

# CHAPTER 2

## What the numbers say

Professor Joy Lawn,  
London School of Hygiene & Tropical Medicine

@joylawn




## KEY FINDINGS

- 1. SURVIVE:** Survival of small and sick newborns is key for ending millions of preventable child deaths, and meeting SDGs 10 years from now. High quality care could halve in-patient newborn deaths before 2030.
- 2. THRIVE:** Most later disabilities are preventable, by addressing priority conditions, and focusing on small, vulnerable newborns. This is one of the most effective investments in human capital.
- 3. TRANSFORM:** 30 million small & sick newborns worldwide require hospital care each year as part of UHC. Health systems can and must be transformed.



# Global and national targets relevant to small and sick newborns

	<h2>SURVIVE</h2> <p>End preventable deaths</p>	<h2>THRIVE</h2> <p>Ensure health, growth and development</p>	<h2>TRANSFORM</h2> <p>Expand enabling environments</p>
<h3>SDG targets by 2030</h3>	<p><b>SDG 3.2: Survival</b>                      Neonatal mortality rate reduced to <math>\leq 12</math> deaths/1000 live births;                       Under-5 mortality reduced to <math>\leq 25</math> deaths/1000 live births</p>	<p><b>SDG 3 Global Nutrition Plan:</b>                      By 2025, reduce LBW by 30%</p> <p><b>SDG 4.2: Early child development</b>                      Ensure all girls and boys have access to quality early childhood development care and pre-primary education</p>	<p><b>SDG 3.8: Achieve universal health coverage (UHC)</b></p> <p><b>SDG 5: Gender</b>                      Achieve gender equality, empower all women, end gender-based violence</p>
<h3>Which data are needed ?</h3>	<p>Deaths: Mortality rates</p> <p>Equity: Stratified by sex, socio-economic status, urban/rural location, etc.</p>	<p>Birthweight/growth, Gestational age</p> <p>Neonatal morbidity and impairment outcomes</p> <p>Child development measures</p>	<p>Birth &amp; death registration                      Maternal &amp; perinatal death surveillance with response</p> <p>Routine measurement of care:                      Coverage, quality, service readiness, financial protection</p>

Sources: SDGs, Every Newborn, Every Newborn Measurement Improvement Roadmap

KEY FINDINGS

# 1. SURVIVE: Ending preventable newborn deaths



## Each year...

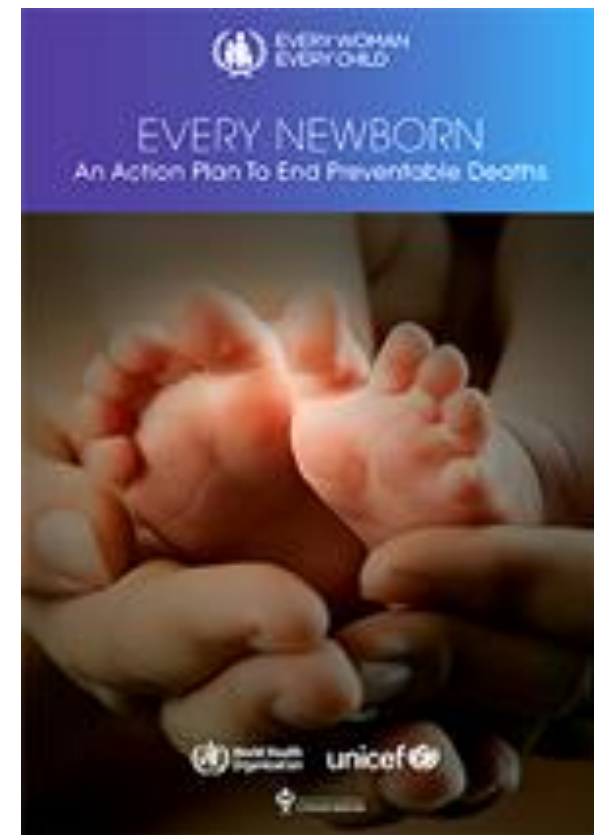
- 2.5 million newborns die within the first 28 days of life
- 2.6 million are stillborn

## Targets for 2030

**Every Newborn Action Plan** aims to end preventable deaths, setting the first ever specific mortality targets:

- $\leq 12$  neonatal deaths per 1000 live births
- $\leq 12$  stillbirths per 1000 total births

