

The time to act is
now.

Every newborn,
family, and society
has the right to
survive and thrive.



Act now!



Access The Lancet
Series on small
vulnerable newborns

prevents.vn.org

[#SmallVulnerableNewborns](https://twitter.com/SmallVulnerableNewborns)



Small
Vulnerable
Newborn
Consortium

Small Vulnerable Newborns 1

Small vulnerable newborns—big potential for impact

Per Ashorn, Ulla Ashorn, Yvonne Muthiani, Samira Aboubaker, Sufia Askari, Rajiv Bahl, Robert E Black, Nita Dalmiya, Christopher P Duggan, G Justus Hofmeyr, Stephen H Kennedy, Nigel Klein, Joy E Lawn, Jeremy Shiffman, Jonathon Simon, Marleen Temmerman, and the UNICEF–WHO Low Birthweight Estimates Group

Acknowledgements



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THE LANCET

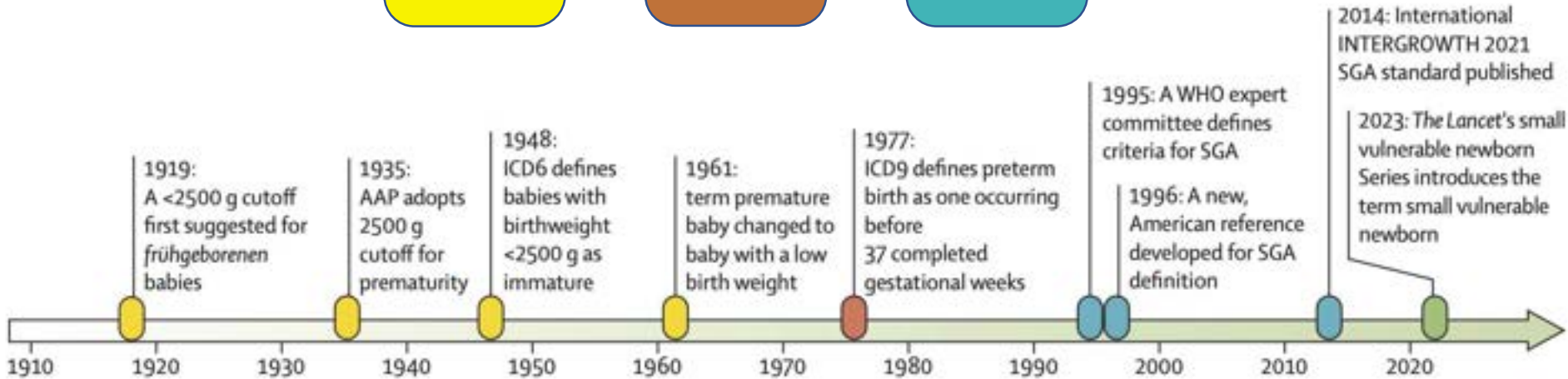


Message 1: Three different constructs for defining newborn vulnerability

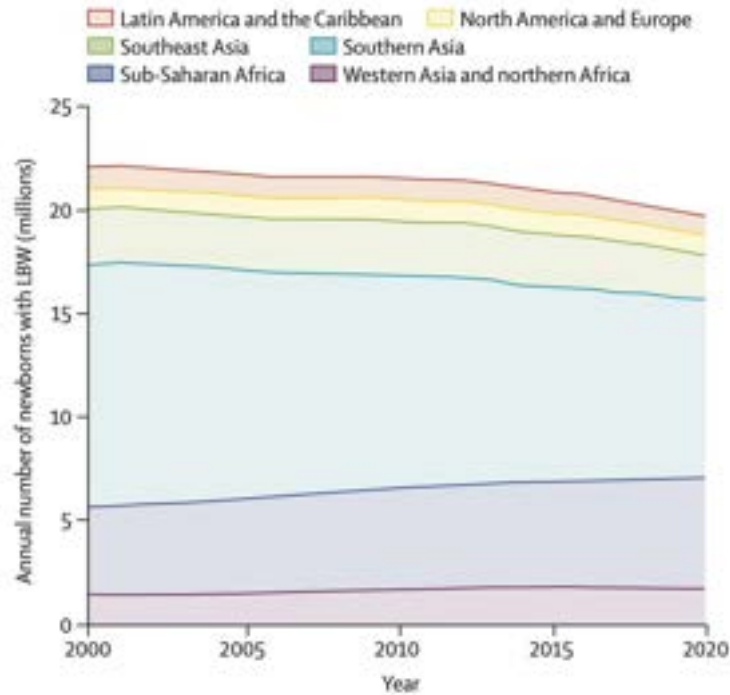
Low birth weight

Preterm birth

Small for gestational age



Message 2: Little progress in LBW prevention, despite multiple global commitments



Estimates by UNICEF and WHO for 194 WHO member states and the occupied Palestinian territory (including east Jerusalem)
Yemisrach Okwaraji, Julia Krasevec, Ellen Bradley, Joel Conkle, Gretchen A Stevens, Giovanna Gatica-Dominguez, Eric O Ohuma, Chris Coffey, Diana Estevez Fernandez, Hannah Blencowe, Ben Kimathi, Ann Beth Moller, Alexandra Lewin, Laith Hussain-Alkhateeb, Nita Dalmiya, Joy E Lawn, Elaine Borghi, Chika Hayashi

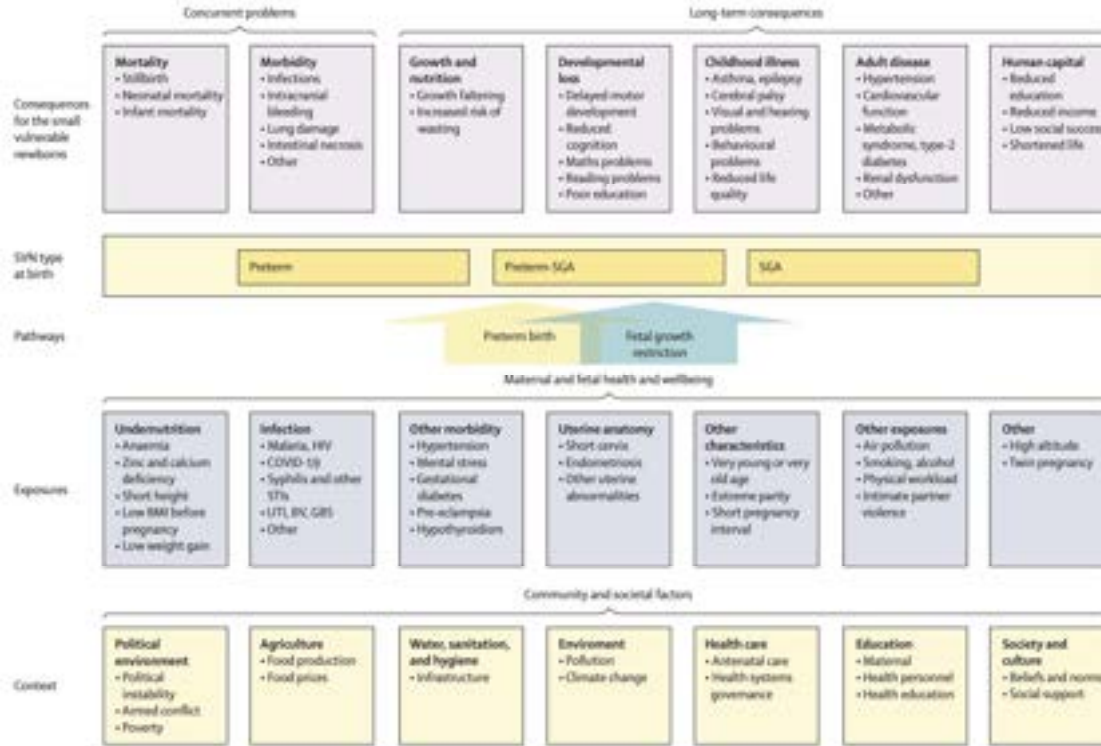
Message 3: Slow progress can be explained by an inadequate response of the global community to four challenges

