Reducing preventable maternal, newborn, and child deaths at scale by improving care effectiveness and efficiency

Background

In line with the Child Survival Call to Action and the strategic goal of preventing child and maternal deaths, the United States Agency for International Development (USAID) has directed its resources toward evidence-based, life-saving interventions that have the greatest impact on mortality, focusing on the 25 countries — primarily in sub-Saharan Africa and South Asia — that account for roughly 70% of child and maternal deaths.

As a global USAID partner in this endeavor, the USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project has since 2012 sought to build the capacity of governments and implementing partners to adapt quality improvement approaches to strengthen essential system functions and scale up and sustain high-impact, evidence-based health care for leading causes of maternal, newborn, and child mortality in USAID priority countries. Through both Mission and maternal, newborn, and child health (MNCH) direct funding, ASSIST has worked to support USAID’s Preventing Child and Maternal Deaths (PCMD) strategy in India, Kenya, Mali, and Uganda and through global initiatives.

ASSIST activities to reduce preventable maternal, newborn, and child deaths

ASSIST MNCH activities have sought to incorporate best practices along all points of antenatal, intrapartum, postpartum, postnatal, and early childhood care from the household to hospital continuum. ASSIST’s activities have contributed to the following objectives:

- Build government and partner capacity to apply improvement approaches across health system levels (community, clinic, hospital, district, regional) for leading causes of maternal, newborn, and child morbidity and mortality in USAID MNCH priority countries.
- Strengthen health worker and manager skills, motivation, and performance through integrated clinical and quality improvement (QI) capacity building and engagement in ongoing improvement work.
- Develop, test, and disseminate technical frameworks, approaches, and tools that can increase effectiveness of improvement and health system strengthening initiatives in support of the USAID PCMD strategy.
- Support implementation of global, regional and national initiatives, including the WHO-led Quality of Care (QoC) Network for maternal, newborn, and child health and the WHO SEARO Point of Care Quality Improvement movement.
- Support development and testing of MNCH quality of care indicators and measurement to strengthen routine health information systems, permit regular tracking of quality measures at service delivery level, and promote accountability at global, national, and sub-national levels.

Key results

India: From August 2013 to December 2015, ASSIST worked with district health authorities and improvement teams in 437 facilities in 27 USAID-supported districts in six states, focusing on the intrapartum and early neonatal periods since this is the most efficient strategy to save lives. Overall, supported sites showed a 14.6% reduction in perinatal deaths in the hospital (including a 10.1% reduction in stillbirths and a 30.4% reduction in neonatal deaths). This is equivalent to 19 deaths averted per month compared to before we started working in these facilities. Spreading...
this improvement to the entire country could save 31,000 lives per year.

**Northern Uganda:** From July 2015 through March 2017, ASSIST worked with three districts in Northern Uganda to address gaps in integrated management of newborn and childhood illness (IMNCI) services. After 11 months of improvement activities (Jan 2016–Nov 2016), facility-level teams improved their assessment of sick children for three general danger signs from 0% to 45%; assessment of three main symptoms from 22% to 93%, and recording weight from 21% to 100%. Improvements were also achieved in assessment and classification of sick infants less than two months of age. According to medical documentation review, severity assessment and IMNCI-based classification improved by 56% and 25%, respectively, in intervention facilities compared to control sites (p<0.0001).

**Saving Mothers Giving Life (SMGL) in Uganda:** ASSIST began supporting the Ministry of Health (MOH) to roll out SMGL in Uganda in 2012, working in high-volume sites in four districts of Western Uganda. In 2015, ASSIST applied the same improvement strategy and best practices from the Western Uganda sites to 20 high-volume MOH sites in six districts of Northern Uganda, and in 2016 worked with the MOH to scale up the strategies and best practices from the 20 high-volume facilities to an additional 98 lower-level facilities, reaching a total of 118 facilities and their surrounding communities. The facility maternal mortality ratio (MMR) in supported sites decreased by 12.9%, from 215/100,000 to 187/100,000 live births. Maternal mortality from direct obstetric causes was reduced by 10.1%, from 185.9/100,000 to 167.2/100,000 live births. The institutional neonatal mortality rate was reduced by 37.3%, and the perinatal mortality rate, by 37.5%. Almost all mothers were screened for hypertension, and 7 in 10 women were screened for syphilis during antenatal care. All women received a uterotonic drug to prevent post-partum hemorrhage, and 9 in 10 women were monitored using a partograph. Almost all babies were resuscitated successfully and cared for using a standard newborn package.