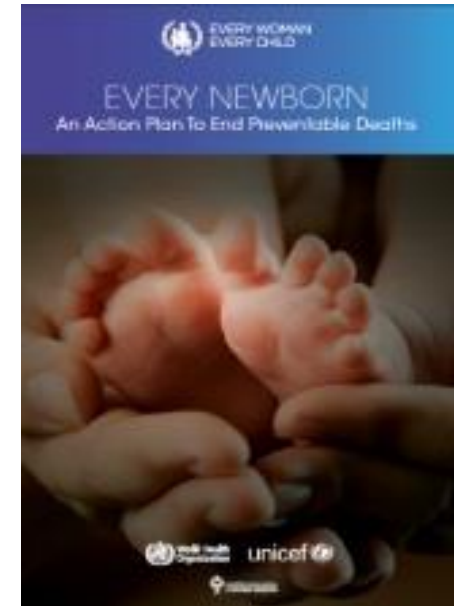
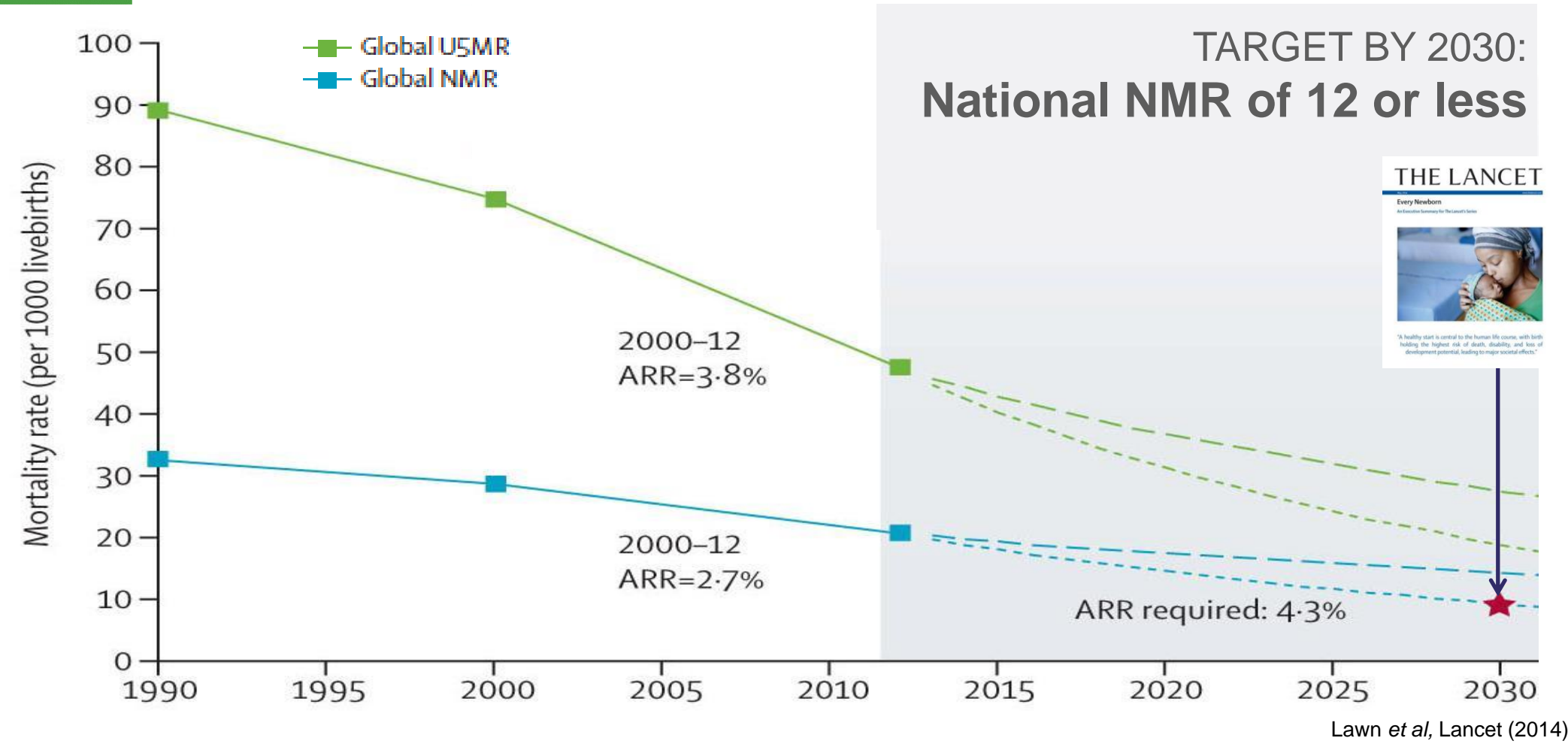
Neonatal target was included in SDGs. **First time ever!!**  
Stillbirths not included, yet also deserve more attention.



**99% of these deaths happen in low- and middle-income countries, especially for the poorest families BUT almost all are preventable.**

