

Clearing Immunisation Backlogs & Building Back Better in the Wake of COVID-19: 10 Key Takeaways from the Linked Asia Pacific Workshop

THE LEARNING EXCHANGE

The Linked Immunisation Action Network welcomed immunisation practitioners from 7 countries across the Asia Pacific Region and global and regional technical experts for a workshop focused on “Clearing Immunisation Backlogs & Building Back Better in the Wake of COVID-19.” Led by the Institute for Health Policy (IHP) and held in Negombo, Sri Lanka, the objective of the workshop was to better understand country experiences during the COVID-19 pandemic, explore strategies that worked well in maintaining and restoring immunisation coverage during and after pandemic peaks, and identify best practices to strengthen immunisation programmes in the wake of the pandemic. Country government teams from **Bhutan, Indonesia, Sri Lanka and Viet Nam** participated, along with national representatives from **India, Pakistan and the Philippines**, and experts from both academic and partner organizations, including CHAI, Gavi, Jhpiego, JSI, PATH, Results for Development, Sydney School of Public Health, and UNICEF Regional Office for South Asia.

Key Takeaways: Strategies to Mitigate the Impact of the Pandemic

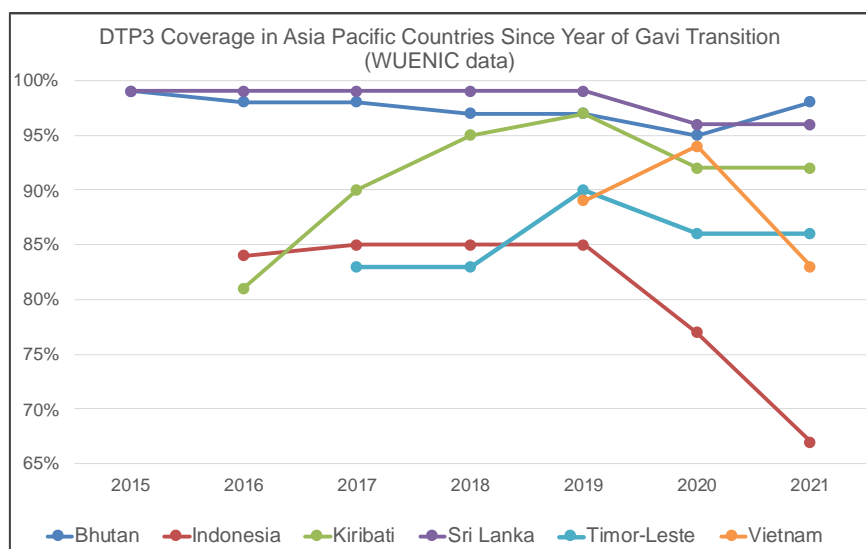
1. Strategies to address service delivery disruptions included granting exceptional status to certain populations to allow access services, extending vaccination clinic hours, modifying service delivery points to include curative care sites and other nontraditional vaccination sites, and integrating routine immunisation with COVID-19 vaccination sessions.
2. Strategies to address human resource challenges included providing surge capacity by engaging retired health workers and medical students, allied health professionals, first responders, and the military. Health worker shortages were also addressed by mapping and allocating health workers according to geographic need. To address burnout, countries offered financial and nonfinancial incentives to motivate and retain health workers.
3. Strategies to address data availability and quality included leveraging strong existing systems or building new systems (i.e., electronic immunisation registries) for COVID-19 vaccination, or relying on standard data monitoring and supervision approaches.
4. Strategies to address negative community perceptions of immunisation included conducting Information, Education, and Communication (IEC) campaigns, organizing advocacy meetings to address key drivers of vaccine hesitancy and refusal, and offering financial incentives to the community to seek vaccination services.
5. Countries likely need to employ a variety of methods to effectively restore routine immunisation services to catch up missed children.

Key Takeaways: Strategies to Clear Immunisation Backlogs and Build Back Better

6. Key service delivery approaches to clearing immunisation backlogs primarily include periodic intensification of routine immunisation (PIRI), supplementary immunization activities (SIAs), and catch-up immunisation campaigns.
7. In many countries, the magnitude of the backlog and approach to the catch up has been based on their strength in planning and maintenance and mitigation strategies.
8. The pandemic highlighted the importance of building trust in immunisation. Addressing vaccine hesitancy can take the form of continuous and persistent broadcasting of correct immunisation messages to increase community knowledge and health seeking behaviour. Involving respected stakeholders, such as religious and other key community leaders, can help to build trust, which can be crucial for vaccine acceptance.
9. The operational challenges many countries faced in rolling out COVID-19 vaccination could have been tackled more easily if they had an existing electronic immunisation registry in place, which many countries are now motivated to build.
10. As countries aim to build back better, they need to employ measures to strengthen routine immunisation (including by leveraging COVID-19 integration), address missed opportunities for vaccination, and reach zero-dose and under-immunised children.