	Meaning	Status for SVN prevention	Description
Problem definition	Generating evidence-informed consensus within the global health network on the definition of, and best ways to address the problem	Contested*	The three different definitions for adverse birth outcomes compete with each other and complicate a comprehensive synthesis of the problem; improved management, but not prevention, is seen as a priority
Positioning	Framing the issue in a way that moves key actors external to the network to provide resources	Contested	Preterm birth, SGA, and LBW typically positioned individually and only as a medical problem for the newborn; maternal ill health, miscarriages, and stillborn babies are ignored and the life-long effect of SVN and loss of human capital are largely ignored
Coalition-building	Recruitment of allies beyond core members of the global health network	Moderately broad	Every Newborn Action Plan pulled together many partners and led to the formation of multiple international networks, but they involve mainly organisations from the health and health research sector; national governments and actors are under-represented, and SVN and their parents have no voice
Governance	Establishing institutions to facilitate collective action	Largely cohesive	No apparent central guiding forum or institution that brings together primary organisations; only LBW tracked and with a global target

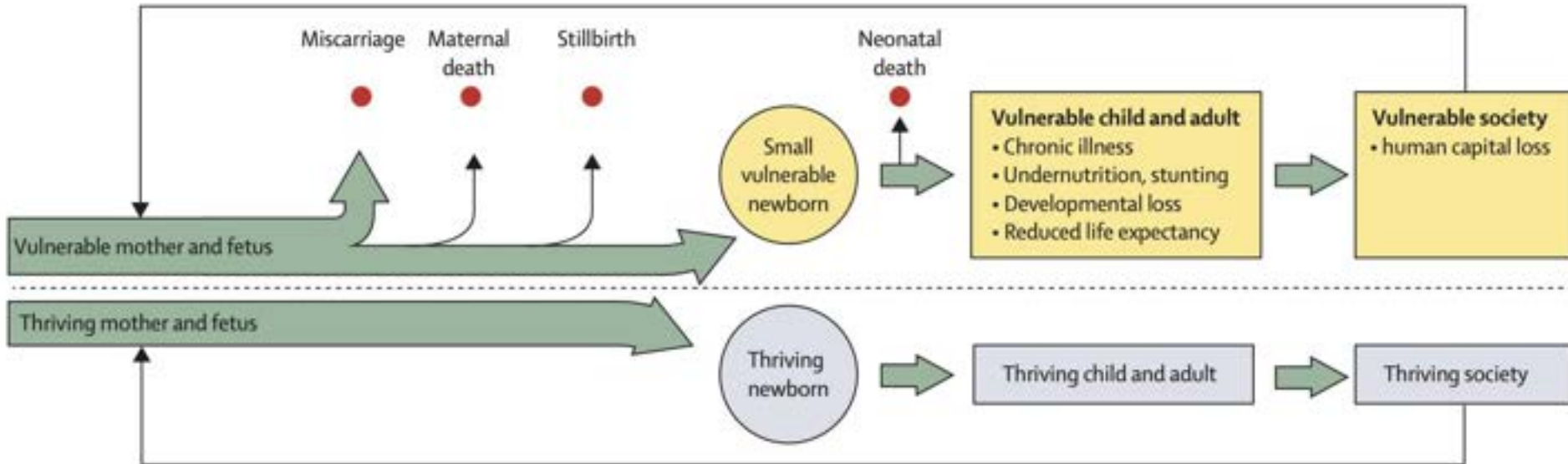
LBW=low birthweight. SGA=small for gestational age. SVN=small vulnerable newborn. * Possible categories for problem definition and preferred solution and for positioning include cohesive, relatively cohesive, and contested. Possible categories for coalition building include broad, moderately broad, and narrow and those for governance include cohesive, largely cohesive, and fragmented. Framework adopted from Shiffman.¹¹¹

Table: Success of global response to main challenges in SVN prevention

Message 4: New framework of Small vulnerable newborns can facilitate a better response



Message 5: Interventions for the health of girls, women, and fetuses, can break the vicious cycle of vulnerability



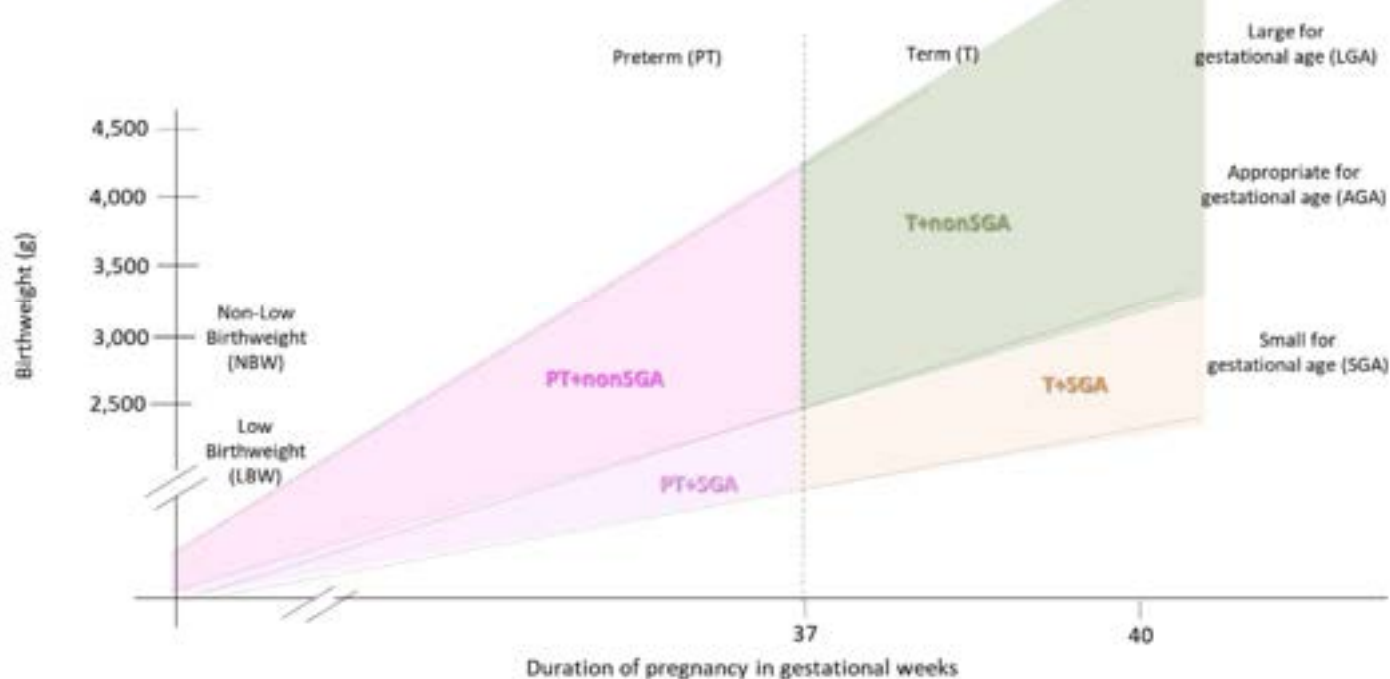
Small babies, big risks: global estimates of prevalence and mortality for vulnerable newborns to accelerate change and improve counting

Joy E Lawn, Eric O Ohuma*, Ellen Bradley, Lorena Suárez Idueta, Elizabeth Hazel, Yemisrach B Okwaraji, Daniel J Erchick, Judith Yargawa, Joanne Katz, Anne C C Lee, Mike Diaz, Mihretab Salasibew, Jennifer Requejo, Chika Hayashi, Ann-Beth Moller, Elaine Borghi, Robert E Black†, Hannah Blencowe†,*

*and The Lancet SVN Steering Committee,
The WHO/UNICEF Preterm Estimates Group,
The National Vulnerable Newborn Group,
The Subnational Vulnerable Newborn Group*

@JoyLawn

Vulnerable newborn types – shifting the paradigm



Input data required (individually linked)

- Birth outcome
- Sex
- Birthweight
- Gestational age

Input data call and searches in 2020

Three distinct small vulnerable newborn types

Preterm non SGA
("Born too soon")