# Target 3.2 Ending preventable child & newborn deaths

First ever global target for newborn survival in SDGs



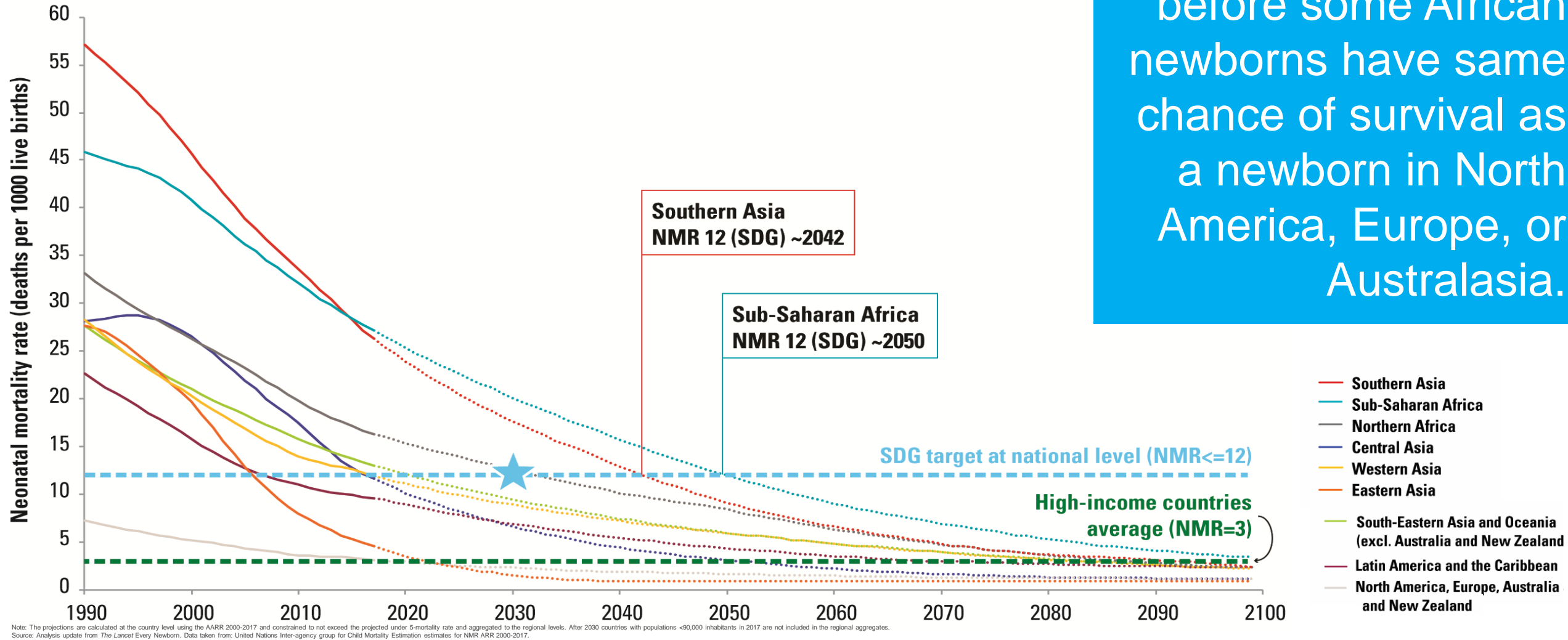
**78** high burden countries have set newborn targets.

**>90** countries implementing action plan.

**~40 countries need to double current progress**

# WHERE? Regional progress

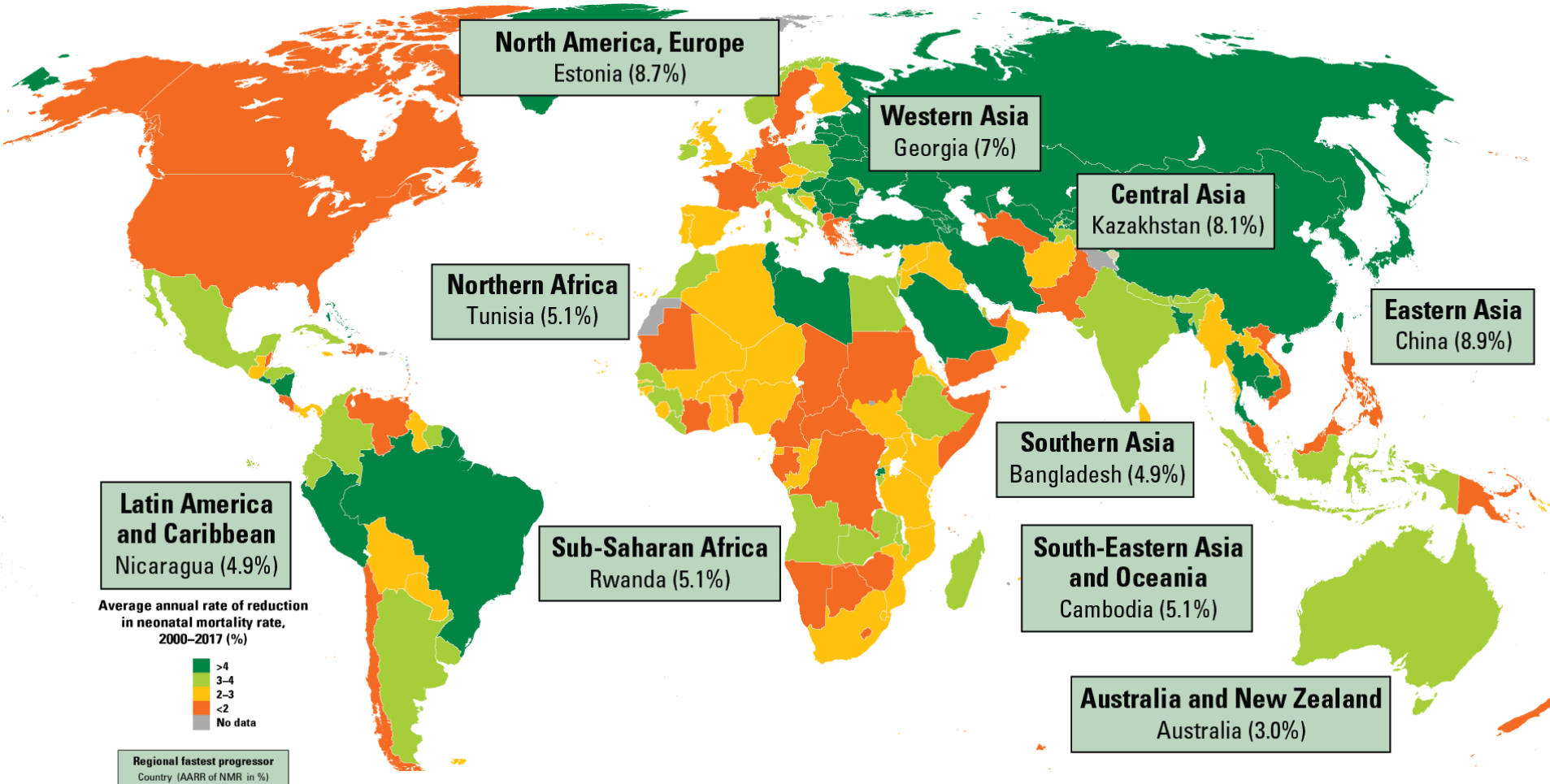
Projected date per region to reach **SDG NMR national target of 12** & to reach average **NMR for high-income countries of 3**



