



NEST360 Qualified Technologies for Newborn Care in Low-Resource Settings

The following **25 technologies** across **12 newborn product categories** that provide newborn care in low-resource settings^[3] are currently qualified by NEST360.

nest360.org/technology

Product Category	Product Name*
Syringe Pump	Mindray BeneFusion SP3
Bilirubinometer	BiliDx Bilirubinometer Calmark AB Neo-Bilirubin
Phototherapy	MTTS Colibri MTTs Firefly Phoenix Brilliance Pro
Glucometer	Nova StatStrip Glucose Hospital Meter System Nova StatStrip Xpress2
Hemoglobinometer	EKF Diaspect™ HemoCue 201+
CPAP	Diamedica UK Baby CPAP 10 Pumani bubbleCPAP
Flow Splitter	CAIRE Chart SureFlow Oxygen Flow Station Canta Flow Splitter Longfian Oxygen 5-way Flow Splitter
Oxygen Concentrator	Canta V8-WN-NS CAIRE Airsep NewLife Intensity 10 Longfian Jay-10 Dual Flow
Pulse Oximeter	Acare Lifebox Bistos BT-710 Mindray PM-60
Suction Pump	3A Aspeed Professional
Radiant Warmer	MTTS Wallaby Phoenix NWS-101
Continuous Temp Monitor	Celsi Monitor

*Product names listed in alphabetical order

What is “NEST360 Qualified” and how are technologies qualified by NEST360? NEST360 evaluates technologies for Level 2 newborn care plus respiratory support including CPAP in low-resource settings^[3] using the eight-step process described below. The technology qualification process is ongoing and updated as new technologies are commercialized. Technologies are considered “[NEST360 Qualified](#)” if they meet pre-defined performance metrics in each step.

Step 1 – Identify Medical Device Needs:

World Health Organization and national guidelines are used to recommend product categories to support Level 2 Newborn Care including CPAP.

Step 2 – Define Target Product Profiles:

Expert stakeholders from medical and research communities familiar with low-resource settings define minimal and optimal device performance characteristics available as [Newborn Target Product Profiles \(TPPs\)](#).

Step 3 – Identify Candidate Technologies:

Desk research identifies newborn technologies currently on the market or in development that may meet the TPPs^[1]. Most technologies are highlighted in the [Newborn Technology Landscape](#).

Step 4 – Evaluate Candidate Technologies:

Publicly available materials are used to rank technologies against TPP characteristics. To date, twelve TPP product categories^[2] have multiple commercially available options.

Step 5 – Technical Testing:

Technical performance of candidate technologies is tested under laboratory conditions.

Step 6 – Environmental Testing:

Candidate technologies are exposed to extreme heat, humidity, dust levels, and voltage surges and sags to determine performance.

Step 7 – Evaluate Usability:

Heuristic evaluations identify major usability concerns and comparative usability evaluations are performed with clinicians and nurses from both high- and low-resource settings to capture end user needs across all candidate technologies.

Step 8 – Qualify Technologies:

Technologies that pass evaluations are designated as “NEST-qualified.” NEST-qualified technologies come from various manufacturers and are considered suitable to provide effective newborn care in low-resource settings.

^[1] 14 Product Categories: Syringe Pump, Bilirubinometer, Phototherapy, Glucometer, Hemoglobinometer, CPAP, Flow Splitter, Oxygen Concentrator, Pulse Oximeter, Respiratory Rate / Apnea Monitor, Suction Pump, Radiant Warmer, Temperature Monitor, Conductive Warmer

^[2] Twelve Product Categories with devices that are currently NEST360 Qualified: Syringe Pump, Bilirubinometer, Phototherapy, Glucometer, Hemoglobinometer, CPAP, Flow Splitter, Oxygen Concentrator, Pulse Oximeter, Suction Pump, Radiant Warmer, Continuous Temperature Monitor

^[3] The equipment required at each level of newborn care and is based on the [WHO Roadmap on: Human resource strategies to improve newborn care in health facilities in low and middle-income countries](#), 14-16. Geneva: World Health Organization; 2020, and [WHO Standards for improving the quality of care for small and sick newborns in health facilities](#). World Health Organization. Geneva; 2020. Licence: CC BY-NC-SA 3.0 IGO.

Details regarding full device evaluations are available in the following peer-reviewed publication; Asma, E. (2023). [Avoid equipment graveyards: rigorous process to improve identification and procurement of effective, affordable, and usable newborn devices in low-resource hospital settings](#). BMC Pediatrics. [bit.ly/n360-suppl](https://doi.org/10.1186/s12874-023-01411-1)