

## The SARS-CoV2 pandemic and routine immunisation



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In May, 2012, the Global Vaccine Action Plan (GVAP) was endorsed at the World Health Assembly by the 194 member states. The GVAP was intended as a framework to promote high and equitable access to vaccines by 2020, helping save millions of children's lives. The plan had five goals, comprising the eradication of poliomyelitis, the elimination of measles and rubella, achieving high vaccine coverage across and within countries, the introduction of new vaccines into low-income and middle-income countries (LMICs), and the reduction of mortality. Although some progress was made towards all goals, only one was achieved.<sup>1-3</sup> Gavi, the Vaccine Alliance and immunisation partners supported eligible LMICs to introduce a range of vaccines available in high-income countries, but not used elsewhere.<sup>2</sup> In addition to the introduction of vaccines, the GVAP monitoring framework showed that there was progress in many countries, and that regular engagement at country, regional, and global levels maintained immunisation coverage among children at 86% of the third dose of diphtheria-pertussis-tetanus-containing vaccine.<sup>3</sup>

In *The Lancet Global Health*, Anita Shet and colleagues use these increasingly robust data systems to study the impact of the COVID-19 pandemic on routine immunisation and assess immunity gaps in children and the potential for outbreaks.<sup>4</sup> Reports from regional offices that collate information for their member states were combined with data on vaccine doses used by countries and two web-based surveys done in 2020 by WHO, to show the timing and extent of the disruption.

The analysis of 170 countries shows the greatest decline of more than a third in April, 2020, followed by attempts to address the gaps created by the pandemic restrictions and redeployment through catch-up campaigns that improved coverage in the latter part of 2020.<sup>4</sup> It is not surprising that the decrease in routine immunisation in the different WHO regions was greatest at the time when the most stringent lockdowns were imposed. However, the impact of the pandemic extended beyond the lockdowns because of supply-chain disruptions, assignment of immunisation workers to other functions, public fear of crowded spaces especially for children, travel restrictions, economic consequences on ability to travel, and access to health

care, among others.<sup>4</sup> Given that the improvement of immunisation systems has been a focus of all public health activities in LMICs, disruption of immunisation services could be considered a marker of overall outpatient health services, with the expectation that most other services would be expected to be more severely affected than immunisation. From published data, this finding extends across conditions studied globally or in LMICs, including cancer, tuberculosis, and diabetes.<sup>5-7</sup>

Although it is clear that the world and its health systems were unprepared for the speed and scale of the pandemic, the data indicate that disruptions to immunisation also depended on the type of services.<sup>4</sup> Populations most in need of outreach activities, most likely to be remote, marginalised, or displaced, were more disadvantaged. This fact is reflected in the increase in children who have had zero doses or are completely unimmunised, for whom the probability of accessing therapeutic services or being reached by mass campaigns is remote.<sup>8</sup>

Although data by WHO region is helpful, it is an aggregation that shows the amount of global disruption. Country-level data might be more informative in considering policies and strategies that might have protected immunisation and health systems or supported more rapid recovery. Countries with stronger public health systems would be expected to maintain immunisation services better than those with either fewer resources or higher reliance on private care, but it is also feasible that countries affected later in the pandemic might have had more time to prepare for maintenance of essential preventive services.

Several innovations that were introduced during the pandemic to maintain or improve immunisation rates in children could be considered for continued use in the future. The use of electronic booking systems for appointments to prevent crowding and long waiting times, longer availability of immunisation services extending into evenings to ensure that working parents could bring their children in, making immunisation available beyond fixed facilities, and training health-care workers in better communication and institution of infection control practices at facilities are valuable practices that could be retained.<sup>9</sup>

The recovery in late 2020 was clear, but there is a question about its completeness and continuation. COVID-19 vaccines became available to most of the world in 2021 and vaccination against SARS-CoV2 has ramped up in parallel with supply. The resources used for routine immunisation, including cold chain space, immunisation facilities, and staff are now being deployed for the world's largest-ever immunisation effort. Immunisation and vaccine-preventable disease surveillance staff had already been transitioned to COVID-19-related activities across all WHO regions, and that would imply constraints on the ability of health systems to maintain and improve routine immunisation. It is essential that monitoring be continued, immunity gaps estimated, and corrective measures undertaken to ensure that children are not left vulnerable and populations are protected against older diseases, even as we address a virus newly introduced into humans.

I am on the Boards of the Coalition for Epidemic Preparedness Innovations and MSD Wellcome Trust Hilleman Laboratories (nominated by the Wellcome Trust).

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