With same progress, it will be **next century** before some African newborns have same chance of survival as a newborn in North America, Europe, or Australasia.

Note: The projections are calculated at the country level using the AARR 2000-2017 and constrained to not exceed the projected under-5-mortality rate and aggregated to the regional levels. After 2030 countries with populations <90,000 inhabitants in 2017 are not included in the regional aggregates. Source: Analysis update from The Lancet Every Newborn. Data taken from: United Nations Inter-agency group for Child Mortality Estimation: estimates for NMR ARR 2000-2017.

# WHERE? National progress to reach newborn target by 2030



**10 fastest progressors globally**

COUNTRY	AARR of NMR
1 China	8.9%
2 Estonia	8.7%
3 Belarus	8.2%
4 Kazakhstan	8.1%
5 Georgia	7.0%
6 Latvia	7.0%
7 Turkey	6.9%
8 Saudi Arabia	6.4%
9 Azerbaijan	6.2%
10 Russian Federation	6.2%

**Every region has fast progressors for newborn survival – scale up of hospital newborn care.**

**Humanitarian contexts: highest rates, slowest progress. Some countries will meet SDG 3.2 over 100 years too late.**



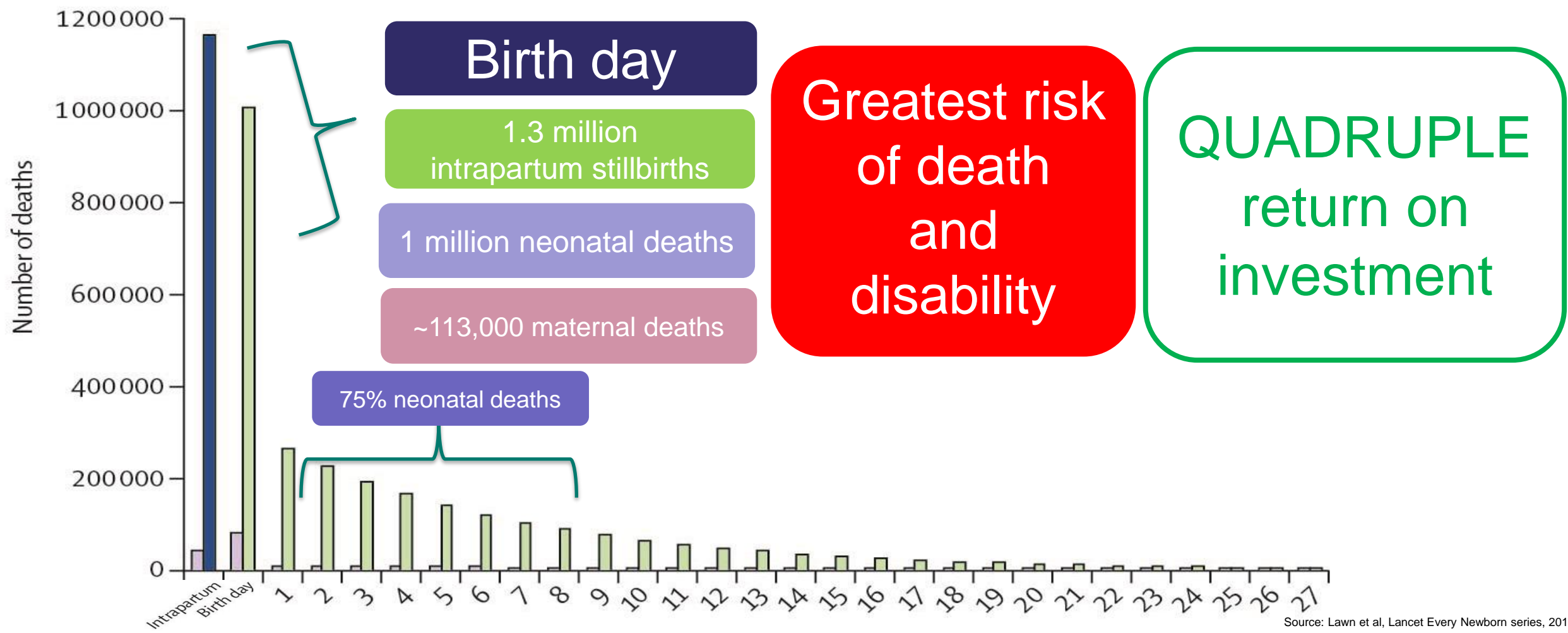
# Estimated effects of lower health care coverage during COVID-19