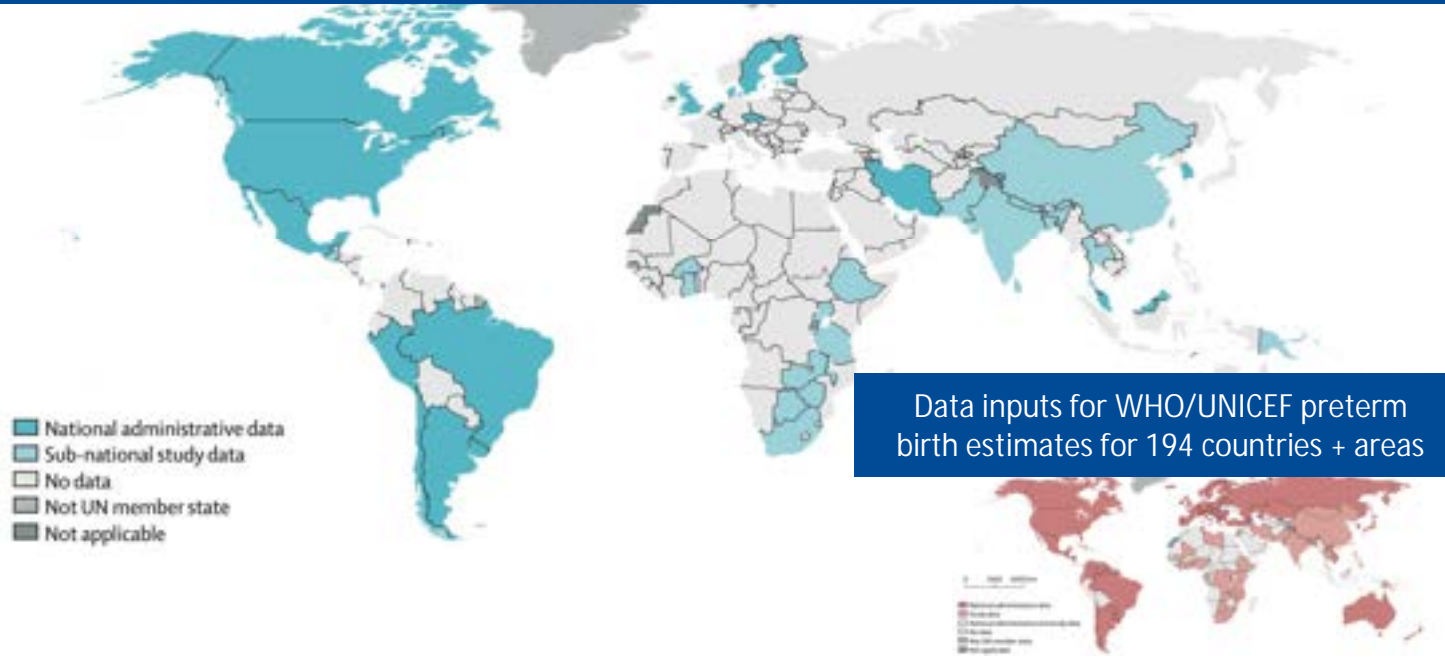
Term SGA
("Born too small")

Preterm SGA
("Too soon and too small")

Vulnerable Newborn Measurement Collaboration

Big data

Pooled dataset for national teams ~160million live births
+ studies ~0.5million

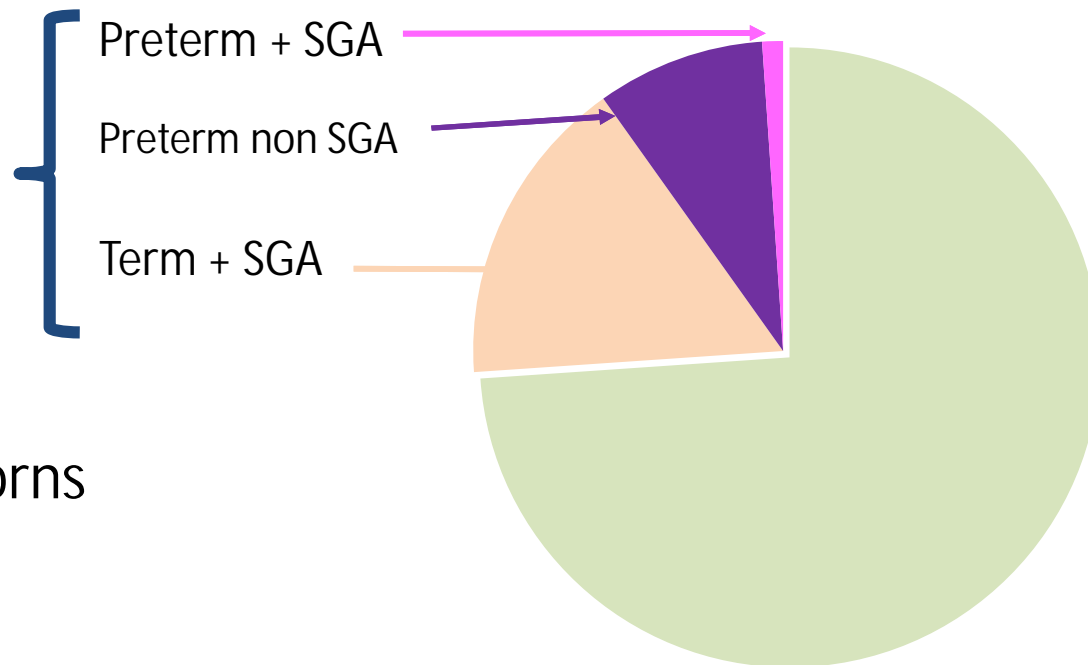


Big authorship group of >250 from National and Study teams

Message 1: Small babies, big numbers

Estimated distribution of small newborn types worldwide for 2020

35.3 million (26.2%)
newborns in 2020 with
any small vulnerable type



One in four of all newborns

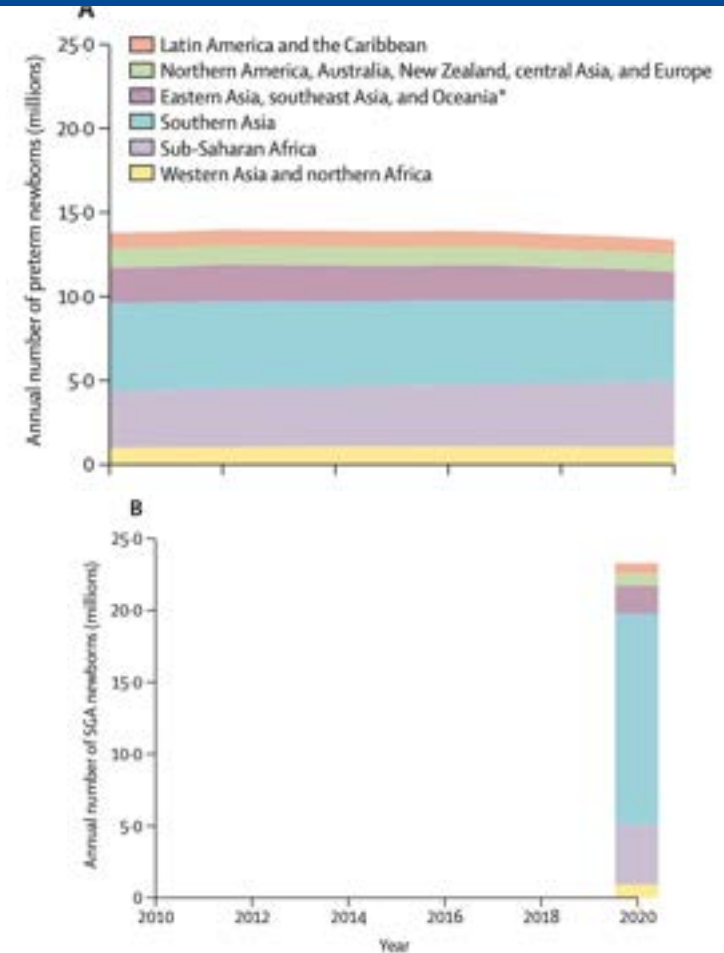
Slow progress for trends

- a. Preterm births estimated numbers by region for 2020, with trends 2010-2020, based on WHO/UNICEF estimates

