



NEST360 Qualified Technologies for Newborn Care in Low-Resource Settings

The following **29 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	AccuCheck Active AccuCheck Guide AccuCheck Instant AccuCheck Performa Nova StatStrip Glucose Hospital Meter System Nova StatStrip Xpress2
Hemoglobinometer	DiaSpect Tm (EKF) HemoCue® Hb 201+ System
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/s12874-023-01431-1)