118 countries using LiST modelling based on lower coverage for 6 months

<b>Coverage of care</b>	<b>Maternal deaths excess</b>	<b>Newborn &amp; child deaths excess</b>
↓ 15% reduction	12,190	253,500
↓ 45% reduction	56,700	1,157,000
<b>Biggest effects on deaths</b>	<b>Care at birth</b>	<b>Inpatient care for sick newborns, child infections, Increased prevalence of wasting (immunization key but herd immunity initially protective)</b>

Roberton T et al Early estimates of the indirect effects of the coronavirus pandemic on maternal + child mortality in LMIC. Lancet GH, 2020

# WHEN? Highest risk for women and newborns..



“The two most important days in your life are the day you are born ... and the day you find out why.” *Mark Twain (1835-1910)*

## WHO to focus on?

### Boys or girls?

- Baby boys have biologically higher risk of death in neonatal period
- Girls are at increased social risk in some cultures

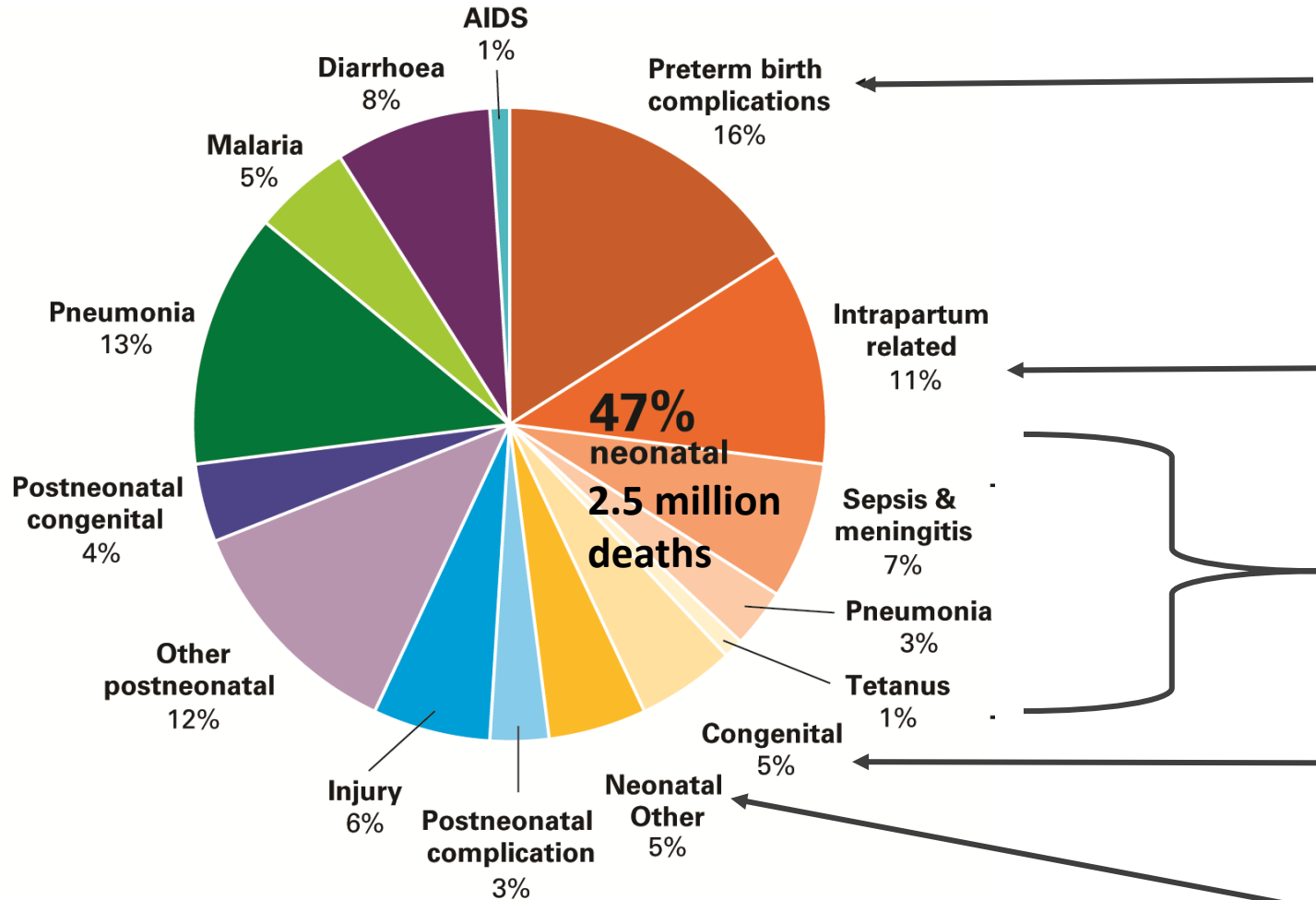
### Small newborns, big problem

- 80% neonatal deaths are in vulnerable low birthweight newborns (< 2500g)
  - 2/3<sup>rds</sup> are preterm
  - 1/3 are small for gestational age