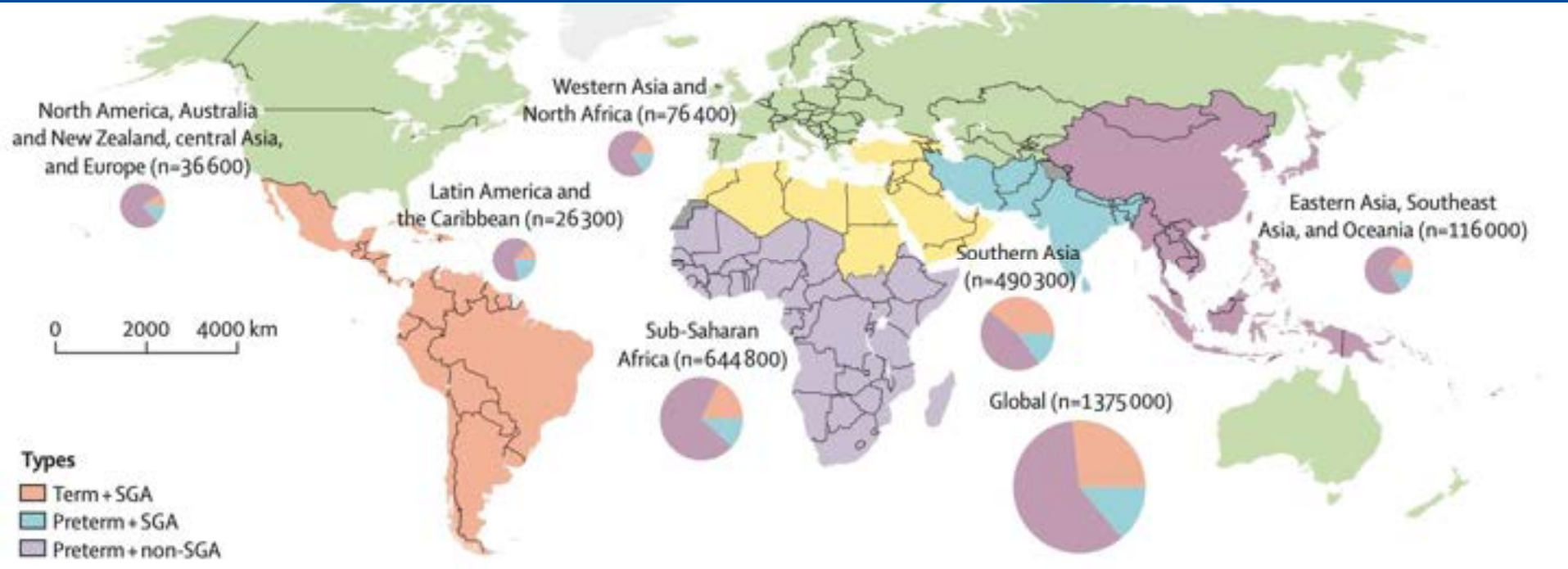
13.4 million preterm births
South Asia and sub Saharan Africa highest rates
10 year trends, no measurable change

- b. SGA estimated numbers by region estimated for 2020 based on individual level datasets

21.9 million SGA births
notably in South Asia.
First global estimate – no trend data

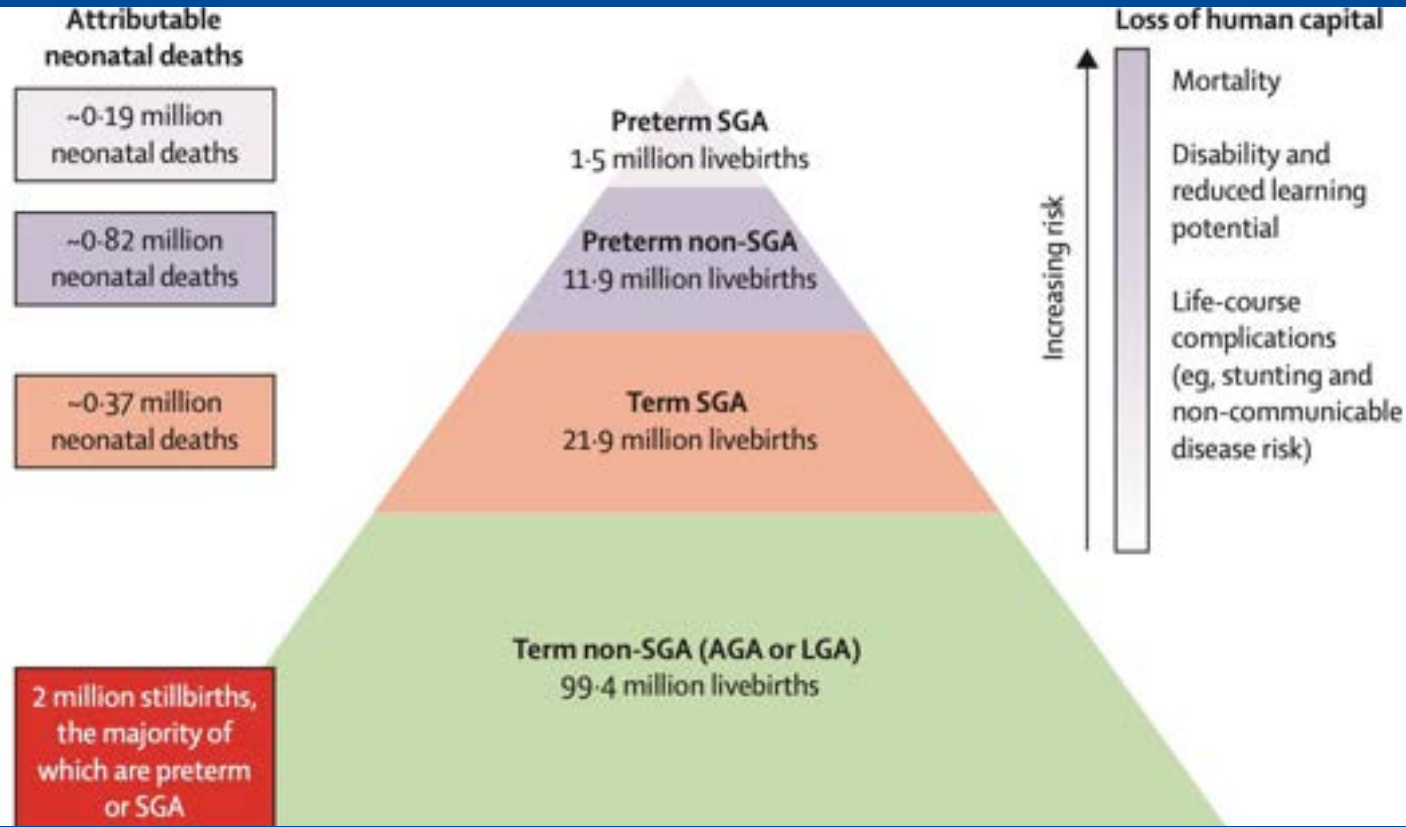


Message 2: Big mortality riskaround the world



80% of the 1.4 million neonatal deaths attributable to SVN types are in Southern Asia and sub Saharan Africa

Message 2: Big mortality risk... informs care needed



Preterm and SGA is the highest mortality risk, but only 1.1% of births
73.4% of the deaths are due to preterm or preterm SGA, and 26.6% to term SGA

