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Protecting children in low-income and middle-income countries from COVID-19

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A saving grace of the COVID-19 pandemic in high-income and upper middle-income countries has been the relative sparing of children. As the disease spreads across low-income and middle-income countries (LMICs), long-standing system vulnerabilities may tragically manifest, and we worry that children will be increasingly impacted, both directly and indirectly. Drawing on our shared child pneumonia experience globally, we highlight these potential impacts on children in LMICs and propose actions for a collective response.

Current data suggest children are susceptible to severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection but are less likely than adults to become severely ill.[1–4] Although at first glance these data appear reassuring, the child pneumonia, and broader global child health, experience provides a forewarning of what may be coming in LMICs. High-income countries (HICs) have an under-5 pneumonia mortality rate of 3 per 100 000.[5] In contrast, the rate in LMICs is 200 per 100 000 population, with pneumonia the leading infectious cause of under-5 death globally.[5] While yet unknown, COVID-19, a viral pneumonia syndrome, may impact children in LMICs more severely than what has been observed to date.

The risk factors for poor outcomes in pneumonia are overwhelmingly more prevalent in LMICs than HICs. These include severe malnutrition, low immunisation uptake, nutritional anaemia, HIV exposure or infection, air pollution, poverty, low parental education and, crucially, limited access to high-quality acute healthcare.[6 7] In HICs, vulnerable children are being actively 'shielded' from infection, but in LMICs, most will remain exposed.

The indirect effects of the COVID-19 response need attention as they are an enormous threat to the well-being of children. These include widespread parental unemployment, disrupted education, food and housing insecurity and threats to vital preventive health programmes, like immunisation, antenatal care, infant feeding and mental health. The acute care workforce may soon be overwhelmed by COVID-19 needs, and we anticipate critical healthcare services being diverted away from mothers and children. Delays in care seeking may worsen, resulting in more severe illness. So, while transmission of respiratory pathogens may be slowed by pandemic response measures, these measures could accentuate well-established risk factors for poor paediatric outcomes and undermine healthcare systems' abilities to respond.

What can be done to protect children in LMICs? First, we must prevent the collapse of vital acute care (oxygen, antibiotics, personal protective equipment (PPE)), preventive services (immunisation, maternity care, breastfeeding and nutrition programmes, HIV and malaria prevention) and supply chains and take opportunities for system strengthening that could be a legacy of the pandemic. Maintaining a critical workforce in maternal and child health, enabling healthcare workers to use PPE and empowering community health workers to engage with communities in the response are essential. These measures, taken locally with decisive international support, are likely to save more children's lives than advanced intensive care and should benefit children with COVID-19 and other illnesses, including pneumonia.

Second, COVID-19 testing in LMICs needs massive upscaling and outreach. If we are to understand paediatric COVID-19, surveillance systems—both pandemic and pneumonia focused—need investment for rapid scale-up and testing of children with respiratory illnesses for SARS-CoV-2, testing paediatric contacts of adult cases and accurately reporting child deaths.

Third, pandemic lockdown strategies should maintain vital access to care and be tailored to the particular social, economic and health environments of LMICs. This may not mean following the approach of HICs. Rather, LMICs should also build on their experience and expertise gained during other epidemics and make decisions based on their reality, workforce capacity, population density and migration patterns. Examples could be establishing separate areas in clinics for preventative care by dedicated non-respiratory staff, home vaccination visits, outposts responsible for delivery of household essentials to COVID-19 affected households, retraining newly unemployed people to assist with case finding and contact tracing and sewing groups to produce face masks to support widespread mask strategies.

Fourth, research is key to better understanding COVID-19 fundamentals on children, younger and older, including their role in transmission dynamics, spectrum of illness and outcomes, the impact of comorbidities and common coinfections (viral, bacterial, mycobacterial and parasitic) and how broader pandemic responses impact on health behaviours and outcomes. To accomplish this requires COVID-19 surveillance and rapid cycle research on the effects of pandemic response strategies and context-informed modelling using the best available data and locally relevant assumptions. Understanding COVID-19 in children is essential to developing informed, nuanced pandemic responses, including eventual vaccination strategies. These efforts must be country-driven, network-building, joint global initiatives supported by the international community for the benefit of all.

We expect children in LMICs may be seriously impacted by COVID-19, potentially both directly and indirectly. Balanced strategies that protect children must be central to coordinated and cooperative global pandemic response efforts.

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