# WHICH conditions to focus on?

Causes of death in children under 5 years of age for 195 countries



**1. Preterm birth** top cause of CHILD deaths + important cause of disability and loss of human capital



**2. Birth complications**

**3. Neonatal infections:**  
~600,000 deaths per year  
Yet a black box for aetiology

**4. Congenital conditions**

**5. Neonatal jaundice**

Source: Analysis update from *The Lancet Every Newborn* (6). Source: Data from WHO estimates for 196 Observatory (16). Updated analyses for 2016 by Shefali Oza with Joy Lawn. NMRs from United Nations I



## WHERE to focus?

- Globally, ~ 80% of all births occur in hospitals, with quality gaps causing over 1 million preventable newborns deaths every year

KEY FINDINGS

## 2. THRIVE: Ensuring health and well-being for every newborn



## Major loss of human capital

- The world loses substantial human capital due to newborn deaths, disability.
- Neonatal conditions account for 7.5% of global total of DALYs  
3x that of AIDS, similar to all cancers  
(Global Burden of Disease 2017)
- Under-recognized social, economic, emotional burden on parents and families caring for small and sick newborns, or if their child dies



National economic development will be like swimming against the tide unless address newborn health, growth and development, in the 1<sup>st</sup> 1000 days

# Small babies affect Lifelong & intergenerational health

**Fetal health and growth** plus early-life environmental influences in 1<sup>st</sup> 1000 days are important for stunting, sub-optimal child development, adult risk of non-communicable diseases (NCDs).

½ of the world's low birth weight (LBW) babies are born in South Asia, driving the NCD epidemic.

To date, limited success in any country for reducing LBW – need more innovation for promoting fetal growth and maternal health (intergenerational)

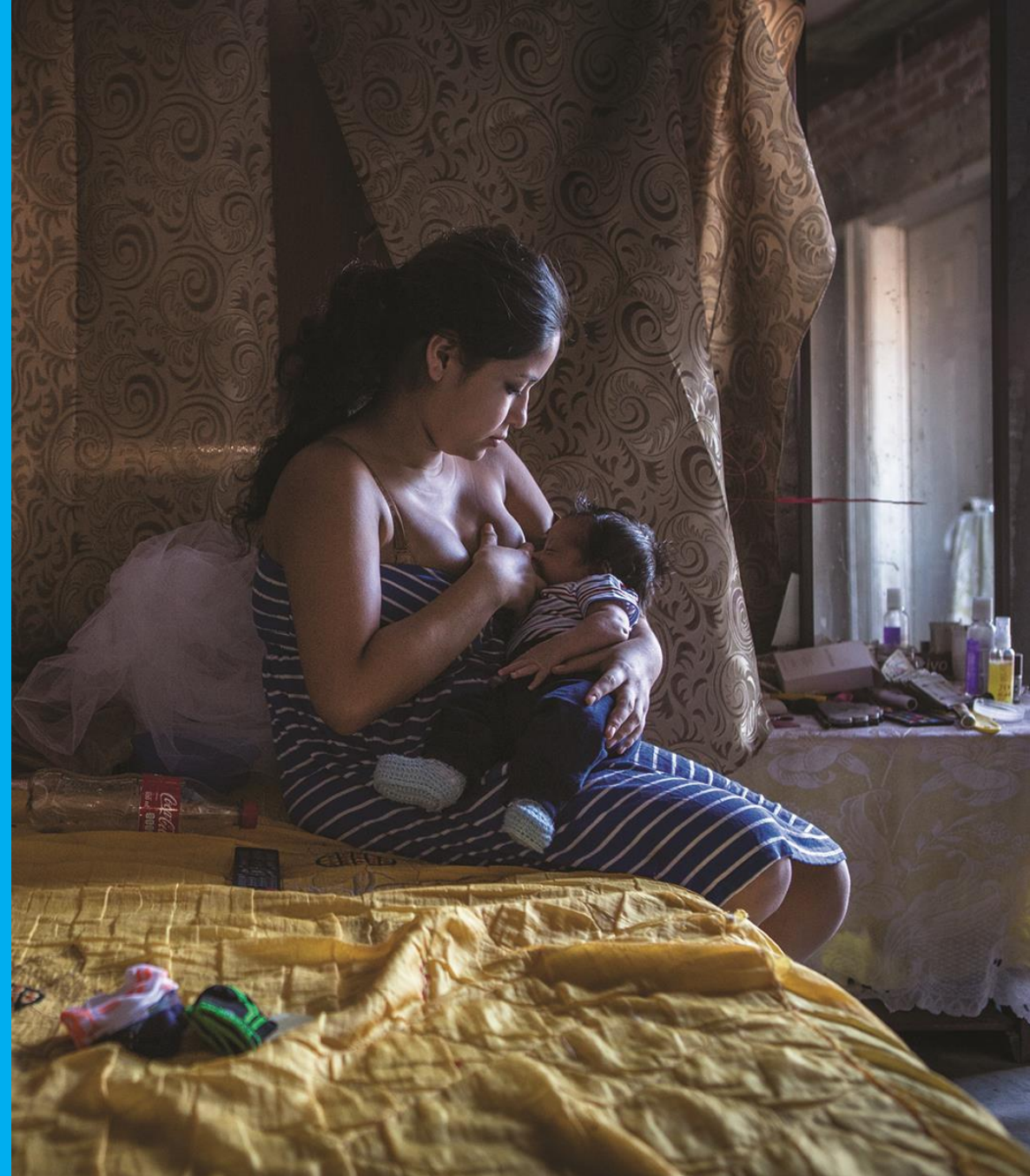
Key to measure **birthweight** AND **gestational age**.  
Also to measure and prevent disability





