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

Published Online
May 8, 2023
https://doi.org/10.1016/S0140-6736(23)00721-3

See Online/Series
https://doi.org/10.1016/S0140-6736(23)00354-9,
https://doi.org/10.1016/S0140-6736(23)00522-6,
https://doi.org/10.1016/S0140-6736(23)00573-1, and
https://doi.org/10.1016/S0140-6736(23)00355-0

Each year, 35 million newborns worldwide are born preterm (<37 weeks of gestation) or small-for-gestational age, and may be low birthweight (<2500 g).[1] These small vulnerable newborns (SVNs) have markedly reduced survival chances, with more than half (55·3%) of the 2·4 million neonatal deaths in 2020 attributed to being a SVN.[1] The survivors are vulnerable to health problems throughout their life course, including poor neurodevelopmental outcomes, low educational achievement, and increased risks of adulthood non-communicable diseases, such as hypertension, ischaemic heart disease, and stroke.[2] Indeed, this effect is also intergenerational. For society, there are important human capital, economic, and productivity losses as well as costs such as health-care related costs.[2]

In addition to one in every four newborns being a SVN, there are 1·9 million stillbirths each year, most of which also are preterm, or have similar SVN profiles.[3] A problem of this magnitude, negatively affecting pregnant women, their babies, families, and the whole society, creates an ethical, economic, and developmental imperative to generate a commensurate response. Primary prevention has been slow so far, but it is possible to reverse flat global and regional trends, using information from the *Lancet* 2023 Small Vulnerable Newborn Series[1,2,4,5] and examples from other successful global health programmes.[6]

We call for action in every country to reduce the number of SVNs and stillbirths, and in support of existing national and international targets, notably Sustainable Development Goal 3 for health and wellbeing, the UN's Global Strategy for Women's, Children's, and Adolescents' Health, and the Every Newborn Action Plan. Action would be based on three pillars: (1) problem recognition, (2) intervention implementation, and (3) measurement and accountability. Under these pillars, there are ten concrete actions for key stakeholders (table). Countries and national governments must lead in implementation, but there is a requirement for international and global investment. The burden of SVN and stillbirth is highest in South Asia and sub-Saharan Africa, and the risks are highest in humanitarian settings such as Afghanistan and South Sudan, and hence activities need to focus in these settings.[1,7] Since all high-income countries are also affected, and have flat-line progress for SVN and stillbirth prevention, this is important in all settings.

Problem recognition means that SVN and stillbirth prevention must be part of global and national health priorities. WHO should update its guidance specifically on SVN and stillbirth prevention and measurement, so that national health systems can use the latest evidence to secure the health and rights of pregnant women and their babies.[8] At country level, there should be regularly updated data on progress towards existing relevant targets, notably for low birthweight reduction because this is a reflection of SVN, and integration into relevant national action plans, and budgets.

The second pillar of SVN prevention involves improvements in the health of girls and women, before and particularly during pregnancy and at birth. Early onset and high coverage antenatal care

	National action	International action
Problem recognition: make SVN prevention a health priority	Develop or integrate within other national action plans, budget and invest to meet targets and contribute to SDG acceleration	Update guidelines for SVN prevention, and support context-sensitive adaptation
Intervention implementation: scale up high-quality care for women, particularly during pregnancy and at birth	Ensure early start of high-quality antenatal and childbirth care for all pregnant women	Allocate sufficient funding to support national ANC and childbirth programmes
	Scale up proven interventions* integrated with WHO-recommended ANC, and include in Universal Health Coverage planning	Increase research investment into potential interventions* for SVN prevention
Increased accountability: improved measurement and monitoring	Date all pregnancies and weigh all newborns and stillbirths and collate data nationally on rates of preterm birth, and SGA	Improve international statistics and ensure regular reporting on the incidence of different SVN types
	Promote societal level action with a multisectoral approach using health in all policies	Agree on approaches and a possible governance structure for international support to country activities on SVN and stillbirth prevention

SDG=Sustainable Development Goals. SGA=small for gestational age. SVN=small vulnerable newborn. ANC=antenatal care. *Proven and potential interventions described in detail in the *Lancet* 2023 Small Vulnerable Newborn Series[5]

Table: **Suggested global strategy for accelerating SVN and stillbirth prevention: pillars and national and international actions**

