NEST360
ANNUAL HIGHLIGHTS

2022



The future of newborn care begins **now.**



OUR MISSION

We are united to end preventable newborn deaths in African hospitals.

Substantial global progress has been made in newborn health and survival over the past decade. However, a report released by the United Nations Inter-Agency Group for Child Mortality Estimation reminds us that the first 28 days of life (neonatal period) remain the most vulnerable time for child survival, particularly in sub-Saharan Africa. According to the report, neonatal deaths in sub-Saharan Africa constituted nearly 47% of the under-five deaths in 2021, and if present trends continue, over 60 countries will not meet the 2030 Sustainable Development Goal for reducing neonatal mortality or the global target for reducing stillbirths.

The NEST360 alliance is working with governments in Malawi, Kenya, Tanzania, and Nigeria to prevent newborn deaths in hospitals by adopting a co-created, whole health systems package with an innovative bundle of technologies, mentoring for clinicians and engineers, and evidence-based implementation strategies for sustainability. Our primary goals are to:

- Establish a bundle of technologies to support quality comprehensive newborn care
- Create distribution systems to make the NEST360 bundle accessible and affordable
- Scale the NEST360 package nationally in Malawi
- Test and refine the NEST360 package in Kenya, Tanzania, and Nigeria
- Build an investment case for comprehensive care of small and sick newborns

“I gave birth to twins at another hospital, and the babies were struggling with rapid breathing. We were transferred to University College Hospital, and things improved after the twins were placed on a CPAP machine. Their breathing became normal again, and my joy was restored. I am so grateful that this technology helped with their survival and am so thankful to all the staff involved who were able to make me a happy mother of two.”

- A mother who had twins at University College Hospital in Lagos, Nigeria



Malawi	Kenya	Tanzania	Nigeria
38 hospitals reached national scale for SSNC	13 hospitals implemented across 10 counties	7 hospitals implemented across 5 districts	7 hospitals implemented across 3 districts
46,900 newborn admissions to date	27,301 newborn admissions to date	19,450 newborn admissions to date	5,040 newborn admissions to date
22 skills labs installed	11 skills labs installed	11 skills labs installed	5 skills labs installed





NEST360'S MAJOR ACCOMPLISHMENTS IN YEAR 4:

98,701

Total newborn admissions

65

Facilities scaling and institutionalizing small and sick newborn care with NEST360 support

9,400

pre-service and in-service clinical staff trained to date

1,470

BMETs trained to date

22 hospitals, 4 countries

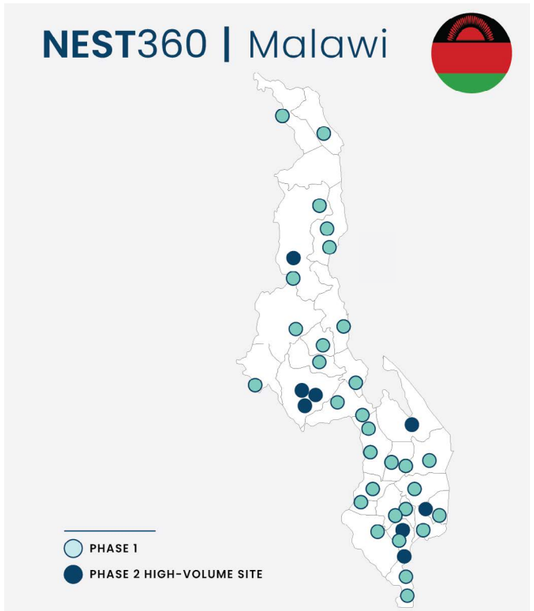
have Hadli Device Monitoring System installed on devices (and are providing insights on device utilization)

Achieving Sustainable Development Goal 3.2 starts with **country-led solutions.**

Each NEST360 country has a unique change method for small and sick newborn care that aims to reach its respective Sustainable Development Goals.

Country Spotlight: Malawi

With a national scale of newborn care in place, Malawi focuses on improving and solidifying the quality of care by using data to influence action at each facility while enabling learning in facilities across the country.





Pictured above: A syringe pump user orientation session, Malawi.

