

Immunization during COVID-19: let the ninja dance with the dragon

Sanjeev Singh

*University School of Medicine and Paramedical Health Sciences,
Guru Gobind Singh Indraprastha University, New Delhi, India*

Sruti Singha Roy

*Department of Molecular Biology and Biotechnology, University of Kalyani,
Kolkata, India, and*

Kirti Sundar Sahu

*School of Public Health and Health Studies (SPHHS), University of Waterloo,
Ontario, Canada*

Abstract

Purpose – Throughout history, pandemics have played a significant role in reshaping human civilizations through mortalities, morbidities, economic losses and other catastrophic consequences. The present COVID-19 pandemic has brought the world to its knees resulting in overstretched healthcare systems, increased health inequalities and disruptions to people's right to health including life-saving routine immunization programs across the world.

Design/methodology/approach – This is a commentary paper.

Findings – Immunization remains one of the most successful, safe, cost-effective and proven fundamental disease prevention measures in the history of public health. However, the COVID-19 pandemic has effectively thrown the world's immunization practices out of gear, depriving approximately 80 million infants, in rich and poor countries alike, at risk of triggering a resurgence of vaccine-preventable diseases such as diphtheria, measles and polio. It is estimated that each COVID-19 death averted by suspending immunization sessions in Africa could lead to 29,347 future deaths due to other diseases including measles, yellow fever, polio, meningitis, pneumonia and diarrhoea.

Originality/value – The value of implementing robust immunization policies cannot be underestimated. Risks associated with postponing immunization services and the fact that COVID-19 is now an integral part of human civilization have resulted in several countries making special efforts to continue their immunization services. However, critical precautionary measures are warranted to prevent COVID-19 among healthcare service providers, facilitators, caregivers and children during the immunization sessions.

Keywords COVID-19, Coronavirus, Pandemic, Immunization, Vaccination, Vaccine

Paper type Commentary

COVID-19: the dancing dragon

Throughout history, microorganisms have played a significant role in reshaping human civilization and have claimed immeasurable mortalities, morbidities, economical losses and socio-physiological consequences. Many times, these natural predators have transformed the power dynamics and have brought the world to its knees. This story continues with a new coronavirus strain, Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-CoV-2), the seventh member of the coronavirus family causing novel Coronavirus-19 (COVID-19) disease, which originated and was first reported in Wuhan, China on December 31, 2019, with



animal-to-human transmissions, followed by sustained human-to-human transmissions. SARS-CoV-2 mainly infects humans through respiratory droplets, contact routes and may invade the human body through the conjunctiva via aerosol exposure or hand-to-eye contact. It spreads via aerosols as it remains viable and infectious in aerosols for several hours and on surfaces for days. These characteristics along with other supporting factors made this virus reach every corner of the globe resulting in a “Public Health Emergency of International Concern (PHEIC)” as stated on January 30, 2020, by the World Health Organization (WHO) [1–3].

Impact: the hidden cost

The COVID-19 pandemic continues to have a devastating impact on health, economies and societies by infecting 83,928,600-plus people and killing more than 1,828,180 people worldwide (as of 1 January 2021). As there is currently no proven cure, no natural immunity and no vaccines, it can infect and kill millions more in days to come. This has resulted in overstretched healthcare systems, exacerbated health inequalities and disruptions to people’s right to health including the life-saving Universal Immunization Program (UIP). This is due to challenges such as hesitation to go out because of travel restrictions or lockdowns, lack of information, fear of COVID-19 infection, overstretched healthcare delivery systems, healthcare service providers deployed to pandemic duties, socio-physiological pressures and lack of protective gear. The COVID-19 crisis has an immense adverse impact on global health programs depriving healthcare services to millions of kids, pregnant women, adults and the elderly population and has put them at risk of other non-COVID life-threatening diseases. Basic healthcare services such as antenatal and postnatal services, vaccination, mental health and screening of non-communicable diseases have been brought to a halt due to rising numbers of COVID-19 cases. The number of people impacted directly or indirectly by this disease has been greater than any other pandemic in recent history. COVID-19 has delayed or halted global immunization practices and is at risk of triggering a resurgence of other vaccine-preventable diseases (VPDs) like diphtheria, measles and polio. During the Ebola outbreak in Congo, 2,264 people were killed, but approximately three times more people (6,500) died of measles due to the compromised immunization services during 2018–2020. A recent modelling study suggests that each COVID-19 death averted by suspending immunization sessions in Africa could lead to 29–347 future deaths due to other diseases including measles, yellow fever, polio, meningitis, pneumonia and diarrhoea [4–7].

Immunization: the great ninja

Immunization remains one of the most successful, safe, cost-effective and proven fundamental disease prevention measures in the history of public health. It averts approximately 2 to 3 million deaths each year around the world. It is considered a public good that has moved to centre stage as one of the vital driving forces in reducing under-five deaths (child mortality) due to VPDs. Besides, it also provides a range of other benefits such as disease control and elimination, drug resistance prevention and overall psychosocial and societal well-being [8]. Each year, more than 19 million children do not receive the vaccines they need to live healthy lives. We need better systems for vaccine delivery that can reach and protect all children, no matter where they live. Unfortunately, COVID-19 has set vaccine coverage back about 25 years in about 25 weeks [9].

Understanding the value of immunization, the risks associated with postponing immunization services, and the fact that COVID-19 is now an integral part of human civilization, several countries like Uganda, Lao DPR and some states in India are making special efforts to continue their immunization services. However, utmost priority is warranted to prevent SARS-CoV-2 infection among healthcare service providers, facilitators, caregivers and children during the immunization sessions. Here, we list some of the universal critical precautionary measures [6, 10].