**Mali:** ASSIST supported two districts of Mopti Region to increase complete immunization for children under one year and especially increase acceptance of immunization for girls as recommended by the national immunization program plan. Applying gender-sensitive strategies, the gap between male and female infants was reduced from 23% in October 2016 to 9% in August 2017, and the percentage of both male and female infants completing all vaccinations increased from 41% to 83% for males and from 18% to 74% for females.

**Georgia:** QI teams supported by ASSIST dramatically improved child respiratory tract infection (RTI) diagnosis and management practices, including increasing the percentage of children diagnosed with RTI clinically justified diagnosis from 47% to 100%. Improvements in justified diagnosis were also accompanied by improved management and treatment of RTIs, increasing the appropriate use of first-line antibiotics from 7% in April 2012 to 100% in February 2014.

Eighteen months of QI interventions resulted in a 68% (p<0.001) attributable increase in justified antibiotic use, a 33% (p<0.001) increased use of first choice antibiotic at the hospital, and a 71% (p<0.001) improvement at ambulatory facilities. QI interventions also resulted in a significant (p<0.001) decrease in non-evidence-based medications at ambulatories (by 2.64) and hospitals (by 6.12) with associated cost-savings for facilities and payers.

**Lessons**

- QI enables teams to find innovative solutions and address gaps with existing resources.
- QI approaches allow those on the frontlines of care to identify and address gaps in all aspects of maternal and newborn care, improving not just MNCH care effectiveness but also efficiency and equitable access to lifesaving services and drugs.
- In scaling up improved care, spreading a general method to diagnose and fix facility-level problems (i.e., how to prioritize improvement goals, how to work in a multi-disciplinary team, how to use different tools to diagnose problems, how to develop possible solutions, and how to adjust these solutions to work in a specific setting) is more effective than trying to spread the use of context-specific changes.
- Effective scale-up of new ideas requires: 1) new practices that are simple, better than the current way of doing things, and adaptable, 2) organizational and administrative support to allow health workers to innovate, and 3) good communication between different parts of the health system.
- Improving documentation and data quality are critical inputs for site-level quality improvement.
- Embedding monitoring and evaluation strategies in the improvement effort and documenting and sharing learning across teams allows for more rapid scale-up.
Resources Available

Guides and technical reports

• **Point of Care Quality Improvement (POCQI):** These materials were developed jointly by the South East Asia Regional Office of World Health Organization (WHO SEARO), WHO Collaborating Centre on Training and Research in Newborn Care, AIIMS New Delhi, and the USAID ASSIST Project and are available at: www.pocqi.org:
  - POCQI learner and facilitator manuals (2017)
  - POCQI virtual workbook (2018)
  - Setting Up and Managing a Quality Improvement Program at District Level (2018)
  - Coaching for Quality Improvement (2018)

• **Improving Care for Mothers and Babies: A Guide for Improvement Teams** (2016). (Available in English, French and Spanish)


Case studies


• **Setting Up a Self-Sustaining Quality Improvement Network in India** (2017).

• **Using a scientific approach to improve early identification of complicated labour cases in Bangladesh** (2017).

• **FunctionaHernaling a Hospital Maternal and Perinatal Death Review (MPDR) Committee: An Experience of Anaka Hospital in Nwoya District, Northern Uganda** (2017).

• **Improving Newborn Resuscitation Outcomes through the Establishment of Helping Babies Breathe (HBB) Skills Labs at Pope John Paul’s Hospital Aber (PJPHA) in Oyam District, Mid-Northern Uganda** (2017).

• **Strengthening integrated family planning/maternal and neonatal health postpartum services and associated health system functions in Niger** (2016).

Change packages

• **Tested Changes to Improve Newborn and Child Health Care Services in Uganda** (2017).

• **Tested Changes to Improve Maternal and Newborn Care in Uganda** (2015).

• **Changes that improved maternal health services during antenatal period in India** (2015).

• **Changes that improved maternal health services during postnatal period in India** (2015).

• **Changes that improved maternal health services during intranatal period in India** (2015).

• **Changes that improved maternal health services during antenatal period in India** (2015).

Articles

• **Improving postpartum care in a large hospital in New Delhi, India.**

• **Reducing hypothermia in newborns admitted to a neonatal care unit in a large academic hospital in New Delhi, India.**

• **Antenatal corticosteroids for management of preterm birth: a multi-country analysis of health system bottlenecks and potential solution.**

• **Improving postpartum care for mothers and newborns in Niger and Mali: a case study of an integrated maternal and newborn improvement programme.**

• **Evaluation of a quality improvement intervention for obstetric and neonatal care in selected public health facilities across six states of India.**

• **Improving Integrated Management of Newborn and Childhood Illnesses in Northern Uganda.**

• **Improving rational antibiotic treatment of common childhood conditions in Uganda.**

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