Effect of COVID-19 on Routine Pediatric Vaccination

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Authors’ contributions

This work was carried out in collaboration by both the authors. Both authors read and approved the final manuscript.

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The disruption brought about by the ongoing COVID-19 pandemic, caused by Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2), has been devastatingly widespread. As of September 19, 2020, there have been over 30 million confirmed COVID-19 cases with over 950,000 deaths globally [1]. The number of cases is likely much higher due to a significant number of cases being asymptomatic [2]. Infected individuals have experienced neurological, respiratory, gastrointestinal, and other adverse impacts [3, 4]. Even those who have not been infected have experienced stress due to fear of being infected, the end of the pandemic not being in sight, and disruption of daily life due to the implementation of lockdowns and social distancing guidelines [5].

There has been a general decline in clinic visits for fear of getting infected and because of reduced accessibility to in-person health services due to lockdowns. The number of visits to ambulatory care practices in the United States (US) declined by nearly 60% by early April 2020. Though the numbers rebounded in May, they were still roughly one-third lower than before the pandemic [6]. Emergency room rates in England for heart attacks fell to nearly half of baseline rates between March and April 2020. Activity of general practitioners in France dropped by 44% and that of outpatient medical specialists by 71% between January and April 2020 [7].

An area that needs more attention is the impact of COVID-19 on routine pediatric vaccination.
Recent data from the US state of Michigan shows that there was a general decline in up-to-date child vaccination status in almost all age groups due to the pandemic. Non-influenza vaccine doses administered to children aged ≤18 years decreased 21.5% and the doses administered to children aged ≤24 months decreased 15.5% during the first four months of 2020 compared with the same averaged periods in 2018 and 2019 [8]. The Vaccine Tracking System of the US Centers for Disease Control and Prevention (CDC) shows that US health care providers ordered about 250,000 fewer doses of Vaccines for Children (VFC) Program-funded measles-containing vaccines and about 2.5 million fewer doses of non-influenza vaccines from mid-March to mid-April, 2020 compared to the same period in 2019. VFC is a national program that provides federally purchased vaccines to approximately half of US children aged 0-18 years. Data from Vaccine Safety Datalink, a collaborative project between CDC and eight US healthcare organizations, confirms that the number of doses of measles-containing vaccine administered dropped in mid-March 2020, especially among children older than 24 months [9]. It is worth noting that the US declared national emergency to combat COVID-19 on March 13, 2020 and that is the time period when vaccine ordering and administration started declining steeply.

Since March 2020, routine immunization services have been substantially impacted, from moderate to severe disruptions to total suspension, due to the pandemic in at least 68 countries and is likely to impact approximately 80 million children under the age of 1 year living in these countries [10]. One out of two children missed routine immunizations during COVID-19 lockdown in Pakistan’s Sindh province [11]. Measles vaccination campaigns have been suspended in 27 countries while polio campaigns have been paused in 38 countries [10]. Over 117 million children in 37 countries may miss out on receiving measles vaccine due to suspension of scheduled immunization activities [12]. At least 24 million people in 21 Gavi, the Vaccine Alliance-supported lower-income countries are at risk of missing out on vaccines against diseases like polio, measles, typhoid, and cholera due to paused vaccination programs [10].

There is a multitude of reasons for the reduction in routine pediatric vaccination during the pandemic. Parents’ fear about them or their children getting infected with the COVID-19 virus while visiting a clinic and restriction on their movement due to lockdowns have had a profound impact on vaccination coverage. The availability of health workers for vaccination has been adversely impacted due to their redeployment to COVID-19 response duties and shortage of personal protective equipment. Delays in vaccine deliveries due to curtailment of flights have aggravated the situation [10]. Reduction in provision of immunization services and restriction in movement of vaccinators to conduct outreach have also exacerbated the problem [11].

A decline in vaccination coverage may leave children and communities vulnerable to preventable diseases. A recent study suggests that the benefit of sustaining routine childhood immunization far outweighs the excess risk of COVID-19 deaths due to the additional risk of SARS-CoV-2 infection during children’s vaccination visits, particularly for the vaccinated children [13]. Parents, providers, and public health authorities need to come together to stop health crises down the road due to a decline in vaccinations. Clinics can dedicate specific areas and days for vaccination and wellness visits. Compulsory face coverings should be mandated for everyone in the clinic and the number of patients in the clinic at one time should be limited. Provisions can be made for online registration and payment for the visits and children and their parents can be made to wait outside rather than in the waiting room thereby reducing the risk of infection. Vaccines can be administered outside the clinics, say, in the parking lots [8]. Providers can use children’s health records to ensure that vaccines are not missed and should work with families to ensure their administration. The importance of vaccination, even during a pandemic, needs to be affirmed by public health authorities. It is concluded that as COVID-19 has adversely impacted routine pediatric vaccination, concerted efforts are needed to ensure that children do not fall behind on their vaccines, and if they do, rapid catch-up immunization is provided to them.

**CONSENT**

It is not applicable.

**ETHICAL APPROVAL**

It is not applicable.
COMPETING INTERESTS

Authors have declared that no competing interests exist.

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