced several low-cost, low-tech tools and resources to improve MNCH care across the care continuum:

1. Screening and referral of at-risk neonates through the use of the Newborn Triage Checklist (NTC), a simple screening and referral tool that assesses neonates during their first 48 hours;
2. Establishment and/or refurbishment of low-cost Neonatal Intensive Care Units (NICUs) at district hospitals;
3. Early screening of pregnancies through the use of ultra-portable ultrasound devices (Vscans);
4. Knowledge and skills transfer to regional, district, and lower-level health-care workers (HCWs); and
5. Use of the SMS platform to remind pregnant women of their antenatal care (ANC) visits and postnatal screenings for neonates.
Data from a 2017 evaluation conducted in a sample of four district hospitals (eight were covered by the project) showed that the neonatal mortality rate (NMR) for all sites had fallen since the establishment and refurbishment of the NICUs and the introduction of the NTC and Vscans.

The project introduced the NTC in eight district hospitals and 45 dispensaries. The NTC was found to be a highly effective diagnostic tool for monitoring newborns and identifying when a newborn is sick and requiring specialised care in a NICU. Similarly, Vscans were introduced in seven district hospitals and are also being used at primary healthcare level facilities at least once per quarter, which has assisted in identifying high-risk pregnancies. These resources were well used by clinicians who spoke highly of their utility and impact. In Nachingwea District Hospital, the data showed an increase in neonatal deaths but further investigation suggested this was the result of increased accuracy in reporting this type of death.

All cadres of staff (doctors, nurse/midwives, clinical officers, nursing assistants) were trained in using the NTC, and it is now accepted and recognised as an important monitoring tool. NICU staff were trained in supporting and including mothers in the care of their sick or premature infants, i.e. using Kangaroo Mother Care (KMC); promoting breastfeeding; and keeping their newborns clean and warm. Staff work more effectively when trained and supplied with the Vscan, use the NTC, and have the NICU facility to provide specialised care for sick and premature newborns. Having these resources and being competent in using them has increased staff motivation and morale, and ultimately improved the care and treatment that is delivered. Senior management (regional and community health management teams, facility Medical Officers), are committed to continue using the tools and report that these are included in their annual budget plans.

‘It [NTC] is highly beneficial – I can assess and know exactly who needs attention. All NICU and labour ward staff are trained. Different staff cadres can also follow the chart and use the checklists for all newborns.’
District Medical Officer

‘The Vscan has improved expectations. Rural people did not know anything like this before. It has resulted in an increase in utilisation of ANC services.’
Regional Nursing Officer

Staff trained to use the Vscan find it a highly useful resource, and it is liked by pregnant women who appreciate having information about their pregnancy. Some women, who had presumed they were pregnant, were diagnosed with fibroids and other conditions that were subsequently treated. The scan is highly adaptable and is used as a diagnostic tool during labour, for example when a midwife is concerned about a falling foetal heart rate and whether the labour can proceed or if other action is needed.

The breakthrough

The ACT project has contributed significantly to the change in attitudes and perceptions of both clinicians and mothers that sick newborns can be treated and premature babies can survive when given the right care during the neonatal period. The key breakthrough for ACT was introducing a set of low-cost and low-tech tools that are acceptable to staff and have a measurable impact on clinical outcomes. The NTC meets these criteria, and there is evidence that the tool is being used to inform clinical decision-making, for example the admission of sick
newborns to NICUs. Previously, there were no agreed criteria being applied when assessing newborns.

“If NICU was not there I would not be holding my baby like this. It has saved a lot of babies’ lives here.”
Mother with 18-month-old child admitted to NICU for one month

The key challenge is maintaining quality of care for newborns when there are resource constraints; for example, staff rotation from a NICU to cover other clinical areas; staff rotation to administrative posts, or ill health or relocation; unavailability of vital monitoring equipment due to breakages and lack of maintenance capability and/or inability to access spare parts (for equipment supplied from outside the country). The hospitals need to commit to maintaining these resource inputs. The other main challenge is that the SMS platform did not work as intended due to problems with recording mobile telephone numbers and the fact that not all women had mobile phones. As a result, the targets for registration and messaging were not reached.

Learning

ACT efforts to build upon and integrate existing low-cost, low-tech interventions that had already been piloted and proven were essential to the success of the project. The NTC was already deemed viable and acceptable to the clinicians who would be using it. The cost of printing the NTC is low and therefore it can be easily reproduced.

While the Vscan technology is also low-cost, resource constraints at district level suggest that it may not be feasible for hospitals to continue to procure and/or purchase spare parts or provide the required maintenance. Nonetheless, the use of Vscans clearly offers important savings in terms of accurate and timely diagnoses, and ultimately the potential to save lives and reduce morbidity in pregnant women.

There is a need to sensitisise the Ministry of Health regional and district-level staff at an early stage to the costs, maintenance, and training requirements for any new initiatives being introduced in their areas.

There is also more to be done at community level to promote birth preparedness and the importance of regular ANC visits during pregnancy, as well as training HCWs to recognise and refer sick newborns. SMS technology has a role to play, but it should not be considered as a simple ‘add-on’ for programme design since it clearly has its own resource requirements that should be fully thought through and tested prior to scale-up.

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