(ANC), as recommended by WHO, can be facilitated by group services and other innovative approaches,[8–10] complemented with multisectoral actions for Health in All Policies.[11,12] Importantly, scale-up of eight proven ANC interventions, including multiple micronutrient supplementation and screening and treatment of asymptomatic bacteriuria and syphilis globally, and protein and energy supplementation, low dose aspirin, vaginally provided progesterone, education for smoking cessation, and malaria prevention in selected contexts or target-groups, could prevent 32·4% of stillbirths and approximately 18% of all SVN births in 81 low-income and middle-income countries (LMICs).[5] Furthermore, there is preliminary evidence of benefits in selected settings, through supplementation of pregnant women with omega-3 fatty acids, zinc, or calcium, that needs to be confirmed by more research.[5]

National governments should lead in securing the health of every pregnant woman in their countries, but it will be important for international donors, notably the World Bank, to also prioritise SVN prevention. Additionally, major research funders, such as the Bill & Melinda Gates Foundation, the National Institutes of Health in the USA, or the Children's Investment Fund Foundation, should increase investment especially in LMIC-led research. At the global level, there is a need to agree on the appropriate platform, governance, and partnerships for international collaboration on SVN prevention—for this we call for leadership from the UN Health Cluster.

The third pillar is increased accountability, linked to improved measurement and use of data. Everywhere, every identified pregnancy should be dated with accurate gestational age and all newborns, as well as all stillbirths, should be weighed and classified by SVN types.[1] These data are essential for clinical management, programmatic planning, and improving epidemiological understanding to inform and drive accountability. There are tools and technologies to do this today at an affordable cost, with more than 80% of births worldwide now being in facilities. For example, obstetrical ultrasound technology is part of routine antenatal care and is recommended by WHO for all pregnant women including in LMICs.[8] Importantly, data must also be used at all levels to drive change.

Addressing the SVN problem holds great promise for global health equity. Health sector action will be crucial but not sufficient. To ensure success, a whole-society response is needed. Foundational elements include women's agency, access to sexual and reproductive health services, avoidance of unintended pregnancy, education, and community mobilisation.[13–16] Increased social activism about the unacceptability of SVN-related deaths and stillbirths will also be an important driver of societal response. This activism can be modelled based on earlier national and international campaigns, such as for HIV prevention, tobacco control, landmine removal, and women's suffrage.[17–19]

The fact that every fourth baby in the world is born too soon or born too small is a concern for human rights, public health, the national economy, and development. By not addressing this priority, we are jeopardising our collective future. There is a way to reverse this trajectory, as long as national actors, with global partners, prioritise action, advocate, and invest.[20] Together we can act now to ensure that every baby has a chance to be born alive, at the right time, and the right size. Everywhere.

GJH, JEL, REB, SA, NK, UA, PA, and MT are authors of the *Lancet* Small Vulnerable Newborn Series. AM, JSi, and MT report consulting fees from Tampere University, Finland. JSh reports travel costs from Tampere University. NK and PA report a grant from the Children's Investment Fund Foundation (CIFF), grant number 2004-04635. HN reports an MRC/UKRI/FCDO/EDCTP African Research Leader fellowship. KEAS reports funding from the Bill & Melinda Gates Foundation and is Co-chair of MoNITOR (advisory group to WHO on maternal and newborn health metrics). EVL works for the Partnership for Maternal, Newborn & Child Health (PMNCH) and WHO. These funding sources have had no role in the writing of or decision to submit this Comment for publication. We declare no other competing interests.

*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
abdu.mohiddin@aku.edu

Centre of Excellence in Women and Child Health, Aga Khan University, Nairobi, Kenya (AM, HN, MT); BetterBirth Program, Ariadne Labs, Harvard Medical School, Boston, MA, USA (KEAS); Condon, MT, USA (JSi); Partnership for Maternal, Newborn & Child Health (PMNCH), WHO, Geneva, Switzerland (EVL); Department of International Health, Bloomberg School of Public Health (REB, JSh) and Paul H Nitze School of Advanced International Studies (JSh), Johns Hopkins University, Baltimore, MD, USA; Liverpool School of Tropical Medicine, Liverpool, UK (HN); Department of Obstetrics and Gynaecology, University of Botswana, Botswana, Africa (GJH); Effective Care Research Unit, University of the Witwatersrand, South Africa (GJH); Maternal, Adolescent, Reproductive & Child Health (MARCH) Centre, London School of Hygiene & Tropical Medicine, London, UK (JEL); Sight and Life, Kaiseraugst, Switzerland (SA); UCL Great Ormond Street Institute of Child Health, London, UK (NK); Center for Child, Adolescent, and Maternal Health Research, Faculty of Medicine and Health Technology, Tampere University, Tampere University Hospital, Tampere, Finland (UA, PA)

