Prioritising respiratory syncytial virus prevention in low-income and middle-income countries

Respiratory syncytial virus is a major cause of lower respiratory tract infection morbidity and mortality in children globally, causing 3·2–3·6 million hospitalisations and more than 100 000 deaths annually in children younger than 5 years, 99% of which occur in low-income and middle-income countries (LMICs).[1] Despite being identified 65 years ago, at the same time as poliovirus, there is no widely available and affordable preventive strategy for respiratory syncytial virus.

Over the past few years, the advent of several preventive interventions[2] finally provides opportunities to address the burden of respiratory syncytial virus disease. A long-acting, single-dose monoclonal antibody that provides season-long protection was approved in Europe in October, 2022.[2] Additionally, the interim results of phase 2 and phase 3 maternal respiratory syncytial virus vaccine trials for the prevention of severe lower respiratory tract infection caused by respiratory syncytial virus in infants, among whom the burden is greatest, are promising, although the studies await peer review.[3] Vaccines for use in early childhood are also under clinical investigation.[2] However, in the past, new vaccines to prevent important respiratory and diarrhoeal illnesses were authorised and implemented first in high-income countries (HICs) and much later in LMICs. Adoption in LMICs, in our view, lags unacceptably behind. For example, the *Haemophilus influenzae* type b conjugate vaccine was implemented in LMICs almost 20 years after it was introduced in HICs.[4] Similarly, the pneumococcal conjugate vaccine, rapidly adopted in HICs, took 15 years to achieve 59% utilisation in middle-income countries.[5] Finally, despite the highly successful rotavirus vaccine roll-out in LMICs in 2009, as of January, 2022, it remained unavailable in 21% of African countries and 54% of southeast Asian countries, two regions that account for the majority of rotavirus mortality.[6]

The disparity in the implementation of highly effective preventive interventions in LMICs, where most mortality from respiratory and diarrhoeal illnesses occurs, is unacceptable and demands urgent concerted action of the global community. This includes the pharmaceutical industry, the UN, public health agencies, foundations, governments and non-governmental organisations, regional and national immunisation technical advisory groups, economists, paediatricians, allied health-care and research personnel, and, importantly, family groups, who strongly advocate for our most vulnerable infants that are least able to advocate for themselves.

Several barriers preclude the successful delivery of respiratory syncytial virus preventives in LMICs, including low awareness; a lack of country-specific burden data; logistical, administrative, and structural constraints; and the cost of the products.[7,8] Clearly, the first step must be equitable access to new interventions. Accessibility to respiratory syncytial virus preventives must be streamlined through collaboration, such as that established between the Bill & Melinda Gates Foundation and Pfizer, which will enable faster and more equitable deployment of the maternal respiratory syncytial virus vaccine to LMICs.[9] This collaboration is essential to dissolve inequity and accelerate progress. Second, awareness must be increased by disseminating information on the impact of respiratory syncytial virus infection on young children, its manifestations and therapeutic support, and the fundamentals of prevention. Third, it is imperative to address the shortfall in diagnostic tools and clinical resources, particularly the basic need for diagnostic tests to confirm respiratory syncytial virus infection and measure its country-specific impact, and effective oxygen delivery and oximeters. Improved diagnosis is currently supported by WHO and the Gates Foundation. Fourth, the experience, knowledge, and expertise of Gavi, the Vaccine Alliance, and UNICEF, as well as that gained during the COVID-19 pandemic, will be crucial. Fifth, intrinsic to the challenges faced in LMICs is the issue of cost (appendix). Implementing new strategies will have a cost that these countries, undoubtedly, cannot meet alone. A respiratory syncytial virus vaccine price of less than US$5 per dose has been set as a target for LMICs. Importantly, new respiratory syncytial virus preventives involve a single dose (*vs* three or four doses for pneumococcal conjugate vaccine). In 2011, Gavi successfully negotiated a reduced price of human papillomavirus vaccines via a public–private

See Online for appendix

partnership in LMICs.[10] The simultaneously revised and simplified dosing schedule by WHO facilitated roll-out and further reduced overhead costs. Nevertheless, the uptake of human papillomavirus vaccines remains low, highlighting the challenges faced. Finally, the introduction of any new intervention must be preceded by engagement of local communities to determine preferences, understanding, and priorities.

We have now reached a pivotal point in respiratory syncytial virus prevention that demands international recognition, collaboration, and full commitment and engagement of key stakeholders to effect change. The new respiratory syncytial virus preventive strategies have the potential to substantially improve child health and reduce morbidity and mortality, but to truly realise their full potential, the outlined barriers in LMICs must be urgently addressed. We put forward that the time to act is now. The first step should be to bring the key stakeholders together to agree on a unified plan of action to finally end the devastating burden of respiratory syncytial virus in children residing in LMICs.

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