

Small Vulnerable Newborn (SVN) Series Call to Action

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

Each year, 35 million newborns worldwide are born preterm (<37 weeks of gestation), small-for-gestational age, or with low birthweight (<2500g).(1) These small vulnerable newborns (SVN) have markedly reduced survival chances - more than half (55.4%) of the 2.4 million neonatal deaths in 2020 were attributed to being a SVN.(1) The survivors are vulnerable to health problems throughout their lifecourse, including poorer neurodevelopmental outcomes, lower educational achievement and greater risks of adulthood non-communicable diseases such as hypertension, ischaemic heart disease and stroke.(2) Indeed this impact is also inter-generational. 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 1 in every 4 newborns being 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 and examples from other successful global health programs.(4)

We call for action in every country to reduce the number of SVN and stillbirths, and in support of existing national and international targets, notably SDG 3 for health and wellbeing, the UN's Global Strategy for women, children and adolescents, the Global Nutrition Plan and Every Newborn. Action would be based on three pillars: (1) Problem recognition, (2) intervention implementation, and (3) increased measurement and accountability. Under these pillars, there are ten concrete actions for key stakeholders (Table 1). 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 like Afghanistan and South Sudan, and hence activities needs to especially focus in these settings.(1,5) Since all high-income countries are also affected, and have flat-line progress for prevention, this is important in all settings.

Problem recognition means that SVN and stillbirth prevention must be part of global and national health priorities. The World Health Organization should update its guidance specifically on SVN and stillbirth prevention and measurement, so that national health systems can use latest evidence to secure the health and rights of pregnant women and their babies (6). At country level, there should be regularly updated data on progress towards existing relevant targets, notably for LBW reduction as this is 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, particularly during pregnancy and at birth. Early onset and high coverage antenatal care (ANC) as recommended by the WHO, can be facilitated by group services and other innovative approaches (6–8), complemented with multi-sectoral actions for Health in All Policies.(9,10) Importantly, scale-up of eight proven ANC interventions, including multiple micronutrient supplementation, balanced protein and energy supplementation, low dose aspirin, vaginally provided progesterone, education for smoking cessation, malaria prevention, and screening and treatment of asymptomatic bacteriuria and syphilis,

could prevent 32.4% of stillbirths and approximately 18% of all SVN births in 81 low-and middle-income countries (LMICs).(11) 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. (11)

National governments should lead in securing the health of every pregnant woman in their countries, but it will be critical for international donors like World Bank to also prioritise SVN prevention. Additionally, major research funders, such as the Bill & Melinda Gates Foundation, National Institutes of Health in the US or Children's Investment Fund Foundation, should increase investment especially in research led in LMICs. 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 United Nations 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 to improve epidemiological understanding, informing and driving accountability. There are tools and technologies to do this today at an affordable cost, given >80% of births worldwide now being in facilities. For example obstetrical ultrasound technology is part of routine antenatal care and recommended by WHO for all pregnant women including in LMICs.(6) Importantly data must also be used at all levels to drive change.

Addressing the problem of SVN holds great promise for global health equity. Health sector action will be critical but not sufficient. To ensure success, we must break the traditional silos and mount a whole-society response. Foundational elements include women's agency, access to sexual and reproductive health services, avoidance of unintended pregnancy, education, and community mobilisation.(12–15) Greater 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.(16–18)

The fact that every fourth baby in the world is “born too soon” or “born too small” is a disaster – for human rights, public health, the national economy and development. By not addressing this priority, we are jeopardizing our collective future. There is a way to reverse this trajectory, as long as national actors, with global partners, prioritise action, advocate and invest.(19) 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.

It can be done.

It must be done.

Table 1: Suggested global strategy for accelerating SVN and stillbirth prevention: Pillars and national and international actions

Pillar	National action	International action
1. 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
2. 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 ¹ integrated with WHO recommended ANC, and include in Universal Health Coverage planning	Increase research investment into potential interventions ¹ for SVN prevention
3. 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 multi-sectoral 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

SVN = Small vulnerable newborn, ANC = antenatal care. ¹Proven and potential interventions described in detail in the Lancet 2023 Small Vulnerable Newborn Series (11)

AM, JS 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. KS reports funding from Bill & Melinda Gates Foundation and is Co-chair of MoNITOR (advisory group to WHO on maternal and newborn health metrics). EL works for the Partnership for Maternal, Newborn & Child Health (PMNCH), and the World Health Organization (WHO). These funding sources have had no role in the writing of or decision to submit this Comment for publication. The other authors declare no competing interests.

*Abdu Mohiddin, Katherine 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; BetterBirth Program, Ariadne Labs; Associate Professor, Harvard Medical School, Boston, USA; Independent consultant, Condon, MT, USA; Partnership for Maternal, Newborn & Child Health (PMNCH), World Health Organization (WHO), Switzerland; Bloomberg School of Public Health and Paul H Nitze School of Advanced International Studies, Johns Hopkins University, Baltimore, MD, USA; Liverpool School of Tropical Medicine, UK and Centre of Excellence in Women and Child Health, Aga Khan University, Nairobi, Kenya; Department of Obstetrics and Gynaecology, University of Botswana; Effective Care Research Unit, Universities of the Witwatersrand/Fort Hare/Walter Sisulu, South Africa; Maternal, Adolescent, Reproductive & Child Health (MARCH) Centre, London School of Hygiene & Tropical Medicine, London, UK; Department of International Health, Bloomberg School of Public Health, Johns Hopkins University, Baltimore, MD, USA; Sight and Life, Kaiseraugst, Switzerland; UCL Great Ormond Street Institute of Child Health, London, UK; Center for Child, Adolescent, and Maternal Health Research, Faculty of Medicine and Health Technology, Tampere University and Tampere University Hospital, Finland; Center for Child, Adolescent, and Maternal Health Research, Faculty of Medicine and Health Technology, Tampere University and Tampere University Hospital, Finland; Centre of Excellence in Women and Child Health, Aga Khan University, Nairobi, Kenya

