

Strengthening Newborn Survival through Functional NICUs & Specialist Care

*Health worker
cares for newborn
at Masaka Regional
Referral Hospital.*



The EMPOWER Programme

Funded by the United Kingdom Foreign, Commonwealth & Development Office (FCDO), the Empowering Women for Better Reproductive Health Outcomes (EMPOWER) Programme (February 2025–December 2026) supports the Government of Uganda to reduce preventable maternal and child deaths by strengthening public health systems, building health worker capacity to deliver quality reproductive and maternal health services, and addressing misinformation and harmful gender norms. Pathfinder International leads implementation in partnership with Baylor College of Medicine Children's Foundation Uganda, the Association of Obstetricians and Gynaecologists of Uganda, Communication for Development Foundation Uganda, and Uganda Youth and Adolescent Health Forum.

EMPOWER is designed to strengthen the health system's ability to deliver equitable, quality reproductive and maternal health services across 50 districts. Within this broader health systems investment, EMPOWER functionalized Iganga General Hospital's and Masaka, Fort Portal, and Lira Regional Referral Hospitals' Level 3 Neonatal Intensive Care Units (NICUs) to provide advanced newborn care.

Context

Neonatal mortality remains the leading contributor to death across all age groups in Uganda, at 22 deaths per 1,000 live births (UDHS, 2022). Mortality rates are uneven across regions, with high rates of 22/1,000 in Lango, 26/1,000 in Buganda, 25/1,000 in Tooro, and 28/1,000 in Busoga (UDHS, 2022). Most deaths are preventable and are mainly due to birth asphyxia, prematurity complications, and neonatal sepsis. The quality and coverage of newborn care in Uganda are constrained by key health system gaps, including inadequate worker knowledge and skills, limited mentorship and follow-up, stockouts of essential medicines and commodities, inadequate and poorly maintained equipment, and weak newborn data management systems.

The Ministry of Health (MOH) developed the Accelerated Neonatal Implementation Plan (2025/26–2029/30) with a goal to reduce the neonatal mortality rate to 12/1,000 live births by 2030. Per MOH standards, general hospitals should provide at least Level 2B newborn care, which includes capacity to identify and refer newborns requiring Level 3 care to regional referral hospitals. In turn, regional referral hospitals should provide at least Level 3 newborn care and serve as referral centers for lower-level facilities. The Lango, Tooro, Buganda, and Busoga subregions are supported by Lira, Fort Portal, and Masaka Regional Referral Hospitals and Iganga General Hospital, respectively.

The EMPOWER Approach

EMPOWER approached NICU functionalization as a systems investment. Working closely with the MOH Newborn Health Secretariat, the programme analysed newborn health data, identified high-burden regions, and agreed on priority health facilities. In collaboration with Local Maternity and Neonatal Systems (LMNS) newborn coordinators, facility-specific assessments were conducted to identify gaps in the availability and functionality of newborn services. EMPOWER addressed these gaps through a four-pronged approach (below) that ensured hospitals not only received advanced technology, but retained the clinical competencies and systems required to use and sustain it.

1. Assessing and strengthening service readiness.

Initially, all supported regional referral hospitals provided Level 2B newborn care. Per MOH standards, EMPOWER supported hospitals to upgrade Level 2B NICUs to Level 3 NICUs by strengthening the service environment and capacity to manage critically ill newborns across intensive, high-dependency, specialised, and Kangaroo Mother care services.

2. Equipping and maintaining the NICU.

Based on equipment needs identified in the facility assessments, advanced neonatal equipment was provided alongside biomedical engineering support. This pairing was intended to ensure that advanced equipment could be appropriately installed, used, maintained, and integrated into routine service delivery.

3. Building specialised and frontline clinical capacity.

Clinical teams received mentorship and skills development in neonatal resuscitation, incubation, airway management, mechanical ventilation, and other aspects of care for critically ill newborns. EMPOWER's wider health workforce strengthening model uses peer-to-peer mentorship, standardized MOH tools, competency assessment, simulation, and repeated engagement with health facilities. In the broader EMPOWER mentorship model, district and regional mentors work alongside providers to identify performance gaps, demonstrate skills, support return demonstration, and reassess competency.

4. Strengthening the clinical system around the NICU.

The intervention supported clinical systems so that care could extend across the newborn's pathway from delivery through intensive care and recovery. This integrated approach was designed to make the NICU a functioning service within the hospital rather than a standalone room containing specialised equipment. This included organising workflows in the facilities, mentoring health workers in caring for sick babies, reporting data in the MOH DHIS2, and collaborating with biomedical engineers to train health workers in using and maintaining new equipment.



Patient in infant warmer at Lira Regional Referral Hospital.

Implementation Experience

Programme data and facility experience indicate that EMPOWER's support increased the capacity and use of advanced neonatal services. Quantitative data from the MOH DHIS2 show that admissions across the four EMPOWER-supported NICUs increased from 375 in April 2026 to 578 in June 2026. These improvements may indicate increased demand for advanced neonatal care and growing confidence in services. Facility-level experience from Masaka and Fort Portal Regional Referral Hospitals provides additional qualitative evidence of changes in infrastructure, service quality and scope, provider competence, and equipment availability.