Message 3: Stillbirths are more likely to be preterm and small

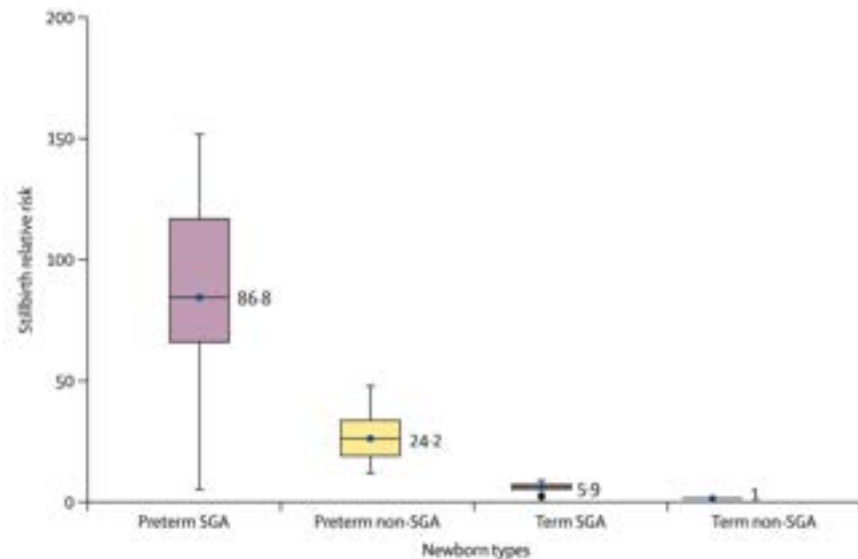
Data inputs

12 countries with national data

N = 605557 stillbirths after 22 weeks

Findings

- 75% of stillbirths born preterm
- ~20% of term stillbirths were SGA
- Most preterm at the most risk, and highest if preterm and SGA



Including stillbirths in relevant indicators and burden assessments is rational to better inform decision making, research and respect the impact on families

Message 4: Counting every newborn... improving and using the data

Data status

194 Countries and areas with national data

- 113 for LBW estimates
- 64 for preterm estimates
- 8 for SGA

Opportunities

- ~90% antenatal coverage
 - increase accurate gestational age measurement
 - increase use of recent GA measurement innovations
- >80% of births are now in facilities
 - increase accurate birth weight measurement
- Investments in national routine data systems

Every pregnant woman able to
access ultrasound

Every baby weighed + counted
(including stillbirths)

Small vulnerable newborn types
classified

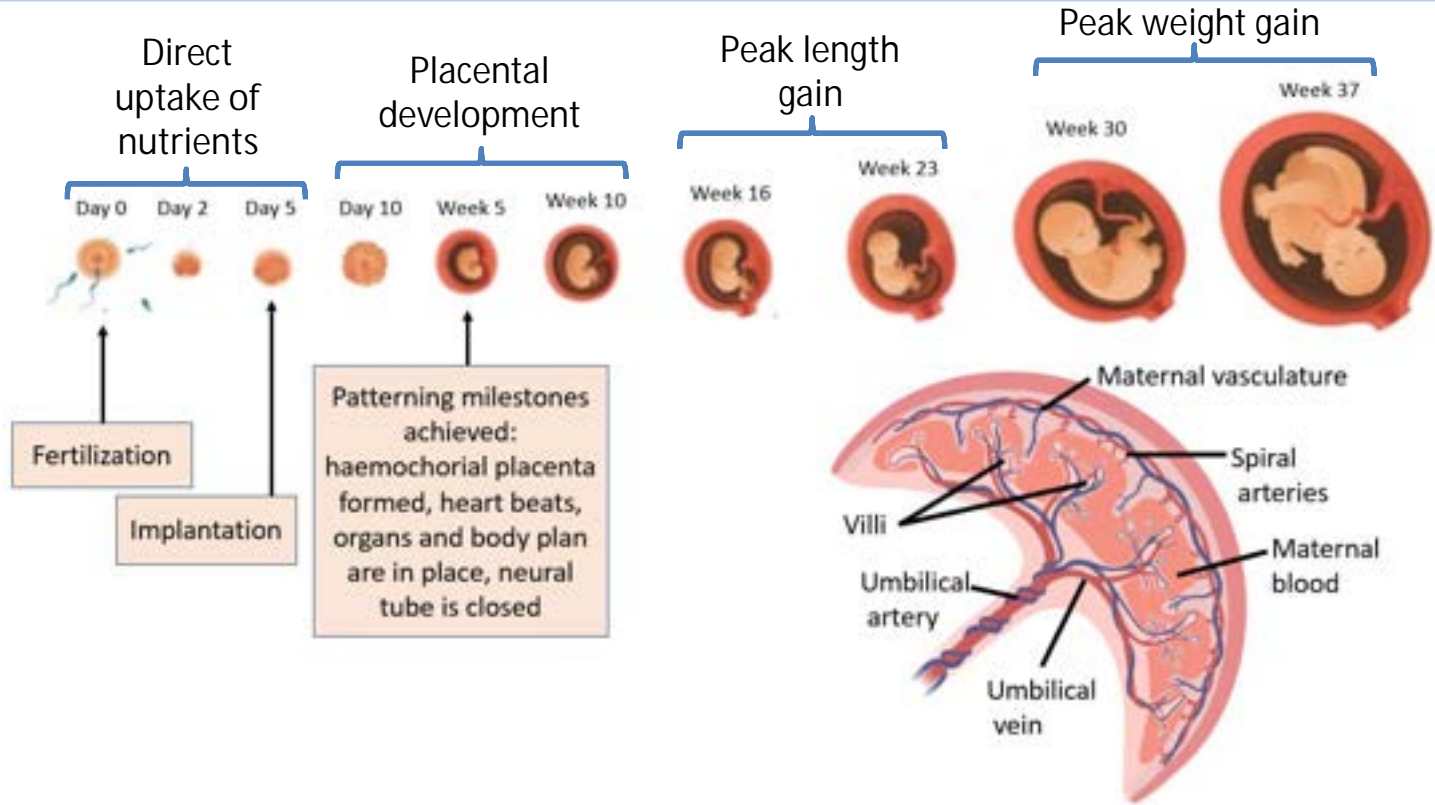
Individual-level data collected
and used for action

Pathways leading to the birth of a small vulnerable newborn

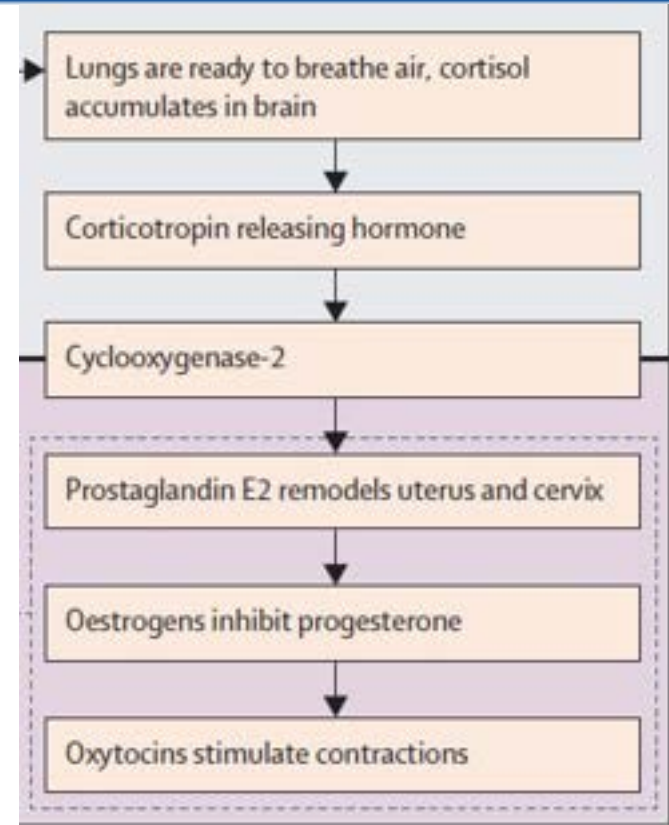
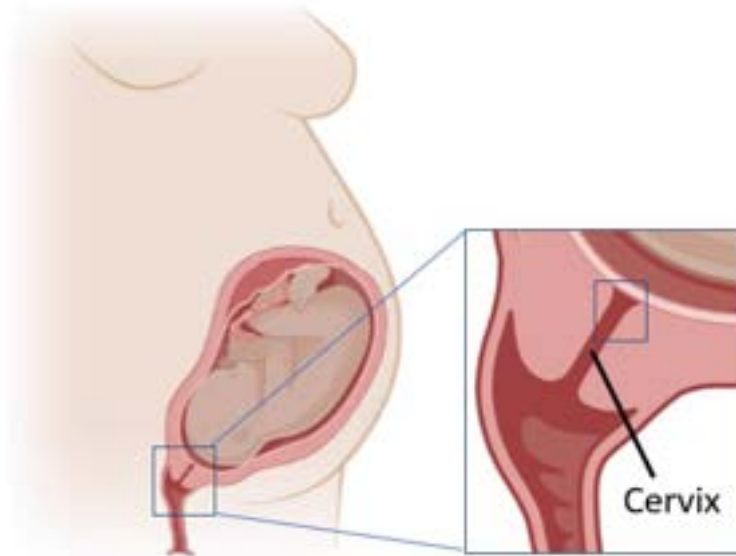
Patricia J Hunter, Toluwase Awoyemi, Adejumoke I Ayede, R Matthew Chico, Anna David, Kathryn G Dewey, Christopher P Duggan, Michael Gravett, Andrew J Prendergast, Usha Ramakrishnan, Per Ashorn, Nigel Klein and members of the Small Vulnerable Newborn Steering Committee

