

Paediatricians as champions for ending folic acid-preventable spina bifida, anencephaly globally

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Paediatricians have a long history of championing highly effective public health programmes that have improved the lives of children around the world. Now, paediatricians have another unprecedented opportunity to champion primary prevention of spina bifida and anencephaly (SBA) globally. Thirty years ago, the British Medical Research Council's landmark randomised control trial established that adequate intake of folic acid consumption by mothers before and during early pregnancy is the most effective public health strategy for preventing the majority of SBA cases, known as SBA-F (F indicates folic acid-preventable SBA).¹ As of 2020, 58 countries have mandatory policies for staple food fortification with folic acid, due to which about 22% of global cases of preventable SBA-F are prevented.² While mandatory fortification benefits these 58 countries, over 100 other countries, many in Europe, Asia and Africa lag behind in SBA-F prevention by not investing in this proven public health intervention.²

At the May 2022 World Health Assembly (WHA) meeting, the Colombian government agreed to champion the passage of a resolution to promote global prevention of SBA-F. This resolution calls for the adoption by all member nations of folic acid fortification of commonly consumed staple foods. We are optimistic that the resolution will be considered for a vote by the full WHA at the upcoming meeting in May 2023. A majority of the member nation delegates must vote in favour for passage of the resolution. We encourage paediatricians in all countries (with and without fortification policies), and their local, national and international paediatric organisations, to help their national delegates to the WHA understand the potential benefit to the health of children everywhere if the resolution is passed.

There is extensive literature from which paediatricians can draw to advocate for primary prevention of SBA-F which has been summarised in a recent call to action for the WHA resolution.³ First, there is a large burden of preventable SBA-F worldwide that needs to be addressed urgently with about 213 800–322 000 pregnancies that are affected annually with SBA globally.⁴ Of the pregnancies that are affected, about 50% result in elective terminations or stillbirths, and of the affected babies that are born alive, 75% die before reaching 5 years of age.⁴ These estimates are based on conservative assumptions, and while they serve as best available data, they underestimate the true burden of these birth defects until all countries prioritise population-based surveillance and achieve robust tracking of all pregnancy outcomes to understand the total prevalence of birth defects. Yet, for context, according to the WHO (<https://www.who.int/news-room/fact-sheets/detail/poliomyelitis>), the current number of preventable SBA-F cases globally is comparable to the number of babies affected by poliomyelitis before the implementation of global polio vaccine programmes. Second, prevention of SBA-F is proven and highly feasible. Mandatory folic acid fortification of commonly consumed staple foods has been repeatedly shown to be the most effective solution to prevent SBA-F, and associated disability and mortality.⁵ Additionally, countries with mandatory folic acid fortification have significantly lower prevalence of spina bifida compared with countries with voluntary fortification or no fortification policy.⁵ Third, there is a strong economic incentive for governments to adopt folic acid fortification. When implemented well, especially in low-income and middle-income countries, fortification is shown to save US\$957 per death averted and US\$15 per disability-adjusted life year averted from SBA-F.⁶ Thus,



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folic acid fortification serves as a proven, feasible, and cost-effective strategy to help countries to meet their 2030 Sustainable Development Goals in promoting health for all, and reaching newborn and under-5 child mortality prevention goals.

Equipped with the evidence above, we encourage paediatricians to:

1. Champion the benefits of the WHA resolution on folic acid fortification to their respective WHA delegations.
2. Champion sustainable folic acid fortification programmes in their countries *now*.

The unique perspective of paediatricians makes them very effective science-based champions for both passage of the WHA resolution and folic acid fortification in their own countries. Several organisations have already made great progress to amplify the voices of paediatricians and other paediatric specialists, and these efforts should be further built on leading up to a possible vote on the WHA resolution in May 2023. The Global Alliance for Prevention of Spina Bifida-F (GAPSBi-F), formed in 2017, has been spearheaded by paediatric neurosurgeons and supported by the Center for Spina Bifida Prevention at Emory University. GAPSBi-F aims to address primary prevention of spina bifida occurring due to maternal folate inadequacy. In addition to paediatric neurosurgeons, GAPSBi-F members include paediatricians, urologists, epidemiologists, food fortification experts and patient groups. GAPSBi-F collectively advocates for the prevention of SBA-F and has been actively involved in promoting support for a WHA resolution on folic acid fortification. Importantly, the International Federation for Spina Bifida and Hydrocephalus, representing people with spina bifida and their families, is working closely with GAPSBi-F. In addition, resources to equip paediatricians in their advocacy are available through the Food Fortification Initiative (www.ffinetwork.org), Nutrition International (www.nutritionintl.org), Global Alliance for Improved Nutrition (www.gainhealth.org), International Federation for Spina Bifida and Hydrocephalus (www.ifglobal.org), and the Emory University Center for Spina Bifida Prevention (www.preventspinabifida.org), among others. With support from paediatricians across the globe, policy-makers will get the message of the need to take timely, action-oriented measures to prevent SBA-F, beginning with passage of the WHA resolution and implementation of folic acid fortification programmes in their countries. In addition to the references in this writing, the organisations listed also have resources available for the strong economic case underlying the need for fortification programmes.

Critically, passage of the WHA resolution alone, without effective implementation and periodic monitoring and evaluation of fortification, would not yield the desired prevention of SBA-F. Therefore, to jumpstart action towards building national folic acid fortification programmes, paediatricians, collaborating with health economists, can convince policy makers to allocate

needed funding to implement and sustain effective fortification in their countries when such a policy is lacking or is not working as intended. This funding can support advocates championing for required folic acid fortification in places where fortification policy is still met with challenges. Further, this appropriation can assist the food industry (eg, grain milling) to implement and sustain effective fortification with built-in quality control processes. Finally, funds can be allocated for governments to monitor the effectiveness of fortification through periodic biomarker surveys of blood folate concentrations in reproductive-aged women and for setting up surveillance systems for SBA-F prevalence.

From the bedside to the WHA, to sustainable fortification in their countries, paediatricians can be effective science-based champions locally, nationally and globally for children living with spina bifida as well as for primary prevention of this condition where possible. Their critical voices can move policy-makers to implement universal mandatory food fortification with folic acid to prevent SBA-F globally.

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