Before EMPOWER's intervention, **Masaka Regional Referral Hospital** frequently managed more than 50 babies per day in their 15-bed Level 2B NICU. In addition to overcrowding, the NICU contended with outdated incubators and phototherapy equipment, limited respiratory support and monitoring equipment, and insufficient capacity to manage very low birth weight and critically ill newborns. The facility team reported that severe respiratory complications, persistent pulmonary hypertension, and extreme prematurity were particularly challenging for them to manage. Following programme-supported expansion to a 50-bed Level 3 NICU, the clinical team reports reduced overcrowding, lower infection rates, improved monitoring, enhanced respiratory support, and improved survival among small and sick newborns.

At **Fort Portal Regional Referral Hospital**, EMPOWER provided the equipment and training necessary for the facility to begin providing critical newborn services like incubation, radiant warming, and respiratory support. In July 2026, Fort Portal treated 58 newborns with these critical services, an increase from 47 in June 2026. In April 2026—just a few months prior—these services were not offered at all.

Level 2B NICU

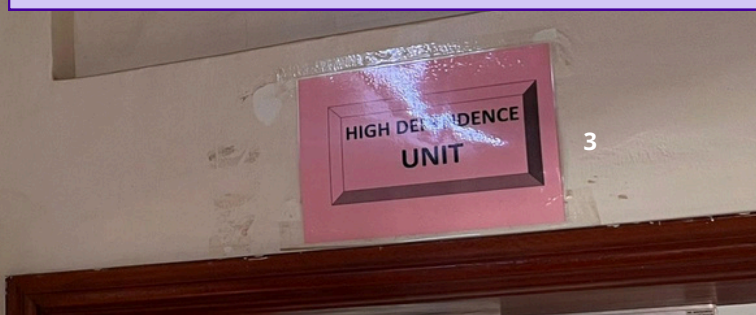
Specialised care for sick and premature newborns

- Management of prematurity and low birth weight newborns
- Management of neonatal sepsis, jaundice, and feeding problems
- Oxygen therapy and CPAP for newborns with respiratory difficulties
- Monitoring and supportive care, including thermal care, and feeding support
- Basic neonatal resuscitation and stabilisation of critically ill newborns before referral
- Capacity to identify and refer newborns requiring Level 3 care

Level 3 NICU

Advanced treatment and monitoring of critically ill and very premature newborns

- Advanced respiratory support, including CPAP and mechanical ventilation
- Continuous monitoring of oxygen saturation, heart rate, respiratory rate, and other vital parameters
- Care for very premature and very low-birth-weight newborns, including specialised feeding and thermal support
- Management of severe neonatal conditions, including birth asphyxia, severe sepsis, and respiratory complications
- Advanced diagnostic and clinical support, with access to laboratory and imaging services
- Specialised neonatal staff with skills in managing critically ill newborns
- Reliable electricity and essential infrastructure to support continuous operation of neonatal equipment
- Capacity to receive referrals from lower-level facilities and provide stabilisation and definitive care



Dr. Ojambo, a neonatologist at Masaka Regional Referral Hospital, examines a newborn in an infant warmer.



Before Dr. Gerald Ojambo's fellowship in neonatology, he had not independently provided mechanical ventilation, inserted central lines, or managed complex neonatal critical care cases. After EMPOWER's intervention at Masaka Regional Referral Hospital, he was able to apply these skills in a well-equipped NICU, and improve his proficiency in neonatal intensive care procedures, family-centred neonatal care, quality improvement, and mentorship. He now manages more complex newborn cases while training nurses, mentoring interns and postgraduate doctors, supporting regional mentorship, and contributing to NICU functionalization in line with MOH guidelines. Dr. Ojambo's experience demonstrates how specialist capacity can be multiplied through mentorship and training of other health workers.