INTRODUCTION

During the first two years of the COVID-19 pandemic, routine immunisation delivery was badly affected in many countries. Disruptions to routine immunisation services resulted in an estimated 25 million children missing out on basic vaccines globally in 2021 alone (WUENIC, 2022), and contributed to outbreaks of other vaccine preventable diseases, including measles and polio.



Coverage declines resulted from a variety of factors, including the impact of lockdowns, travel restrictions, the effects of illness and COVID-19 duties on health worker availability, the introduction of infection control measures that slowed service delivery, public fears about attending health facilities, among others. Consequently, routine immunisation services were discontinued or delayed in many countries, resulting in immunisation backlogs.

Though many of the drivers of these declines in coverage have eased significantly as the world learns to live with COVID-19, immunisation coverage levels continue to be adversely affected in many countries, including middle-income countries that have transitioned from receiving Gavi

support. Recent WHO/UNICEF estimates on immunisation coverage (WUENIC, 2022) highlight these declines from 2019–2021, especially severe in two former Gavi countries in the Asia Pacific region – Indonesia and Viet Nam (see chart).

There has been little published about what countries actually experienced during the pandemic from their perspective, including how and by what pathways COVID-19 caused immunisation backlogs. Countries have attempted a variety of measures to mitigate the impact of the pandemic and clear backlogs, but many of the strategies, lessons learned, and best practices have yet to be shared. The Linked workshop was designed to facilitate country experience-sharing to identify promising practices to clear immunisation backlogs and strengthen immunisation programs to better withstand health system disruptions in the future.

UNDERSTANDING IMMUNISATION COVERAGE THROUGHOUT THE PANDEMIC

During the workshop, country government teams reflected on key stressors that disrupted routine immunisation services and contributed to immunisation backlogs during different phases of the pandemic. While there was variability, the most common stressors across countries are below.

Primary Health System Stressors

Service Delivery Disruptions	Movement restrictions were common, such as lockdowns, border closings, travel restrictions, school closings, and social distancing measures. These restrictions prevented health workers (HWs) from providing services and health seekers from receiving them, and also led to supply shortages and delays due to disruptions in global supply chains.
Human Resource Challenges	Many countries experienced HW shortages due to the large number deployed to COVID-19 response, which was often reduced even further by illness or illness prevention measures. Many HWs endured work in stressful, high-risk environments due to long hours and access to limited personal protection equipment (PPE). HW burnout was common, and immunisation programmes had difficulty managing and retaining adequate staff.
Data Availability and Quality	Efficient tracking and management of vaccine supply and delivery was a challenge for many countries. This contributed to vaccine shortages and wastage, inadequate allocation of limited resources, and increased operational costs overall. Few countries had adopted or taken initial steps to establish electronic immunisation registries (EIRs) before the pandemic. This was a significant disadvantage for both COVID-19 and routine immunisation programme planning and implementation.
Community Perceptions	While fear of exposure to COVID-19 prevented many health seekers from visiting clinics to receive essential vaccines, negative perceptions of the COVID-19 vaccine due to fear of adverse events following immunisation (AEFI), lack of trust in the health system, religious/cultural beliefs, or misinformation contributed to vaccine hesitancy and refusal. This COVID-19 vaccine hesitancy also had implications for the acceptability of routine immunisation services.

Disproportionate Impact of Disruptions

Disruptions to routine immunisation service delivery impacted some populations more than others. In Bhutan, Indonesia, and Viet Nam, those living in urban areas were more likely impacted than those living in rural areas. For example, in Viet Nam, higher population density in urban areas contributed to the spread of COVID-19, resulting in service delivery and human resource challenges. Service disruptions may not have been as severe for those with higher incomes since they were more likely able to bring their children to the private sector to receive vaccines.

KEY MITIGATION STRATEGIES

Countries employed a variety of approaches to address health system stressors, with varying degrees of success. The exchange between countries at the workshop made clear that, when it comes to mitigation strategies, one size does not fit all. However, there were many commonalities among countries in the mitigation strategies they used. Select approaches are summarized below.

Addressing Service Delivery Disruption

Granting exceptional status to mothers and children: Bhutan, the Philippines, and Sri Lanka instituted special guidelines to allow mothers and children to access essential maternal and child health (MCH) services during lockdowns. For example, Bhutan allowed for a MCH Handbook “Pass” – MCH cards permitting movement of mothers during lockdown. In the Philippines, women with vaccine cards were also treated as exceptional, even being accompanied by health workers to obtain access to services.

