

The Impact of COVID-19 on Immunization Services

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There was a time when epidemics were of interest only to historians. In spite of the knowledge of the risks of emergent infectious diseases, Coronavirus disease of 2019 (COVID-19) managed to disrupt the entire world. This new virus has the capacity to evade, adapt, diversify and persist. Human factors such as global travel, human-animal contact, urban crowding and ecological changes have helped favor the rapid spread. Epidemics are known to eventually resolve, whether succumbing to societal action or having exhausted the supply of susceptible victims.[1] COVID-19 too will be contained but it will leave a trail of devastating health consequences for low- and middle-income countries (LMIC) including Nepal.

When governments responded in the hopes of slowing the course of the pandemic and reducing the total mortality, stringent controls were implemented, including school closures, bans on public gatherings, and other forms of isolation or quarantine.[2] In Nepal, a nationwide complete lockdown commenced on the 24th March, 2020. This brought about a drastic decrease in demand for hospital services, mainly due to inaccessibility or the health care seekers' apprehension of contracting

the virus during a hospital visit. Elective surgeries and procedures were temporarily discontinued and preventive care such as antenatal and well-baby visits came to a complete halt in majority of the institutions nationwide. Although mortality rates for COVID-19 appeared to be low in children and in women in the reproductive age,[3] these groups might be disproportionately affected by the disruption of routine health services, particularly in LMICs.

This pandemic has had a huge impact on ongoing preventive public health programs, including immunization services. In the wake of the lockdown, many health centers, both urban and rural, had no choice but to temporarily pause vaccination clinics. Interruption in these routine immunization programmes, outreach services and preventive vaccination campaigns was further accentuated by the lack of definite decision from higher authority. The issue was made more complex by the break in supply and distribution chain and hesitation of vaccinators to continue their services. Based on the research by John Hopkins Bloomberg School of Public Health[4], a press statement was released by the United Nations Children's Fund (UNICEF) in mid-May warning that researchers an estimated of 4000 children are in the risk of dying within the next six months in Nepal alone. Our country cannot afford to lose momentum on the decades of progress we have made to reduce child mortality rates. Lost income, increased prices, and overburdened social safety nets will push vulnerable groups further into poverty and increase financial and other barriers to health-care access.[4] This study further explains how four health system components affect coverage of services: availability of health workers, availability of supplies and equipment, demand for services, and access to services. If we directly translate this into immunization services, it becomes clear on how the pandemic can affect the provision

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and utilization (Figure 1).

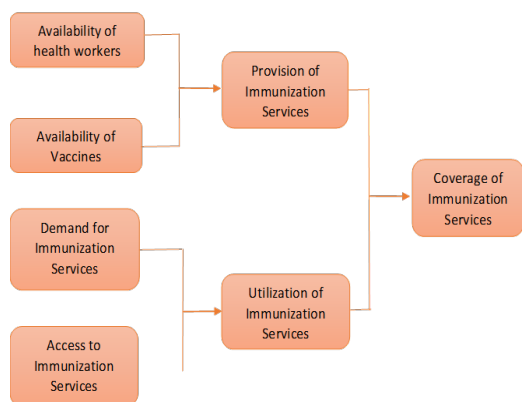


Fig. 1. Framework for the effects of health system components on coverage of immunization services.

World Health Organization (WHO) released operational guidance for maintaining essential health services and adapting service delivery platforms to avoid interruptions.[5] The Department of Health Services, Ministry of Health and Population, Nepal also eventually took out a statement in relation to recommencement of routine immunization services and set out important guidelines:[6]

1. Maintain social distancing while conducting immunization services.
2. Screening children for detection of ‘fever and dry cough’ prior to vaccination.
3. Management of personal protection for safety of Health Care Workers (HCW).
4. Manage immunization to all targeted (15 months and below) children.
5. To inform and co-ordinate implementation of immunization services to local administration, local levels and all stakeholders.

There were some institutions, such as Kathmandu Medical College Teaching Hospital, who were able to resume their vaccine clinics, however most failed to do so. There was an atmosphere of general confusion and a palpable lack of leadership and initiative. From a health worker’s perspective, they lacked clear instructions and struggled to find a way to commute to their respective workplaces. Majority of them also had to deal with the uncertainty of their own safety and protection, whereas some were diverted to COVID-19 activities.

The country has to be even more prepared for what will happen in the years to follow, than the pandemic itself. There will be a rise in the proportion

of malnourished children, in turn making them susceptible to infections and affecting childhood mortality in the long term. With international and domestic disruption of supply chains, there is bound to be a shortage of vaccines and essential treatments such as oral rehydration solution along with common antibiotics used in Community-Based Integrated Management of Neonatal and Childhood Illnesses (CB-IMNCI). Provision and utilization of reproductive and maternal care has had an adverse effect by the response to the pandemic which will give a secondary rise to neonatal sepsis. General well-being of children is at stake as millions of children are forced out of school, taking a toll on their mental health and making them more prone to child abuse.

We may not experience the full immediate effects of decreased vaccination in countries with high coverage rates, as certain vaccines like *Haemophilus influenzae type b* vaccine and pneumococcal conjugate vaccines have herd effect protection[7] which will gradually wane over the following months. However, even short gaps in vaccination coverage can result in overall declines in population coverage, and catch-up campaigns should be prioritized aftermath the COVID-19 pandemic. [8] The longer that coverage reductions continue, the more lives will be lost and, vaccine preventable diseases like polio, diphtheria and measles will resurface.

Has the world done more collateral damage in a bid to stop the spread of COVID-19? Leaders should be taking immediate actions now, from accelerating work on treatment and vaccines to investing in disease surveillance and strengthening primary health care systems in LMICs.[9] As the pandemic continues to weaken the health system and disrupt routine services, we should be prepared to deal with the health consequences which are likely to reverberate for decades to come. The choices our government and policy makers make would now be crucial to dictate the peak of child mortality rates and how quickly our nation would recover.

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