

EVERY NEWBORN DATA REPORT CARD

MEASURING CARE FOR SMALL AND SICK NEWBORNS

What do we want to measure and why?

The day of birth is the most vulnerable day in the human lifecycle, with 1 million newborns dying on their birthday, and 2.7 million babies dying during the first month of life. The main causes of death and disability include direct complications of prematurity (36%), intrapartum events (previously called birth asphyxia) (23%), and infections (23%). Millions of babies become sick and require inpatient hospital care with skilled nurses and appropriate equipment. The highest risk is for 15 million born preterm (before 37 weeks gestation), and especially for those born before 32 weeks who may stay in hospital for several weeks.

Ending preventable newborn deaths, plus improving child development, is dependent on timely and high-quality care for these small and sick newborns. The *Every Newborn Action Plan* (ENAP) highlighted the high impact from quality hospital-based care, with potential to save more than half a million lives a year. Yet there are major gaps for reaching families in the highest burden countries, and an important measurement gap.

For 15 years, obstetric care has had clear definitions for basic and comprehensive emergency obstetric care, enabling assessments of a single facility, a whole region, or country to be compared. This aids health ministries and managers to plan programmes, advocate for staff and equipment, and promote accountability structures within the health system. Similarly, care for small and sick newborns must be provided at different health system levels and with varying complexity, both for staff (especially midwives and neonatal nurses) and for equipment.

Figure 1: Evidence-based interventions for small and sick newborns, from basic to more complex care

More complex care		<ul style="list-style-type: none">• Specialised follow up of high risk infants (including preterm)• Treatment and screening for retinopathy of prematurity• Blood transfusion• Mechanical/assisted ventilation, including intubation• Continuous positive airway pressure (CPAP)
		<ul style="list-style-type: none">• Kangaroo mother care for $\leq 2000\text{g}$, especially preterm babies, including follow up• Assisted feeding (including cup feeding, nasogastric feeding)• Safe administration of oxygen• Injectable antibiotics for neonatal infection• Intravenous fluids• Management of hypoglycaemia• Effective phototherapy• Seizure management
		<ul style="list-style-type: none">• Essential newborn care (drying, skin-to-skin contact of the newborn with the mother, delayed cord clamping, hygienic cord care, Vitamin K, eye care and vaccinations)• Thermal protection• Early initiation and support for exclusive breastfeeding• Neonatal resuscitation• Prevention of mother to child transmission of HIV

What can we measure now?

Even in high-income countries with widely available neonatal intensive care, standardised measures of coverage and quality are lacking. In most low- and many middle-income countries, care for small and sick newborns is being scaled up, but not tracked by routine health management systems. Health facility assessments (HFA) may be used to periodically capture information from a nationally representative sample of facilities on service readiness (such as staff, infrastructure, equipment, and service delivery). Several widely-used health facility assessment survey tools exist:

- **SPA** = Service Provision Assessment led by the Demographic Health Survey (DHS) programme: a comprehensive tool for monitoring readiness and availability of all main health programmes in a country's formal health care system.
- **SARA** = Service Availability and Readiness Assessments led by WHO: a more compact tool that can collect data more rapidly, to measure service readiness on select indicators for all main health programmes.
- **EmONC** = Emergency Obstetric and Newborn Care assessments, led by Averting Maternal Death & Disability (AMDD) and United Nations Population Fund (UNFPA) to measure ability to provide emergency obstetric "signal functions" (selected interventions to avert the main causes of obstetric death and disability).

While several newborn indicators are included in each tool, the assessments do not generate comparable data and fail to capture the more complex interventions required for small and sick newborns. The size and cost of these assessments limits their frequency, and as a result health programmes face gaps in timely data for planning and routine monitoring of service delivery.

What will *Every Newborn* metrics research tell us?

As part of the *Every Newborn* Measurement Improvement Roadmap, new research has been prioritised to enable standardised and more feasible routine measurement for care for small and sick newborns. This research is coordinated for *Every Newborn* by London School of Hygiene & Tropical Medicine (LSHTM) with WHO, Saving Newborn Lives/Save the Children, Averting Maternal Death and Disability (AMDD), UNICEF, UNFPA and USAID. The work is organised under two themes:

Theme A. Process for defining WHAT to measure:

A process is underway to inform which interventions are needed at different levels of the health system for inpatient care of small and sick newborns, and what components are necessary to deliver this care. Building from the WHO evidence-based guidelines, this process includes:

- Detailing structural characteristics: Creating and agreeing on the minimum structural characteristics (infrastructure, equipment, providers, and drugs) for facility readiness to deliver the evidence-based interventions (Figure 1).
- Harmonising indicators: The structural characteristics required to deliver inpatient care are extensive and there are many different indicators. Sentinel indicators of service readiness should be harmonised, and “signal functions” for levels of care prioritised.
- Consulting experts on signal functions: A global survey to assist in the prioritisation of signal functions has been developed and is open until August 2017 available in English, Spanish and French: www.healthynewbornnetwork.org/resource/enap-metrics-cards
- Finalising norms and standards: Under the mandate of WHO, guidelines and levels of care for small and sick newborns revised and made widely available.

Theme B. Evaluating HOW to measure care for small and sick newborns:

The ongoing research will inform:

- Standardised tool and minimal content to measure: To evaluate the status of the existing measurement tools to capture service readiness for inpatient care of small and sick newborns, we have reviewed three widely-used tools (SPA, SARA, EmONC). We have compared the content of these tools to the long list of ingredients to measure. There are many gaps, especially for more complex care. A core module will be developed, piloted and made widely available.
- Exploration of alternative data collection approaches: How do different data sources such as routine health management information systems compare in terms of accuracy and feasibility to gather data?
 - o Data from the recent EmONC assessment in Malawi will be compared with the Malawian national health management information system.
 - o Qualitative interviews will be carried out with health workers at various levels to assess data collection workload, barriers and enablers to data collection and utility for quality improvement and programme planning in Malawi.

More information

Visit Healthy Newborn Network for more information, references and data sources at healthynewbornnetwork.org

Key resources: Inpatient care of small and sick newborns: a multi-country analysis of health system bottlenecks and potential solutions: Moxon et al (2015): bmcpregnancychildbirth.biomedcentral.com/articles/10.1186/1471-2393-15-S2-S7

This *Every Newborn* data report card is part of a series available at www.healthynewbornnetwork.org/resource/enap-metrics-cards

UPCOMING IN 2018! State of the World's newborns focused on small and sick newborns to be launched, based on a multicountry situational analysis led by Every Premie-SCALE, with support from USAID.

Published in June, 2017. For more information contact enapmetrics@lshtm.ac.uk

Take action

Please contribute your wisdom and fill in the survey on signal functions. Available in English, Spanish and French. www.healthynewbornnetwork.org/resource/enap-metrics-cards

Photo credits: Figure 1 (top to bottom) ©Getty images/Save the Children; ©EFCNI; ©Syane Luntungan/Jhpiego, image below: ©Shutterstock/Kiselev Andrey Valerevicha