May 9th 2023

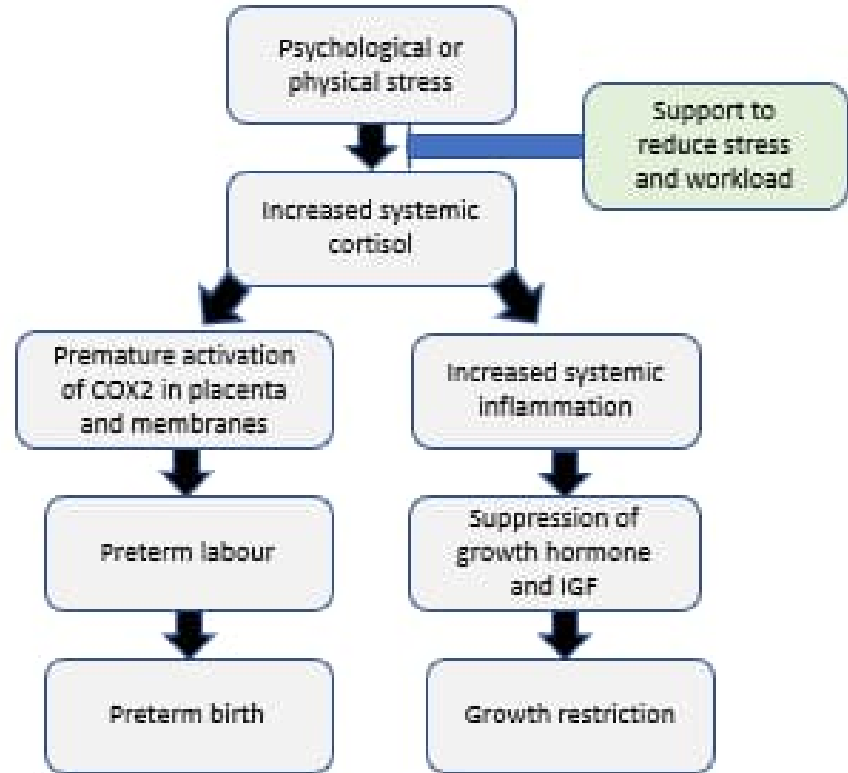
Mechanisms of growth change over time



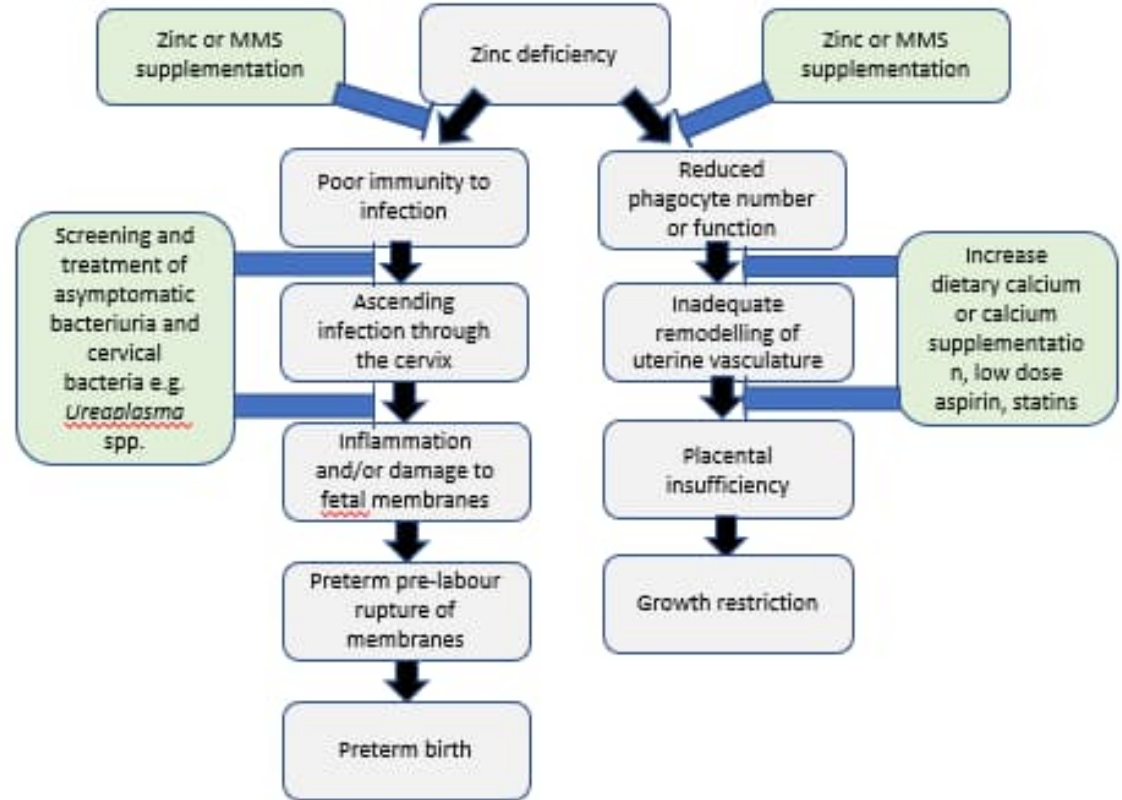
Pregnancy is maintained by suppression of labour and a closed cervix



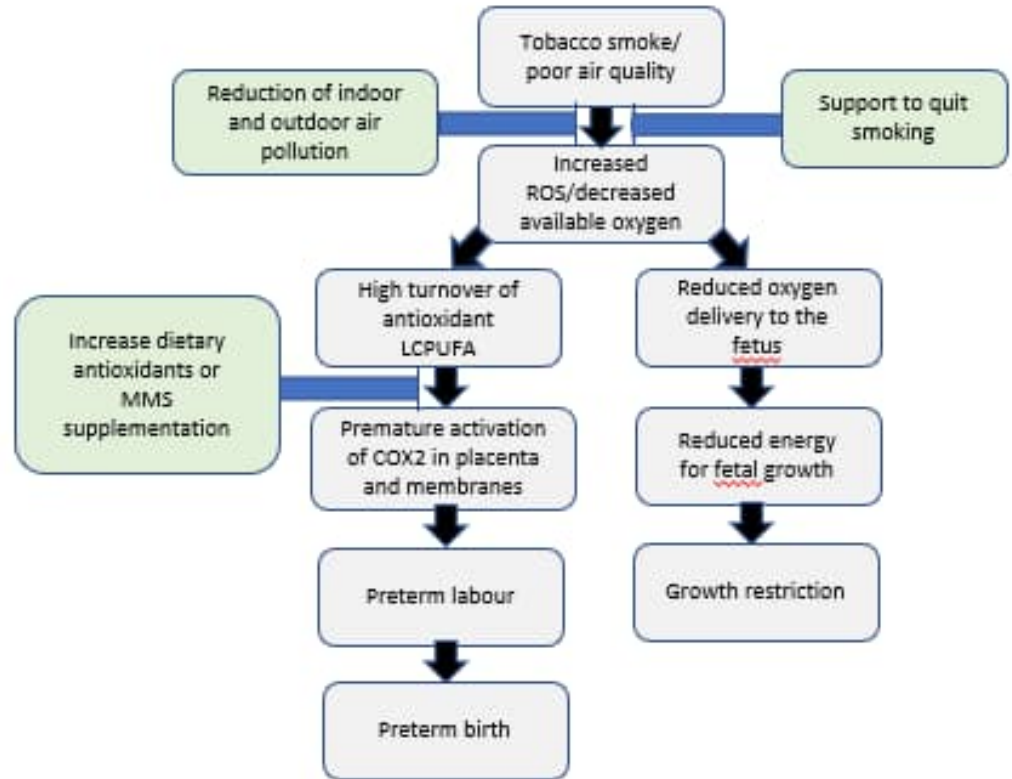
Small vulnerable newborns: same exposures, different mechanisms