In 2022, Malawi has achieved and, in some cases, surpassed its implementation goals. In total, NEST360 is implemented in 38 health facilities in Malawi (out of 36 originally targeted) across 27 districts. NEST360 Malawi also exceeded their skills labs installation targets, with a combined 22 labs installed (20 clinical labs and two technical labs) out of 16 originally planned.

NEST360 Malawi is improving the quality of Level 2 Small and Sick Newborn Care by:

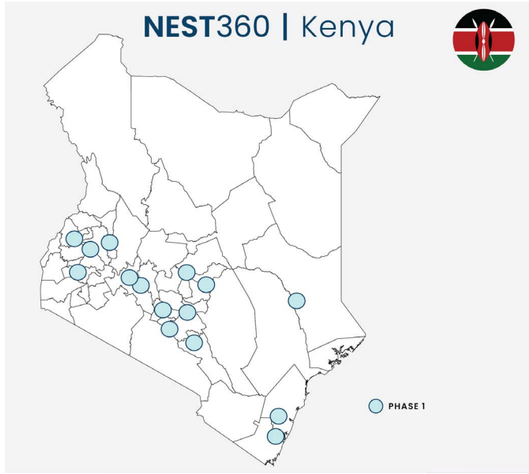
Strengthening the Use of Data to Influence Action
The Malawi Ministry of Health and NEST360 have co-created a system that improves the quality of small and sick newborn care at the national, subnational, and facility levels. This system uses an interdisciplinary approach – bringing biomedical engineers, nurses, doctors, data clerks, and hospital management to work together to solve problems identified within the facility and lead change based on their expertise.

Creating a Country Learning Network
To facilitate inter-facility learning, subnational and national communities of practice were established with leadership from NEST360, UNICEF, WHO, and USAID. These communities provide a platform for facilities to exchange ideas and learn from one another. Subnational and national communities of practice were established through program review and data for action meetings.

Read more here: nest360.org/malawi/

Country Spotlight: Kenya

NEST360 Kenya's focus for the past year was to build the foundation for sustainability and scale and to institutionalize small and sick newborn care into the Ministry of Health (MOH).





Pictured above: World Prematurity Day celebrating the launch of the Comprehensive Newborn Care Protocols at Pumwani Hospital in Nairobi, Kenya. (Credit: Save the Children, 2022)

NEST360 Kenya is institutionalizing Level 2 Small and Sick Newborn Care for sustainability and scale by:

Launching the National Comprehensive Newborn Care Protocol
Kenya launched their Comprehensive Newborn Care protocols and handbook on November 17, 2022. These protocols provide a stepwise approach to evidence-based routine newborn care and management of complications while integrating essential newborn care technologies. The handbook was inspired by the NEST360 clinical modules and was put together by a team of experts from NEST360, the Ministry of Health leadership, Kenya Paediatric Association (KPA), Association of Neonatal Nurses Kenya (ANN_Kenya), and Emergency Triage Assessment and Treatment (ETAT+).

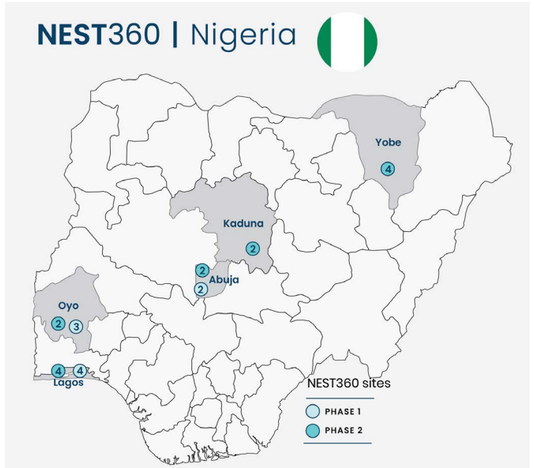
Supporting the Training of Clinicians and Biomedical Engineering Technicians (BMETs) by Utilizing Global Public Goods
o make effective progress in improving small and sick newborn care, the Kenya team prioritized using NEST360 global public goods to support the training and mentorship of clinical staff and biomedical engineers in newborn care. The training support resources included clinical and biomedical training modules, job aids, device specification lists for each facility, mentorship, and training videos.