Reaching the hard-to reach: Bhutan expanded services through mobile vaccination clinics whereby vans provided door-to-door services for disabled populations. Pakistan also engaged a door-to-door approach through outreach sessions to reach zero-dose children.

Modifying service delivery points: Some countries – such as Pakistan, Sri Lanka, and Viet Nam – allowed for vaccination at curative care facilities (also administering birth dose) in addition to routine clinics. Countries also expanded services using mass vaccination sites, temples, welfare and youth centers, etc.

Devising a multisectoral response: Many countries engaged the private sector in immunisation delivery, such as Indonesia, Sri Lanka, and Viet Nam.

Extending service hours: Countries experimented with extending service hours. For example, Sri Lanka extended vaccination clinic hours using an appointment system. The Philippines employed a policy that “every day is an immunisation day”.



Accelerating school immunisation: Sri Lanka was unable to deliver vaccinations through its school-based program during prolonged closures, pivoting to vaccination of school children at local clinics and hospitals to prevent large backlogs from developing.



Integrating routine immunisation with other services:

Some countries improved service accessibility by integrating routine immunisation (RI) with COVID-19 vaccination sessions. Sri Lanka relied on this approach particularly during booster campaigns. The Philippines also made RI and COVID-19 vaccines available at the same sites. For outreach visits, Indonesia HWs administered both vaccines, using one vaccine carrier box for RI and another for COVID-19. Countries also integrated RI with other services, such as Sri Lanka where RI and other MCH services were co-delivered during synchronous clinics.

Adjusting approaches based on geographic severity:

Bhutan implemented a time-bound zoning system for targeted service delivery during lockdowns and travel restrictions. Certain Indian states also used a traffic light

zonal system to target the population based on positivity rates by geography. Zoning was used in the Philippines as well to designate densely populated areas as low or high risk.

Addressing Human Resource Challenges

Providing surge capacity: Responding to HW shortages, Bhutan [provided surge capacity](#) by engaging village HWs, retired and trainee HWs, and specially trained first responders (e.g., firefighters) called Desuups. Indonesia, Sri Lanka, and Viet Nam expanded their health workforce by [mobilizing the military](#) to support COVID-19 response and continued vaccination services. The Philippines relied on allied health professionals to support the immunisation programme.

Deploying HWs based on need: Bhutan also launched a Regional HR Hub model to map HWs and allocate human resources based on shortages.

Offering incentives: Bhutan [used incentives](#) to motivate and retain HWs, including offering a daily subsistence allowance (DSA), refreshments, mobile vouchers, and advanced training opportunities. Incentives were also an important part of HW engagement in the Philippines, with transport support offered to HWs to enumerate, identify, and convince people to be vaccinated. Viet Nam provided select HWs with small incentives from local governments or international support as a reward for additional work. Nonmonetary incentives were also used, for example by Sri Lanka, where Facebook posts and signs and paintings along the road were used to motivate HWs.

Addressing Data Availability and Quality

Leveraging existing systems: During the pandemic, Viet Nam was able to clone their preexisting [EIR for routine immunisation](#), the National Immunization Information System (NIIS), to track and manage COVID-19 vaccinations. Scaling the NIIS to integrate COVID-19 vaccinations was a challenge because at the time, the platform only included children under 5 and was unable to

cover the entire population. The country is in the process of integrating platforms so that the NIS is a fully functional EIR.

Building new systems: Previously using a paper-based system and other digital platforms to track vaccinations, Bhutan established a COVID-19 registry – the Bhutan Vaccine System – during the pandemic. Different modules allow provider recording of vaccine doses, and provider/self-reporting of AEFIs, while a mobile app gives individuals access to their vaccination history. Going forward, Bhutan plans to incorporate routine vaccines into the system and integrate the registry with other global systems, such as DHIS2 and epi GPS tracker.

Relying on existing monitoring approaches: Other countries relied on their existing approaches to data management, such as in Sri Lanka, where backlogs were identified and managed through continuous monitoring and supervision of EPI coverage data and administrative coverage. Additionally, good record keeping of birth registers aided the identification of missed children to be targeted during pandemic valleys.

Addressing Community Perceptions

Addressing vaccine hesitancy: Vaccine hesitancy was low in most of the countries that attended the workshop. However, in Indonesia, community perceptions played a large role in disruptions to routine immunisation. In a 2020 survey conducted by the Ministry of Health and UNICEF, [68.5% of respondents](#) reported that they were afraid of contracting COVID-19 during vaccination, while 31.5% of respondents reported some other reason for hesitancy. To address this community perception, the country developed additional technical guidelines for safe immunisation services during COVID-19, along with an immunisation refresher training course for HWs, and an Information, Education, and Communication (IEC) campaign. They also scheduled advocacy meetings to address key drivers of vaccine hesitancy and refusal, including safety, fear of multiple injections, and whether the vaccine was halal/haram, and offered different COVID-19 vaccine brands to increase acceptability.