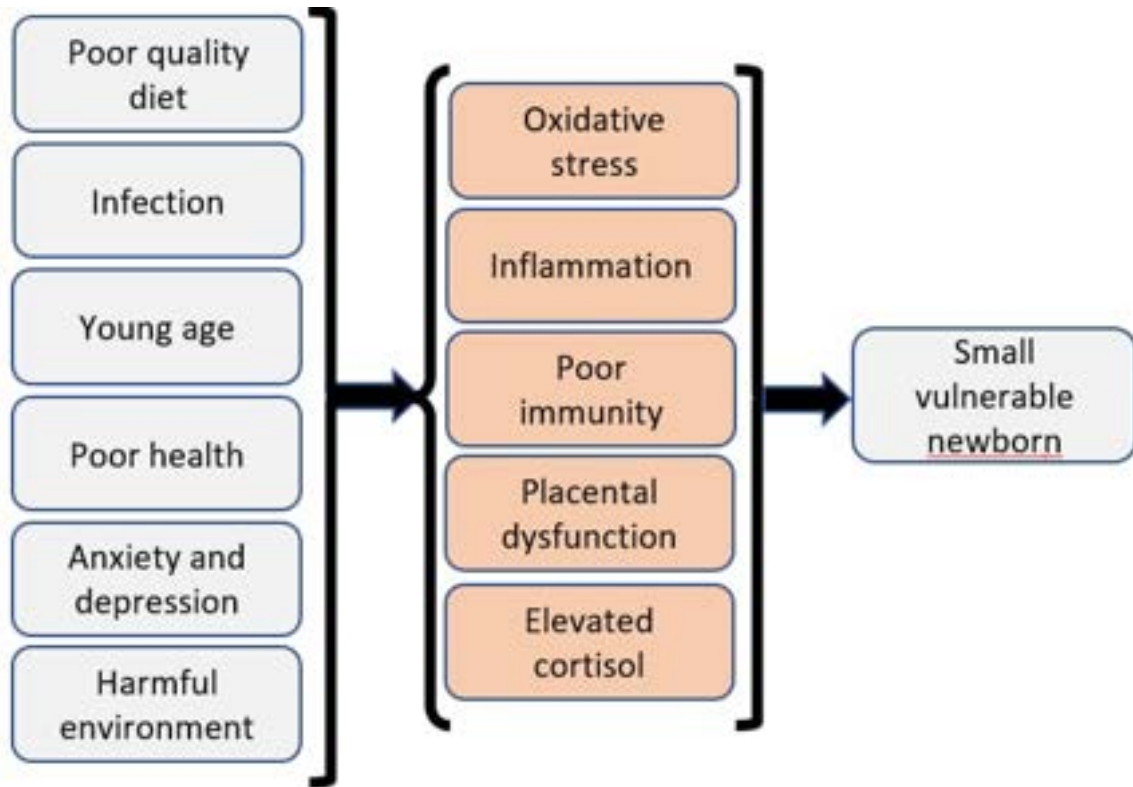


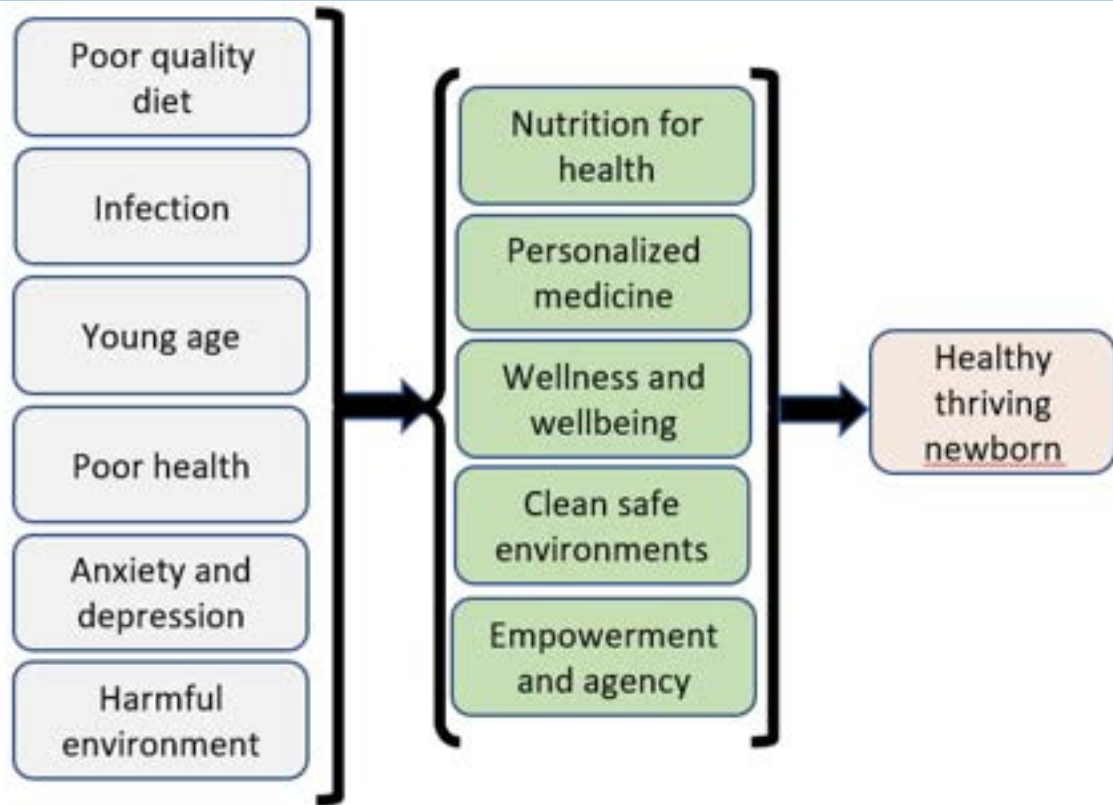
Small vulnerable newborns: same exposures, different mechanisms



Small vulnerable newborns: same exposures, different mechanisms







Evidence-based antenatal interventions to reduce the incidence of small vulnerable newborns and their associated poor outcomes (Paper 4)

G Justus Hofmeyr, Robert E Black, Ewelina Rogozińska, Austin Heuer, Neff Walker, Per Ashorn, Ulla Ashorn, Nita Bhandari, Zulfiqar A Bhutta, Annariina Koivu, Somesh Kumar, Joy E Lawn, Stephen Munjanja, Pieta Näsänen-Gilmore, Doreen Ramogola-Masire, Marleen Temmerman, and the Lancet Small Vulnerable Newborn Steering Committee

9 May 2023

Background and Methods

- WHO recommends eight scheduled antenatal contacts
- This includes routine early ultrasound examination
- We systematically searched for systematic reviews of interventions:
 - reducing preterm, SGA, or LBW births,
 - reducing associated poor outcomes
- We used the Lives Saved Tool (LiST) to estimate the effect on health outcomes, of increased intervention coverage