Improving Quality by Using Data to Create Action
The Kenya team is also using data to enable action at each facility and is creating a community of learning across facilities that will improve the quality of care and expand coverage of effective interventions.

Read more here: nest360.org/kenya/

Country Spotlight: Nigeria

Partnerships have driven the implementation and scale of quality small and sick newborn care in Nigeria during 2022.





Pictured above: Nurse delivering care to a newborn patient, University College Hospital, Lagos, Nigeria.

NEST360 Nigeria is institutionalizing Level 2 small and sick newborn care for sustainability and scale by:

Collaborating to Scale Change
In Nigeria, the mortality rate of newborns is 34 per 1,000 live births, and their target is 12 per 1,000. In order to close this gap, we are leveraging collaborative partnerships with other organizations working to improve maternal newborn health. This effort relies on each organization's strengths and geographic concentration to efficiently scale small and sick newborn care across the expanse of Nigeria.

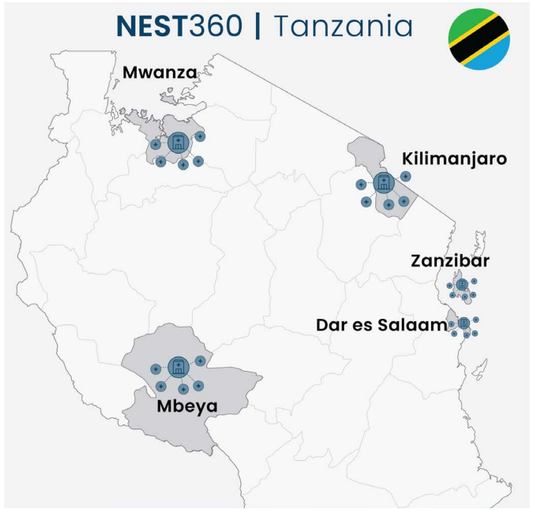
In 2022, our team in Nigeria worked with MOMENTUM Country and Global Leadership (MCGL), UNICEF, USAID-IHP, and the Quality-of-Care Network to implement and improve small and sick newborn care in 41 secondary hospitals across the country.

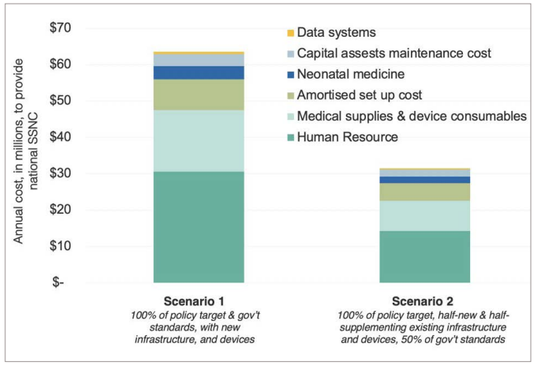
Using Data to Influence Action
NEST360 Nigeria was one of the first countries to install the Hadli Health Device Monitoring system to understand better the use and downtime of equipment in the neonatal wards and guide change. Nigeria faces many inconsistent power issues, and the Hadli device monitoring systems collect data on 72 different electricity-powered technologies in select high-volume facilities in Nigeria.

Read more here: nest360.org/nigeria/

Country Spotlight: Tanzania

NEST360 Tanzania's focus for the past year was to move forward with implementation progress and grow the cross-country learnings.





Pictured above: Affordability, budget impact, and cost-benefit ratio of SSNC national scale-up in Tanzania.

NEST360 Tanzania is adapting and sharing the learnings for national programming of small and sick newborn care by:

Making the Investment Case for Small and Sick Newborn Care
Throughout 2022, NEST360 Tanzania worked with the Ministry of Health to develop an investment case for Small and Sick Newborn Care – a tool that informs resource mobilization and allocation for newborn care within the government budget processes. From the Investment Case NEST360 Tanzania prepared, the Ministry of Health understood the importance of newborn health funding. As a direct result of this exchange, the Minister of Health announced improvements to newborn health as one of the priorities for their fiscal year 2022-2023, including a Ministry of Health budget allocation of $10 million USD to support capacity building & renovations and an additional $7 million USD to purchase equipment.