Lessons & Recommendations

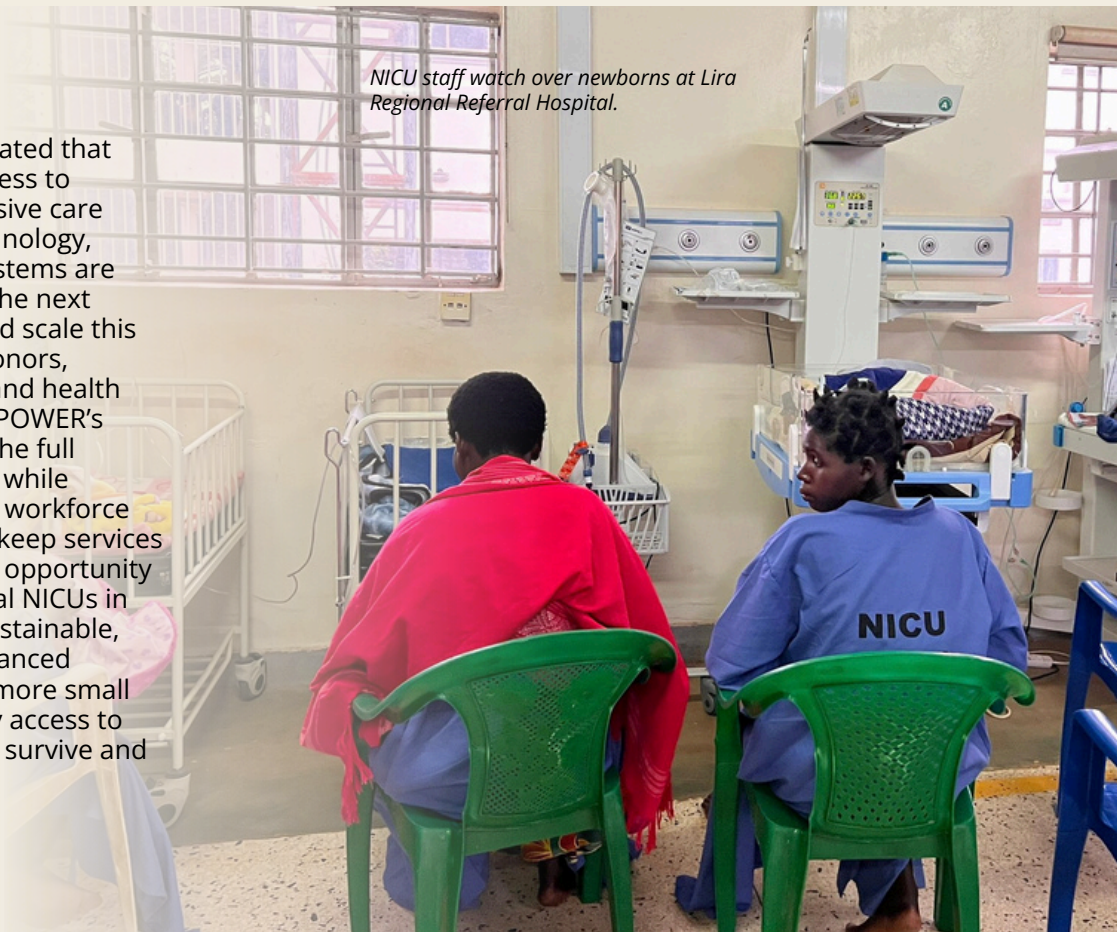
EMPOWER's experience highlights that advanced technology for newborn care is not a one-time investment. Sustaining and expanding services requires ongoing workforce development, equipment maintenance, reliable commodities and oxygen, diagnostic capacity, and continuous quality improvement. These requirements need to be incorporated into routine hospital and national planning, financing, and performance management. Going forward, governments and donors should plan and finance NICU strengthening as a comprehensive health system investment. This includes:

- **Integrating NICU service readiness into routine planning and financing**, including staffing, equipment and biomedical maintenance, oxygen, diagnostics, medicines and consumables, infection prevention, referral systems, and quality improvement.
- **Institutionalizing data-driven quality improvement** by using routine health information and facility level data to monitor NICU utilisation, quality of care, complications, length of stay, and newborn outcomes and to identify priorities for continued improvement.
- **Strengthening the systems that enable quality neonatal care**, prioritizing remaining gaps such as specialised nursing, oxygen infrastructure, diagnostic services, medicines and consumables, breast milk banking, and equipment maintenance alongside further investments in advanced clinical capacity.
- **Investing in specialist neonatal providers and structured mentorship models** that build the skills and confidence of nurses and clinicians while creating pathways for local expertise to be sustained and shared across facilities.

Conclusion

EMPOWER has demonstrated that hospitals can expand access to advanced neonatal intensive care when infrastructure, technology, workforce, and health systems are strengthened together. The next challenge is to sustain and scale this capacity. Government, donors, implementing partners, and health facilities can build on EMPOWER's experience by financing the full neonatal care ecosystem while investing in the specialist workforce and systems required to keep services functional over time. The opportunity is to move from functional NICUs in selected hospitals to a sustainable, connected system of advanced neonatal care that gives more small and sick newborns timely access to the services they need to survive and thrive.

NICU staff watch over newborns at Lira Regional Referral Hospital.



The **Empowering Women for Better Reproductive Health Outcomes (EMPOWER)** programme is an initiative funded by the UK Government to reduce preventable maternal deaths and empower women and girls in Uganda. Implemented on behalf of the Ministry of Health, EMPOWER is led by Pathfinder International in partnership with Baylor Uganda, Communication for Development Foundation Uganda, Uganda Youth and Adolescent Health Forum, and the Association of Obstetricians and Gynecologists of Uganda.

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For nearly 70 years, Pathfinder International has been a catalyst for systems transformation, inclusive growth, and resilient communities. With a global footprint spanning Africa, South Asia, and the Middle East, we invest in women and girls by expanding access to essential health products and services, unlocking leadership pathways, and strengthening economic participation. By partnering with civil society, governments, and the private sector, we scale women-led innovations that deliver sustainable systems of support, while generating measurable impact with the goal to ensure every woman has the agency to shape her future and lead a healthy, fulfilling life.

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