Capacity building

- (1) The country should develop comprehensive guidelines with regular reviews and updates for organizing immunization services during and after the COVID-19 outbreak considering the virus's pathology, local epidemiology, health system characteristics and various prevailing circumstances to ensure its effective management.
- (2) Immunization practices could be used as opportunities to disseminate messages to encourage behaviours to reduce the risk of the SARS-CoV-2, to identify signs and symptoms of COVID-19 disease including its surveillance and to provide guidance on what to do if there's a potential infection.
- (3) Maximize the use of existing digital health platforms for capacity building initiatives on immunization and COVID-19.

Immunization session

- (1) Designate dedicated space and healthcare service providers only for immunization services.
- (2) Ensure adequate vaccine supplies, sessions and other essential health services related to logistics and human resources to avoid any missed opportunities.
- (3) Pre-identified, well-ventilated seating areas with demarcated seating arrangements, at least one meter apart.
- (4) If required, plan an approach to serve 4-5 beneficiaries per hour to avoid crowding – plan for alternative sites, breakup sessions, additional session days and mobile team approach.
- (5) Provide a hand hygiene facility and masks for public use at the entrance to the health facility.
- (6) Screening of beneficiaries and caregivers for flu-like symptoms. Medical consultancy as per existing COVID-19-related guidelines.
- (7) Use of appropriate masks and gloves by the service providers and the support staff. Sanitize hands after immunizing each child and strictly follow the infection prevention and control (IPC) measures.
- (8) Explore every opportunity to create awareness on routine immunization, nutrition of pregnant women, breastfeeding, COVID-19 disease and its individual prevention measures.
- (9) Standard disinfection procedures before and after the immunization sessions.
- (10) Strengthen supportive supervision for immunization sessions, social distancing and other IPC measures.

Beneficiary mobilization

- (1) Effective communication and engagement with parents, caregivers and communities to allay concerns, enhance community linkages and re-establish demand for immunization services.
- (2) Clear communication to parents or caregivers about session site, day, time and services planned.

- (3) Request only one caregiver (preferably no older people) with each child to avoid overcrowding and maintain effective social distancing.
- (4) Motivate caretakers and children, except infants, to wear a homemade mask and practice hand hygiene.
- (5) Anyone suffering from flu-like symptoms (fever, cough or shortness of breath) should avoid attending the immunization session and seek medical attention as per existing COVID-19-related guidelines.

To close the immunity gap, countries could reinstate immunization services once evidence is available on the reduced transmission of the virus benefits weighed against harms. This could be done through mass vaccination campaigns or catch-up rounds as early as possible. However, countries should always practice appropriate strategies or protocols that respect the principle of do-no-harm and limit transmission of COVID-19 while providing immunization services [6].

References

1. Binti Hamzah FA, Lau C, Nazri H, Ligot DV, Lee G, Tan CL, Shaib MKBM, Zaidon UHB, Abdullah AB, Chung MH, Chun CH, Chew PY and Salunga RE. CoronaTracker: worldwide COVID-19 outbreak data analysis and prediction. [Preprint]. Bull World Health Organ. E-pub: 2020. doi: [10.2471/BLT.20.255695](https://doi.org/10.2471/BLT.20.255695).
2. Petropoulos F, Makridakis S. Forecasting the novel coronavirus COVID-19. PLOS ONE. 2020; 15(3): e0231236.
3. Lee YH, Auh QS. Strategies for prevention of coronavirus disease 2019 in the dental field. Oral Dis. 2020 Apr 19. doi: [10.1111/odi.13361](https://doi.org/10.1111/odi.13361).
4. Worldometer: Countries where COVID-19 has spread. [cited 2021 January 1]. Available at: <https://www.worldometers.info/coronavirus/countries-where-coronavirus-has-spread/>.
5. GAVI: The Vaccine Alliance. COVID-19. [cited 2020 June 15]. Available at: www.gavi.org.
6. World Health Organization [WHO]. Maintaining essential health services: operational guidance for the COVID-19. Geneva: WHO; 2020.
7. Hirabayashi K. The impact of COVID-19 on routine vaccinations: reflections during world immunization week 2020. Bangkok: UNICEF East Asia and Pacific; 2020. [cited 2020 June 15]. Available at: <https://www.unicef.org/eap/stories/impact-covid-19-routine-vaccinations>.
8. Singh S, Sahu D, Agrawal A, Vashi MD. Ensuring childhood vaccination among slums dwellers under the National Immunization Program in India - challenges and opportunities. Prev Med. 2018 Jul; 112: 54-60. doi: [10.1016/j.ypmed.2018.04.002](https://doi.org/10.1016/j.ypmed.2018.04.002). Epub 2018 Apr 4.
9. Exemplars in Global Health. Topic area: vaccine delivery. [cited 2020 October 20]. Available at: https://www.exemplars.health/topics/vaccine-delivery?utm_source=organic&utm_medium=twitter&utm_campaign=202010196-VD-egh-or-tw-gen-gen.
10. India, Ministry of Health and Family Welfare. Immunization services during and post COVID-19 outbreak. [cited 2020 June 15]. Available at: <https://www.mohfw.gov.in/pdf/3ImmunizationServicesduringCOVIDOutbreakSummary150520202.pdf>.

Corresponding author

Sanjeev Singh can be contacted at: sanjupt@gmail.com

For instructions on how to order reprints of this article, please visit our website:

www.emeraldgrouppublishing.com/licensing/reprints.htm

Or contact us for further details: permissions@emeraldinsight.com