Implementing Tools to Measure Impact
The NEST360 quality improvement team developed the NEST360 Implementation Tracker (NEST-IT) at the end of 2022. NEST-IT is an online platform that provides a dashboard with key performance metrics, shows progress over time, and shows status against targets, which makes it easier for NEST360 facilities to identify issues for course correction, observe positive trends to inform program implementation, and download paper reports for further discussion. NEST-IT allows for performance monitoring at four levels: 1) the facility; 2) sub-national and country; 3) multi-country; and 4) program.

Creating Leaders and Uplifting Newborn Champions
Our team has co-developed, with the Ministry of Health, a national competence-based mentorship guideline for maternal, newborns, children, and adolescents.

Read more here: nest360.org/tanzania/

Progress towards meeting newborn goals **needs collective impact.**

Improving quality for small and sick newborn care in NEST360-supported countries and beyond requires a systems-change approach that **cuts across all levels of care.**



Systems change should address the multiple clinical needs of the individual patient, ensuring the availability of appropriate and functional equipment and competent staff at facilities across a district and implementing national policies to support overall care.

Our approach includes cross-country activities that support all NEST360 countries in implementing small and sick newborn care through:

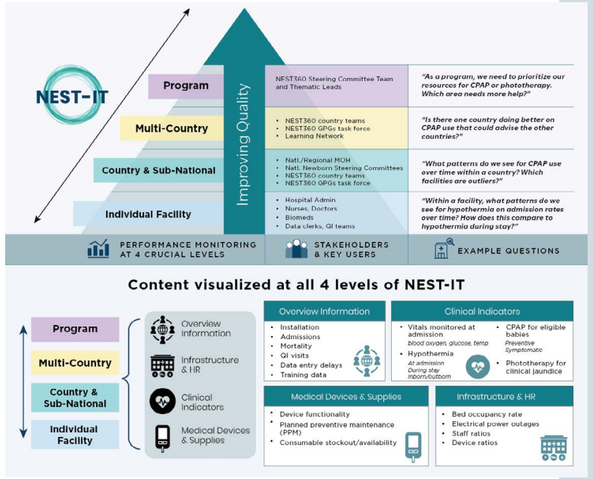
- Using Data for Action, Improving Quality & Learning
- Improving the Education Ecosystem
- Technology Qualification and Innovation

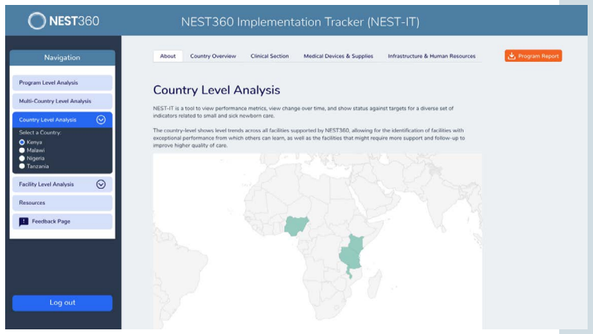


USING DATA FOR ACTION

Through data-driven evidence, tools, and learnings, NEST360 catalyzes sustainable, institutionalized change that improves quality of small and sick newborn care.

Our Data for Action tools track progress toward ending preventable newborn deaths, support data collection and management, and give policymakers, facilities, and clinicians access to facility data that can guide informed decision-making for improving small and sick newborn care in their community.





Improving Quality through Communities of Practice

This past year, we refined our quality improvement (QI) tools and processes for the end user in all four NEST360 countries. We led quarterly QI visits to each facility alongside the Quality Improvement Directorates within the Ministries of Health. To ensure that these QI visits were met with action, we launched Community of Practice (CoP) platforms in each country. The Community of Practice meetings are data-driven, using facility data to guide discussion and action. Representatives from each facility came together every quarter to exchange ideas, learn from each other, and implement action to improve the quality of care.