KEY FINDINGS

# 3. TRANSFORM: Reaching 30 million small & sick newborns with effective health systems, changing social norms



# The world you are born into determines your risk of death and disability



High income countries  
~12 million births



**140 million births  
per year**



Upper middle income countries  
~39 million births

Low- & middle-income countries



~44 million births at home

Low- & middle-income countries



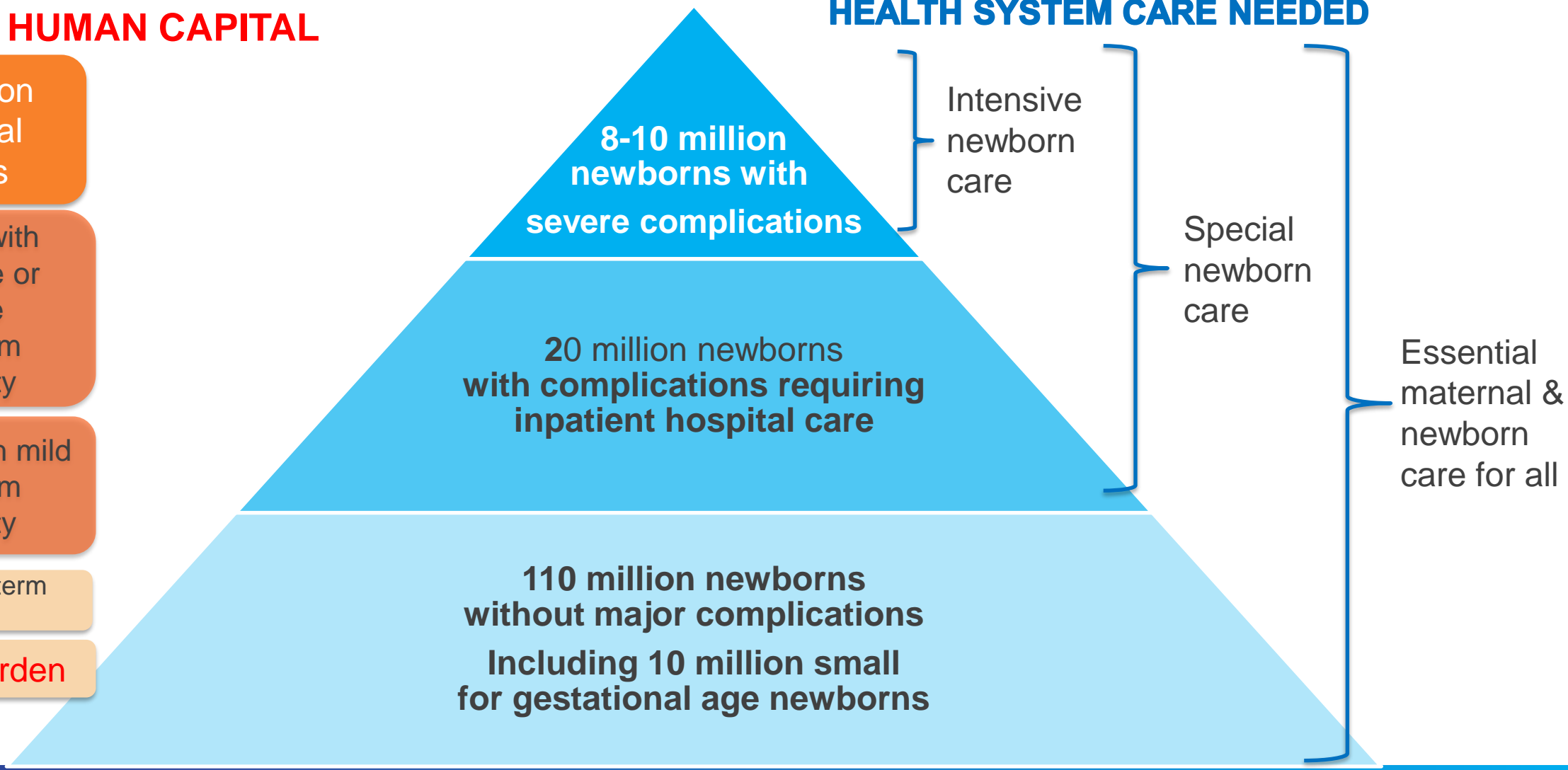
~45 million facility births

# Health system responses for small and sick newborns by level of care, with their impact on human capital

## LOSS OF HUMAN CAPITAL

- 2.5 million neonatal deaths
- Millions with moderate or severe long term disability
- Millions with mild long term disability
- Other long term effects
- Parent burden

## HEALTH SYSTEM CARE NEEDED



## A PARENT'S STORY


Once prohibited from touching her baby, this mother now advocates for family-centred care in Hungary

*“The worst part is that I could not touch my son... I felt like I could not do anything for him... I brought my milk to the hospital. I was so proud of what I had pumped...My son’s nurse said, ‘You can’t give him milk with your pre-eclampsia medication.’ And then she poured the milk down the sink. Soon after my milk dried up.”*

-Lívía Nagy Bonnard, paediatric nurse



Lívía with son Edouard after birth (L) and age 12 (R)



As well as transforming health & information systems, we need to challenge social norms.