1 Lawn JE, Ohuma EO, Bradley E, et al. Small babies, big risks: global estimates of prevalence and mortality for vulnerable newborns to accelerate change and improve counting. *Lancet* 2023; published online May 8. https://doi.org/10.1016/S0140-6736(23)00522-6.

2 Ashorn P, Ashorn U, Muthiani Y, et al. Small vulnerable newborns—big potential for impact. *Lancet* 2023; published online May 8. https://doi.org/10.1016/S0140-6736(23)00354-9.

3 Arora A. Never forgotten: the situation of stillbirth around the globe. UNICEF data. 2023. https://data.unicef.org/resources/never-forgotten-stillbirth-estimates-report/ (accessed Jan 26, 2023).

4 Hunter PJ, Awoyemi T, Ayede AI, et al. Biological and pathological mechanisms leading to the birth of a small vulnerable newborn. *Lancet* 2023; published online May 8. https://doi.org/10.1016/S0140-6736(23)00573-1.

5 Hofmeyr GJ, Black RE, Rogozińska E, et al. Evidence-based antenatal interventions to reduce the incidence of small vulnerable newborns and their associated poor outcomes. *Lancet* 2023; published online May 8. https://doi.org/10.1016/S0140-6736(23)00355-0.

6 Shiffman J. Four challenges that global health networks face. *Int J Health Policy Manag* 2017; **6:** 183–89.

7 Homer CS, Turkmani S, Wilson AN, et al. Enhancing quality midwifery care in humanitarian and fragile settings: a systematic review of interventions, support systems and enabling environments. *BMJ Glob Health* 2022; **7:** e006872.

8 WHO. WHO recommendations on antenatal care for a positive pregnancy experience. https://www.who.int/publications-detail-redirect/9789241549912 (accessed Jan 12, 2023).

9 Downe S, Finlayson K, Tunçalp Ö, Gülmezoglu AM. Provision and uptake of routine antenatal services: a qualitative evidence synthesis. *Cochrane Database Syst Rev* 2019; **6:** CD012392.

10 Sharma J, O'Connor M, Rima Jolivet R. Group antenatal care models in low- and middle-income countries: a systematic evidence synthesis. *Reprod Health* 2018; **15:** 38.

11 Kuruvilla S, Schweitzer J, Bishai D, et al. Success factors for reducing maternal and child mortality. *Bull World Health Organ* 2014; **92:** 533–44B.

12 Rasanathan K, Damji N, Atsbeha T, et al. Ensuring multisectoral action on the determinants of reproductive, maternal, newborn, child, and adolescent health in the post-2015 era. *BMJ* 2015; **351:** h4213.

13 Stenberg K, Axelson H, Sheehan P, et al. Advancing social and economic development by investing in women's and children's health: a new Global Investment Framework. *Lancet* 2014; **383:** 1333–54.

14 Temmerman M, Khosla R, Bhutta ZA, Bustreo F. Towards a new Global Strategy for Women's, Children's and Adolescents' Health. *BMJ* 2015; **351:** h4414.

15 Fathalla MF. Human rights aspects of safe motherhood. *Best Pract Res Clin Obstet Gynaecol* 2006; **20:** 409–19.

16 UN Population Fund. International Conference on Population and Development. https://www.unfpa.org/icpd (accessed Oct 6, 2022).

17 Keck ME, Sikkink K. Activists beyond borders: advocacy networks in international politics. Ithaca, NY: Cornell University Press, 1998.

18 Price R. Reversing the gun sights: transnational civil society targets land mines. *Int Organ* 1998; **52:** 613–44.

19 Mamudu HM, Gonzalez M, Glantz S. The nature, scope, and development of the global tobacco control epistemic community. *Am J Public Health* 2011; **101:** 2044–54.

20 Abubakar I, Dalglish SL, Angell B, et al. The *Lancet* Nigeria Commission: investing in health and the future of the nation. *Lancet* 2022; **399:** 1155–200.