Advocating for immunisation: While community perceptions were less of a challenge in Bhutan, the country engaged village leaders and other key stakeholders (i.e., village health workers, Gups, and Tshokpas) to advocate on the importance of immunisation to communities.

Offering incentives: Some countries offered incentives to the community as a way to encourage vaccination. For example, the Philippines offered transport support to mothers and caregivers to seek vaccination services, especially for geographically isolated populations.

KEY TAKEAWAYS FOR CLEARING BACKLOGS AND BUILDING BACK BETTER

Countries are working hard to clear immunisation backlogs while continuing to provide routine immunisation. At the workshop, country teams shared approaches they are taking to clear backlogs that built up, primarily including periodic intensification of routine immunisation (PIRI), supplementary immunization activities (SIAs), and catch-up immunisation campaigns. They also shared how they are building back better, including measures to strengthen RI, [leverage COVID-19 integration](#) to improve RI, address [missed opportunities for vaccination](#), and [reach zero-dose and under-immunised children](#).

Restoring routine immunisation services to catch up missed children

Countries likely need to employ a variety of methods to effectively restore routine immunisation services to catch up missed children. In many countries, the frequency and approach to the catch up has been based on how well they planned – i.e., how many rounds of PIRI and outreach they were able to do during the pandemic. Bhutan and Sri Lanka, for example, were able to prevent large backlogs from developing in the first place due to successful maintenance and mitigation strategies.

Focused on restoring services, most countries are relying on a combination of SIAs and catch-up immunisation campaigns. In Indonesia, this included the National Childhood Immunization Month (BIAN) initiative with SIAs providing one dose of the measles-rubella vaccine for children under age 15, and catch-up campaigns for routine immunisation, including the polio vaccine for children under the age of 5. Other countries, such as Viet Nam and the Philippines, are employing a mix of SIAs, catch-up campaigns, and mop-up immunisation activities to address backlogs. Reliance on PIRI in some Indian states took the form of a mix and match approach, utilizing campaigns and RI methods depending on need in different districts.

Strengthening institutional capacities to plan and deliver sustained, equitable immunisation programmes, as a platform for broader PHC delivery

One of the most salient takeaways of the workshop was the importance of having well established, time-tested public health infrastructure with integrated public health service delivery at all levels, since stronger health systems fared better during the pandemic. Sri Lanka benefited from a strong, integrated health system before the pandemic, which proved to be more resilient to COVID-19 stressors and allowed the country to sustain most EPI program activities throughout pandemic peaks. Some of the key enabling factors included the existence of well-established public health infrastructure, the [integration of the immunisation programme into the broader PHC](#) service delivery system, an inbuilt routine monitoring and evaluation mechanism for the EPI programme, and the availability of a free healthcare delivery system. Other contributing factors include a well-organized school health programme and a strong partnership between the health and education sectors.

Another takeaway was the emphasis on relying on tried-and-true approaches rather than reinventing the wheel with new innovations – essentially doing existing processes well. The importance of strengthening institutional capacities was discussed for population enumeration, coordination among providers, comprehensive microplanning, effective service delivery leveraging known approaches, and monitoring systems. Additionally, the importance of good management practices, such as supportive supervision, cannot be overemphasized.

Increasing community demand for and confidence in vaccines and immunisation services, including among communities with children who missed routine immunisations

The pandemic highlighted the importance of building trust in both immunisation services and the broader health system as a whole. This was an issue in high, low, and middle-income countries alike, with trust issues varying between cultures, populations, and socioeconomic levels. As noted above, vaccine hesitancy was a big issue in Indonesia, and the country's continuous and persistent broadcasting of correct immunisation messages to increase community knowledge and health

seeking behaviour was especially helpful. Indonesia also involved religious leaders and other key community leaders to help build trust, which was crucial for acceptance. Sri Lanka is a good example of how low vaccine hesitancy and high trust in EPI services prevented the harshest effects of backsliding.

Ensuring availability of timely and high-quality data

The operational challenges many countries faced in rolling out COVID-19 vaccination could have been tackled more easily if they had an existing EIR in place. Viet Nam's ability to clone their EIR to track and manage COVID-19 vaccination exemplifies the benefits, and through this process, the government was also able to build more support for electronic systems as a whole. Immunisation stakeholders saw first-hand that the platform was easy to use, could reduce workload, and could generate reports quickly. This also had broader implications for the acceptability of other digital health strategies.

Resources from the workshop, including all presentations and country posters, are available at: www.linkedimmunisation.org/resources/linked-workshop-clearing-immunisation-backlogs-and-building-back-better-in-the-wake-of-covid-19.