Implementing a Tracker to Monitor Small and Sick Newborn Care (NEST-IT)

Recognizing the need to look beyond facility and country-level data and more effectively monitor implementation at a multi-country and program-wide level, we began developing the NEST360 Implementation Tracker (NEST-IT) at the end of 2022. NEST-IT is an online platform where policymakers, facilities management, and clinicians may download paper reports, display key performance metrics, view progress over time, and review status against targets. The intention is to make it easier for countries and facilities to identify issues for course correction and to identify positive trends to inform program implementation. NEST-IT allows for performance monitoring at four levels: 1) the facility; 2) sub-national and country; 3) multi-country; and 4) program level.

IMPROVING THE EDUCATION ECOSYSTEM

Since 2019, NEST360 worked to develop an ecosystem that prioritizes education for clinicians, biomedical engineers, and future innovators. Over the past year, we have improved and strengthened this education ecosystem by:

Improving Networking Among Clinicians, Nurses, and Biomedical Technicians

Our GIC course was co-developed with multiple Ministries of Health to be an open-source training package for doctors, nurses, clinical officers, and technical staff to learn and practice different ways to teach proper newborn care techniques. The GIC features hands-on learning with equipment and interdisciplinary learning. By learning together, professional silos are broken down, leading to better understanding, respect, and appreciation of each other's roles. Equipping clinical and technical professionals with better teaching and mentoring skills is necessary to establish quality healthcare delivery.



Supporting the Invention Education Learning Network

We launched the inaugural Innovation Technology Landscape, which currently highlights **18 early-stage technologies**—including four newborn health technologies—developed by African innovators in the NEST360 design studios.



Expanding the reach of the Implementation Toolkit for Small and Sick Newborn Care

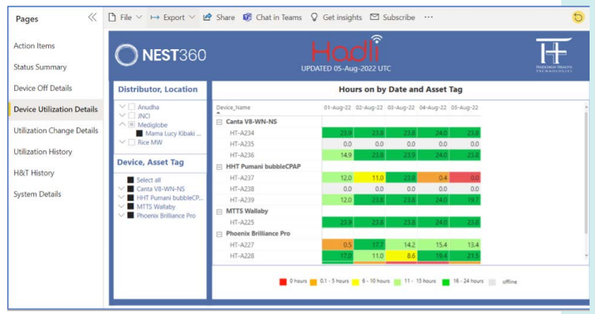
Since 2021, the NEST360 | UNICEF co-created Implementation Toolkit has brought together readings, tools, and learnings and provided a comprehensive online resource for those implementing small and sick newborn care in their countries. In 2022, we expanded the scope and content of the toolkit to include a learning network that disseminates content through webinars, communities of practice and newsletters. In partnership with Chiesi Foundation, we also made the toolkit accessible in French.



TECHNOLOGY QUALIFICATION AND INNOVATION

Our approach ensures the availability of quality-tested newborn care equipment with the right training and maintenance at the right cost.







NEST360 Qualified Technologies

This past year, we added five new NEST360-qualified devices in three categories – bilirubinometer, hemoglobinometer, and syringe pump. NEST360-qualified devices now total 23 products across 11 product categories. We use an eight-step process to evaluate technology for newborn care in low-resource settings. Rigorous performance and usability testing is conducted on devices that are available for purchase and have regulatory approval.

Technology Management and Distribution

Our partner, Hatch Technologies, provides comprehensive distribution and support services for high-quality medical devices designed for newborn care units throughout sub-Saharan Africa. In 2022, Hatch distributed over 800 devices to over 140 facilities.

NEST360 Newborn Technology Landscape, 9th Edition

The Newborn Technology Landscape serves as a compendium of newborn healthcare technologies, both commercially available and in development, suitable for use in resource limited settings.

"Supporting innovation in healthcare is essential to achieving optimal health outcomes for newborns. Nurses and midwives have unique expertise and have an important role in informing innovative healthcare policy."

- Professor Address Mauakowa Malata,
Vice Chancellor of the Malawi University of Science and Technology



Pictured above: a return demo on newborn resuscitation from a clinical training.



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