References

1. Lawn JE, Ohuma EO, Bradley E, Idueta LS, Hazel E, Okwaraji Y, Erchick D, Yargawa J, Katz J, Lee ACC, Diaz M, Salasibew M, UN authors from WHO and UNICEF, Blencowe H, Black RE. Small babies, big risks: Global estimates of prevalence and mortality for vulnerable newborns to accelerate change and improve counting. *Lancet* (London, England). (Lancet Small Vulnerable Newborn series (paper 2)).
2. Ashorn P, Ashorn U, Muthiani Y, Aboubaker S, Askari S, Bahl R, Black RE, Dalmiya N, Duggan CP, Hofmeyr GJ, Kennedy SH, Klein N, Lawn JE, Shiffman J, Simon J, Temmerman M, UN LBW estimate

collaborative group. Small vulnerable newborns – big potential for impact. *Lancet* (London, England). (Lancet series: Small Vulnerable Newborns 1).

3. Arora A. Never Forgotten: The situation of stillbirth around the globe [Internet]. UNICEF DATA. 2023 [cited 2023 Jan 26]. Available from: <https://data.unicef.org/resources/never-forgotten-stillbirth-estimates-report/>
4. Shiffman J. Four Challenges That Global Health Networks Face. *Int J Health Policy Manag*. 2017 Apr 1;6(4):183–9.
5. Homer CS, Turkmani S, Wilson AN, Vogel JP, Shah MG, Fogstad H, 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 Jan;7(1):e006872.
6. WHO recommendations on antenatal care for a positive pregnancy experience [Internet]. [cited 2023 Jan 12]. Available from: <https://www.who.int/publications-detail-redirect/9789241549912>
7. Downe S, Finlayson K, Tunçalp Ö, Gülmezoglu AM. Provision and uptake of routine antenatal services: a qualitative evidence synthesis. *Cochrane Database Syst Rev*. 2019 Jun 12;6(6):CD012392.
8. 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 Mar 5;15(1):38.
9. Kuruville S, Schweitzer J, Bishai D, Chowdhury S, Caramani D, Frost L, et al. Success factors for reducing maternal and child mortality. *Bull World Health Organ*. 2014 Jul 1;92(7):533-544B.
10. Rasanathan K, Damji N, Atsbeha T, Brune Drisse MN, Davis A, Dora C, et al. Ensuring multisectoral action on the determinants of reproductive, maternal, newborn, child, and adolescent health in the post-2015 era. *BMJ*. 2015 Sep 14;351:h4213.
11. Hofmeyr GJ, Black RE, Rogozińska E, Heuer A, Walker N, Ashorn P, Ashorn U, Bhandari N, Bhutta ZA, Koivu A, Kumar S, Lawn JE, Munjanja S, Näsänen-Gilmore P, Ramogola-Masire D, Temmerman M. Evidence-based antenatal interventions to reduce the incidence of small vulnerable newborns and their associated poor outcomes. *Lancet* (London, England). (Lancet Series: The small vulnerable newborn Paper 4).
12. Advancing social and economic development by investing in women's and children's health: a new Global Investment Framework - PubMed [Internet]. [cited 2022 Sep 22]. Available from: <https://pubmed.ncbi.nlm.nih.gov/24263249/>
13. Temmerman M, Khosla R, Bhutta ZA, Bustreo F. Towards a new Global Strategy for Women's, Children's and Adolescents' Health. *BMJ*. 2015 Sep 14;351:h4414.
14. Fathalla MF. Human rights aspects of safe motherhood. *Best Pract Res Clin Obstet Gynaecol*. 2006 Jun;20(3):409–19.
15. International Conference on Population and Development [Internet]. United Nations Population Fund. [cited 2022 Oct 6]. Available from: <https://www.unfpa.org/icpd>

16. Keck ME, Sikkink K. *Activists beyond borders: advocacy networks in international politics*. Ithaca, NY: Cornell University Press; 1998.
17. Price R. Reversing the Gun Sights: Transnational Civil Society Targets Land Mines. *International Organization*. 1998;52(3):613–44.
18. Mamudu HM, Gonzalez M, Glantz S. The nature, scope, and development of the global tobacco control epistemic community. *Am J Public Health*. 2011 Nov;101(11):2044–54.
19. Abubakar I, Dalglish SL, Angell B, Sanuade O, Abimbola S, Adamu AL, et al. The Lancet Nigeria Commission: investing in health and the future of the nation. *The Lancet*. 2022 Mar;399(10330):1155–200.

Authors' Contributions

The Commentary was initially drafted by the AM, KS, JS, EL, JSh, MT and all authors contributed to the final version for submission.

Role of Funding Source

Funded by CIFF with a grant to Prof Ashorn (grant number 2004-04635).

Ethics Committee approval

Not applicable.