**It is no longer acceptable that newborns are born just to die.**

Holding funerals, providing bereavement support to families and making sure every birth and every death have certificates is part of changing these norms.

## Into action...

- **Urgency:** 10 years to meet SDGs yet risk of losing hard-won gains due to COVID-19 pandemic. Newborns are the most vulnerable when health systems are stretched.
- **Return on investment:** Major returns in terms of reduced deaths, disability, and improved human capital, avoiding catastrophic costs for parents & families.
- **Achievable:** Special and intensive newborn care could halve newborn deaths in hospitals, and respiratory support for preterm babies is essential to get to the SDG target of 12 deaths per 1000 live births.
- **Data for action:** We need to use the data we have, but we need more data on coverage, equity and quality of care to drive more rapid change.



# More information and national data

@joylawn | @MARCH\_LSHTM



## THE LANCET

Every Newborn



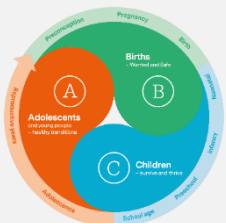
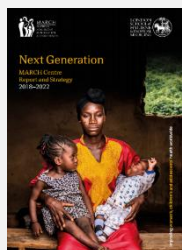
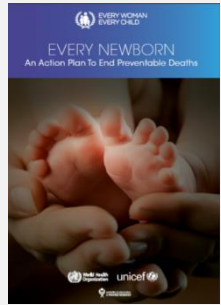
"A healthy start is central to the human life course, with birth holding the highest risk of death, disability, and loss of development potential, leading to major societal effects."

## THE LANCET

Ending preventable stillbirths



"The Lancet Commission on Stillbirths and Infant Mortality Reduction (SIMR) has published its report, 'Ending preventable stillbirths and infant mortality: key messages for action', on 14 November 2012."



## LANCET EVERY NEWBORN

<http://www.thelancet.com/series/everynewborn>

## LANCET ENDING PREVENTABLE STILLBIRTHS

## EVERY NEWBORN ACTION PLAN

[www.everynewborn.org](http://www.everynewborn.org)

## SURVIVE THRIVE Report

[https://www.who.int/maternal\\_child\\_adolescent/documents/care-small-sick-newborns-survive-thrive/en](https://www.who.int/maternal_child_adolescent/documents/care-small-sick-newborns-survive-thrive/en)

## BEYOND SURVIVAL

<http://www.nature.com/pr/journal/v74/n1/s/index.html>

## LANCET MATERNAL HEALTH

## LANCET MIDWIFERY



**MARCH**  
MATERNAL  
ADOLESCENT  
REPRODUCTIVE  
& CHILD HEALTH

LONDON  
SCHOOL OF  
HYGIENE  
& TROPICAL  
MEDICINE



## Every Newborn

[www.everynewborn.org](http://www.everynewborn.org)  
[www.Healthynewborn.org](http://www.Healthynewborn.org)

#EveryNewborn

## World Prematurity Day 17<sup>th</sup> November



#worldprematurityday

WorldPrematurityDay

## DATA REFERENCE SOURCES

WHO <http://www.who.int/gho/publications/en/>

UNICEF <https://data.unicef.org/>

COUNTDOWN TO 2030  
<http://countdown2030.org/>

IHME <http://www.healthdata.org/>

## MARCH Centre

London School Hygiene & Tropical Medicine

<http://march.lshtm.ac.uk/>

## Acknowledgments

### Authors for Chapter 2

*Joy Lawn, Vivienne Chai, Shefali Oza, Uduak Okomo, Khalid Yunis, Pablo Duran, Ashish KC, Hannah Blencowe, Gagan Gupta*

### Managing Editors for the Report

Lily Kak, Joy Lawn, Ornella Lincetto, Gina Murphy, Judith Robb-McCord, Nabila Zaka

### PowerPoint slides and graphics

Stefanie Kong, Kayley LeFaiver

Overall >94 authors and experts from all over the world have input and all are appreciated!



# AGENDA – Session 1

Facilitator: Dr. Ornella Lincetto, Senior Medical Officer, WHO

- Introduction to the webinar series and the speakers – Dr. Ornella Lincetto, WHO
- Key findings for ‘What the numbers say’, Chapter 2 of *Survive & Thrive* report – Prof. Joy Lawn, Director of MARC Centre, London School of Hygiene & Tropical Medicine
- Progress for neonatal survival in Nepal through an equity lens – Dr. Ashish K.C, paediatrician and researcher, University of Uppsala, Sweden
- Challenges of hospital-acquired infections in a neonatal unit in West Africa – Dr. Uduak Okomo, paediatrician and epidemiologist, MRC Gambia
- COVID-19 in pregnant women and newborns: latest data – Dr. Ornella Lincetto, WHO
- Questions & answers
- Closing, information on next webinar



Dr. Ornella Lincetto



Prof. Joy Lawn



Dr. Ashish K.C



Dr. Uduak Okomo