



# NEST360 QUALIFIED TECHNOLOGIES FOR NEWBORN CARE IN LOW-RESOURCE SETTINGS

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The following **23 technologies** across **11 newborn product categories** that provide Level 2 newborn care in low-resource settings<sup>[3]</sup> are currently qualified by NEST360.

Product Category	Product Name*	*Product names listed in alphabetical order
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   Cantu 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	
Suction Pump	3A Asped Professional	
Radiant Warmer	MTTS Wallaby   Phoenix NWS-101	

**What is “NEST360 Qualified” and how are technologies qualified by NEST360?** NEST360 evaluates technologies for Level 2 newborn care in low-resource settings<sup>[3]</sup> using the five step process described below. Technologies are considered “NEST360 Qualified” if they meet pre-defined performance metrics in each step.

## Step 1 – Identification:

NEST360 performs desk research to identify newborn technologies that are currently on the market or that are in development across 14 product categories<sup>[1]</sup>. This includes reviewing technologies listed in the [Newborn Technology Landscape](#), which is updated every six months.

## Step 2 – Alignment with Target Product Profile:

Technologies are compared against the [Newborn Target Product Profiles \(TPPs\)](#), matching characteristics defined in the TPPs to the comparable characteristics outlined in the manufacturer’s package inserts and other publicly available materials. Each technology is ranked according to the number of characteristics that meet optimal or minimal TPP characteristics. Lead candidates within each product category are based on the rankings. To date, an initial set of eleven product categories<sup>[2]</sup> have multiple commercially available options that meet a majority of TPP characteristics.

## Step 3 – Technical Testing:

Technologies that meet a majority of TPP characteristics are then purchased for laboratory measurement of each characteristic in the TPP. To date, two or three technologies were measured within each of the eleven product categories<sup>[2]</sup>, with two units of each technology measured by three unique users.

## Step 4 – Environmental Testing:

Environmental testing is performed on the qualifying technologies exposing the technologies to extreme heat, humidity, and dust levels as well as voltage surges and sags in order to determine which technologies perform under these conditions. Functionality test protocols, which compare performance to baseline technical measurements, are used to assess technologies at discrete points in time throughout each environmental test.

## Step 5 – Usability Testing:

In parallel with technical and environmental testing, comparative usability testing is conducted on each technology with at least five unique users (nurses) in the United States and in Malawi, respectively. Users are asked to perform a series of tasks with each technology after watching a brief instructional video. Metrics measured include efficiency, effectiveness, and satisfaction, with each user ultimately identifying a preferred technology.

<sup>[1]</sup> 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

<sup>[2]</sup> Eleven 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

<sup>[3]</sup> 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. Licence: CC BY-NC-SA 3.0 IGO.