Secondary impacts of COVID-19: Risk of vaccination reduction and global resurgence of measles

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Coronavirus disease (COVID-19) was declared a pandemic by the World Health Organization on March 11, 2020.¹ The pandemic will adversely impact routine immunization globally as routine vaccination services provision has been significantly affected at least 68 countries and an estimated 80 million children under the age of 1 living in these countries, thereby increasing the likelihood of vaccine-preventable diseases including measles outbreak in the absence of prompt actions.²

The World Health Organization's Strategic Advisory Group of Experts (SAGE) on Immunization has temporarily suspended all mass vaccination campaigns and the national lockdown across the countries has resulted in the postponement of routine immunization programs following the recommendations of maintaining physical distance.^{3,4} This is a major concern as 37 low and middle income countries, some of which are battling ongoing measles outbreaks, have suspended routine immunization activities and 117 million children are at risk of not receiving measles vaccination.⁵ These countries are Mexico, Honduras, Colombia, Bolivia, Chile, Paraguay, Brazil, Dominican Republic, Chad, Nigeria, Guinea, Central African Republic, Equatorial Guinea, Gabon, Democratic Republic of Congo, Angola, Namibia, Botswana, Eswatini, Zambia, Comoros, Kenya, Somalia, Ethiopia, Djibouti, South Sudan, Lebanon, Ukraine, Uzbekistan, Kazakhstan, Kyrgyzstan, Nepal, Bangladesh, Maldives, Cambodia, Philippines and Vietnam.⁶ Some of these countries such as DRC Congo, Brazil, Philippines, Kazakhstan, Bangladesh, Nigeria, and Ethiopia have reported the highest number of measles cases globally as of March, 2020, while some of the them are war-torn African nations in the Sahel including Central African Republic, Chad, South Sudan, and Somalia that have reported significant increase in the number of measles deaths in 2019.^{5,7}

Gaps in immunization in high-income countries like the US, UK and France led to alarming measles outbreaks in 2019 and the impact of COVID-19 will exacerbate the situation. Demand for immunization has decreased during COVID-19 in these regions where parents visit the clinic or private pediatric offices for routine inoculation. This has led to reduction in the immunization rates as parents avoid doctor's visits to maintain physical distancing and to prevent children from being infected by COVID-19.⁸ Several states in the including Massachusetts, Michigan and Minnesota have reported a decrease in the uptake of measles vaccination.^{8,9} According to data from PCC, an electronic health records company for pediatricians, information from 1000 independent pediatrician showed that measles vaccination uptake dropped by 50% from the week of 16 February to the week of 5 April 2020 in the United States.⁸ Data for routine pediatric vaccines from Vaccines for Children Program (VFC) and Vaccine Safety Datalink (VSD) from January 6–April 19, 2020 found sharpest decline in measles immunization uptake in the US.¹⁰ Any disruption of immunization services, even for short duration will result in an increased likelihood of vaccine preventable disease such as measles outbreaks.¹¹

Furthermore, there will be disruption in the supply and distribution of vaccinations globally as a result of the border closures and disruption to flights and transportation to mitigate the transmission of the virus.¹² 21 developing countries have reported shortages in vaccination as funds are being allocated to support health systems acquire essential diagnostics and necessary equipment to combat coronavirus and thus less money is available for countries to acquire vaccinations.^{3,10} Delivery of routine services such as immunization will also be affected due to shortage of resources as healthcare providers are deployed to tackle COVID-19.

These data suggest a suboptimal coverage of vaccination programs, which may critically affect the existing vaccination goals in many countries while threatening the population health with inadequate control of measles. Amidst ongoing COVID-19 pandemic, it is therefore, essential to prevent these challenges through effective policymaking and strategic planning. Such measures should not only aim to recover the gaps in national and regional immunization goals but also emphasize on building health systems resiliency to external shocks that may affect vaccination programs across context.

Measures should be taken to conduct situational analyses in different high-risk countries to evaluate the gaps in terms of vaccination coverage and identify vulnerable groups to develop tailored vaccination strategies and operational plans to address immunization gaps and reach every child with vaccines. Efforts to intensify population-based immunization record and vaccine preventable disease surveillance at sub-national level as part of integrated health information system will help to support routine immunization decision-making. Countries will need to increase community-level partnership to mobilize resources to ensure effective vaccination coverage. Community engagement will help to enhance awareness in the community and increase demand for vaccination by addressing misconceptions and increasing the understanding of the importance of routine immunization. Consequently, integrating field-level COVID-19 responses with vaccination efforts will ensure cost-effective and optimal prevention of COVID-19 as well as restoration of vaccination gaps in respective countries and reduce infectious disease burden on the health system. In order to maximize reach, pulse immunization strategy can be implemented to improve uptake among the refugees and other marginalized population. Responses should include utilizing extensive media coverage and encouraging physicians to promote catch up immunization and enhance demand for immunization among primary care givers.

Lastly, monitoring, accountability, and leadership are essential to address the ongoing crisis as well as improve health system responses to vaccination programs through integrated, coordinated, and collaborative initiatives. The current COVID-19 pandemic appears to be a threat to global achievements in measles control, which necessitates stronger measures to develop resilience in vaccination programs in the future.

Declaration of interests

We declare no competing interest.

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