Access to highly effective long-acting RSV-monoclonal antibodies for children in LMICs—reducing global inequity

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Respiratory syncytial virus (RSV) is a major cause of lower respiratory tract infection (LRTI), hospitalisation, and mortality in infants and young children, with the highest burden of severe disease in low-income and middle-income countries (LMICs).[1] The predominant burden of hospitalisation occurs in full-term healthy infants younger than 6 months; however, preterm infants are also at risk of severe RSV-LRTI up to the age of 2 years[2] as are children with underlying chronic conditions such as congenital heart disease, lung disease of prematurity, or immunodeficiency. More than 95% of RSV-associated deaths occur in LMICs, with more than two-thirds occurring outside a health facility.[1] A strategy for preventing severe RSV-LRTI in infants in LMICs would have a major impact on child health given the high burden of disease, associated mortality, and limited access to health care.

Two new strategies to prevent RSV-LRTI in infants and young children are now available: a maternal prefusion RSV vaccine, RSVpreF, and a long-acting RSV monoclonal antibody (mAb), nirsevimab, given intramuscularly as a single dose to a child before or during the RSV season.[3-6] Clinical trials found nirsevimab to have a high efficacy (76–80%) against severe RSV-LRTI and medically attended RSV-LRTI through 150 days in preterm and full-term infants, and in young children with underlying conditions.[3-5] Additionally, there was a 35% reduction in all-cause LRTI and 23% reduction in antibiotic prescribing.[3] Use of a long-acting mAb might be useful in infants whose mothers did not receive an RSV vaccine in pregnancy, in preterm babies, or in young children susceptible to severe disease. Population-based effectiveness studies of nirsevimab given to all infants born in the RSV season, with a catch-up campaign for infants born before the RSV season or to children at high-risk aged up to 2 years, confirm that this intervention is highly effective. In Galicia, Spain, where coverage of more than 90% was reached for nirsevimab, substantial reductions in hospitalisation for RSV-LRTI (–82%), hypoxic RSV-LRTI (–87%), all-cause LRTI (–69%), and all-cause hospitalisation (–66%) occurred.[7] Nirsevimab has been approved in at least 35 high-income countries; however, no LMIC has introduced this intervention except for China, an upper-middle income country. This situation exposes glaring disparities in early access and emphasises the importance of access strategies for RSV prevention for all infants including mAbs in LMICs.

Affordable access to RSV preventive mAbs might be challenging in LMICs.[8] However, public-health-oriented access-to-medicine mechanisms, such as voluntary licensing and technology transfer to multiple manufacturers, have been successful in ensuring at-scale access to affordable therapy in LMICs (eg, for WHO-recommended first-line HIV antiretrovirals the price dropped from several thousand US$ per year to less than $45 per year). Long-acting RSV-mAbs might provide a unique opportunity for adoption in LMICs and an ideal proof of concept of a high-volume model such as the one that enabled broad access to HIV treatment. The single mAb dose (50 mg or 100 mg) for infants suggests a low cost of production per dose (generally referred to as the cost of goods sold [COGS]). The cost of producing a single 50 mg dose of mAb could range from US$5 to $10 and higher volume production could further lower COGS through economies of scale.[9] Even though this estimate excludes other costs (eg, development, regulatory, supply, and general expenses), it highlights the potential of achieving low COGS that could contribute to an affordable price for mAbs in LMICs. The current capacity constraints faced by suppliers could also be resolved by voluntary licensing and technology transfer, which promotes distributed production, strengthening of the supply chain, and fostering of competition and innovation to drive price reductions and facilitate access in LMICs.

However, achieving successful implementation and ensuring that mAb availability matches the burden of severe RSV disease requires strong collaboration between stakeholders, including originator pharmaceutical companies and public health organisations (appendix). The COVID-19 pandemic has shown that rapid availability and access to new immunisations are achievable in LMICs. Administration of single-dose RSV preventive mAb to infants could leverage existing

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national immunisation programmes, many of which already administer a birth BCG vaccine or other vaccines in early infancy. A recommendation by WHO for the use of mAbs for RSV prevention in children is key to promote local and regional approvals and procurement in LMICs. A WHO recommendation would also facilitate the development of a regulatory pathway through WHO prequalification, which might be necessary for biosimilar manufacturers. Supporting regulatory coordination might speed up approval procedures, especially if accompanied by technology transfer maximising similarity with the originator product. Public sector finance and procurement mechanisms, such as Gavi, the Vaccine Alliance, could play a crucial role in facilitating access and encouraging the adoption of biosimilar products in LMICs that benefit from Gavi funding.

Severe RSV-LRTI is now a preventable disease in infants and young children.[10] Access to affordable preventive interventions for all children, especially those in LMICs, is urgently needed and should be a priority to strengthen child health and global equity.

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