EFFECTS AND COST OF SCALING UP IN 81 LMIC COUNTRIES IN 2030

						MILLIONS AVERTED ANNUALLY WITH 90% COVER				COST \$ BILLION
Interventions		% Reduction with intervention				SVN BIRTHS	STILL-BIRTHS	NEONAT. DEATHS	STUNTING	
PROVEN		<37w	SGA	LBW	SB/NND					
ALL WOMEN	Screen/treat bacteriurea			37%	9%	5.2m	0.57m	0.48m	4.5m	1.13b
	Screen/treat syphilis	52%		50%	79%					
	Mult. Micronutrient supp.		10%	15%	19%					
SPECIFIC SUB-GROUPS	Low-dose aspirin	11%								
	Energy-protein suppl.		29%	40%	61%					
	Insecticide Rx bednets			23%	32%					
	Progesterone vaginally	8%		18%						
	Smoking interventions			17%						
OUT-COMES	Antenatal corticosteroids				15%					
	Delayed cord clamping				27%					
POTENTIAL (UNPROVEN)						AVERTED WITH PROVEN PLUS POTENTIAL INTERVENTIONS				
ALL	Omega3 Fatty acid suppl.	10%			8%	8.4m	0.57m	0.65m	5.4m	4.15b
SUB-GROUPS	Calcium supplementation	24%								
	Zinc supplementation	13%								

Conclusions

- Scaling up proven interventions in 81 countries in 2030, could avert 0.476 million neonatal deaths at about \$2400 per death (\$1.1 billion per year)
- Scaling up proven and potential interventions could avert 0.652 million neonatal deaths at \$6300 per death (\$4.1 billion)
- Adding effects on post-neonatal mortality and long-term health consequences for survivors would make these interventions even more cost-effective

Millions of vulnerable births are preventable

Prevention of preterm birth, SGA, and LBW is achievable and would have substantial impact:

If fully implemented in low-income and middle-income countries, these eight proven interventions could prevent 5.2 million vulnerable births per year:



SGA = Small for gestational age. LBW = Low birthweight.

[†] Recommended for all women globally; ^{*} Reserved for selected target groups or contexts.

Read the full Lancet Series at: thelancet.com/series/small-vulnerable-newborns

The ethical, economic, and developmental imperative to prevent small vulnerable newborns and stillbirths: essential actions to improve the country and global response.

Abdu Mohiddin, Katherine E A Semrau, Jonathon Simon, Etienne V Langlois, Jeremy Shiffman, Helen Nabwera, G Justus Hofmeyr, Joy E Lawn, Robert E Black, Sufia Askari, Nigel Klein, Ulla Ashorn, Per Ashorn, Marleen Temmerman

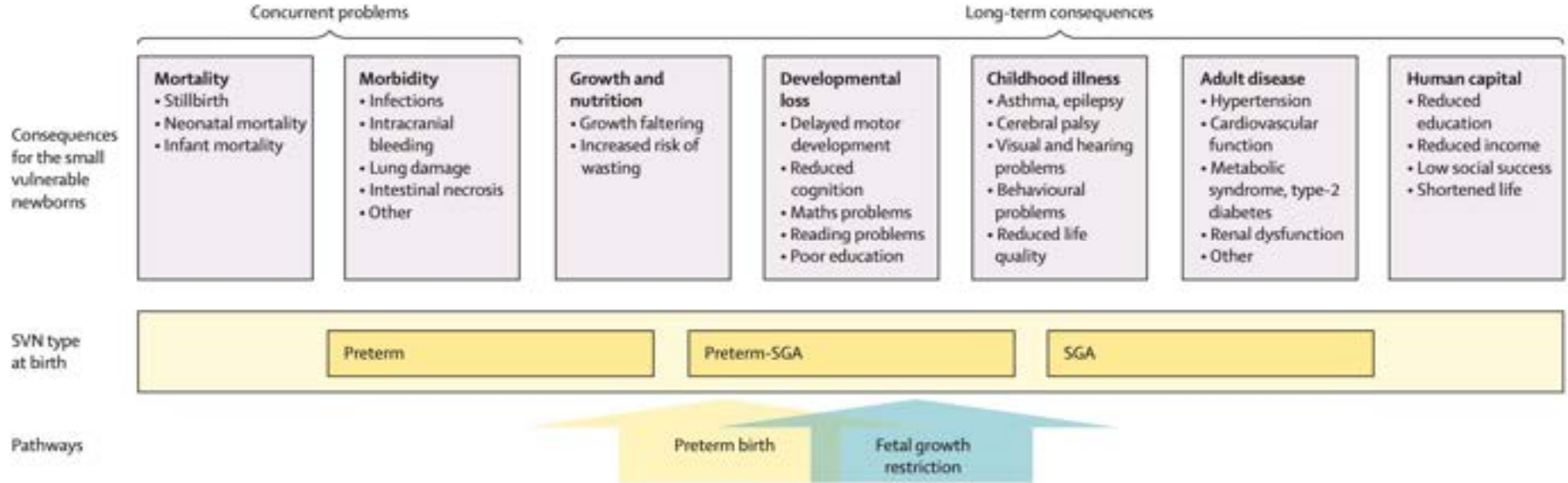
Large prevalence and slow prevention

Global estimate of prevalence of any SVN type:

- 26.2%
- 35 million newborn worldwide

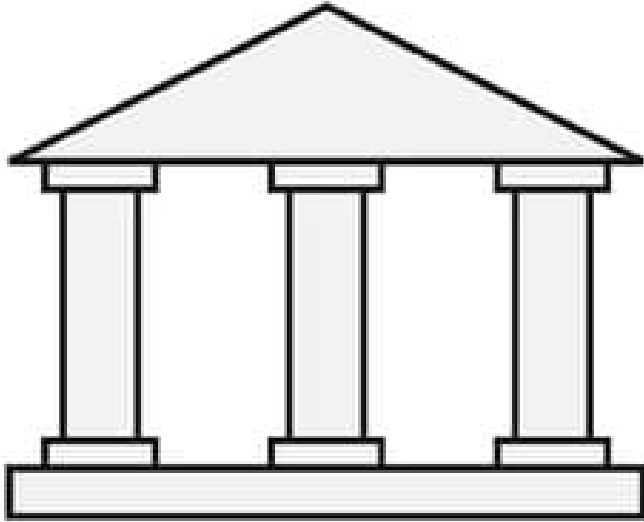
- One in four newborns are SVNs
 - South Asia/SSA, humanitarian settings
- 1.9 million stillbirths each year
- Prevention has been slow
- Flat global and regional trends

Impact big



- The survivors are vulnerable to health problems throughout their life course
- This effect is also intergenerational
- For society: human capital, economic, productivity losses and health-care costs

Action based on three pillars



Pillar One:

- Make SVN prevention a priority

Pillar Two:

- Intervention implementation & scale-up

Pillar Three:

- Measurement and accountability

Pillar One

Problem recognition: make SVN prevention a priority

National action

- Develop or integrate within other national action plans, budget and invest to meet targets and contribute to SDG acceleration

International action

- Update guidelines for SVN prevention, and support context sensitive adaptation

Pillar Two

Intervention implementation: scale up high-quality care for women, particularly during pregnancy and at birth

National action

- Ensure early start of high-quality antenatal and childbirth care for all pregnant women
- Scale up proven interventions integrated with WHO recommended ANC, and include in Universal Health Coverage planning

International action

- Allocate sufficient funding to support national ANC and childbirth programmes
- Increase research investment into potential interventions for SVN prevention

Pillar Three

Increased accountability: improved measurement and monitoring

National action

- Date all pregnancies and weigh all newborns and stillbirths and collate data nationally on rates of preterm birth, and SGA
- Promote societal level action with a multi-sectoral approach using health in all policies, women's agency and reproductive rights

International action

- Improve international statistics and ensure regular reporting on the incidence of different SVN types
- Agree on approaches and a possible governance structure for international support to country activities on SVN and stillbirth prevention

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