

Commentary

World Immunization Week: Immunization of Healthcare Workers – A reminder

Ashish Trivedi¹

1. Independent researcher

World Immunization Week highlights and promotes childhood as well as adult vaccination to protect high-risk groups against vaccine-preventable diseases. Healthcare workers (HCWs) are the backbone of the healthcare system, however, they are exposed to multiple biological hazards, mainly communicable diseases at work while dealing with patients. The protection of health workers through vaccination is an important part of patient safety and infection prevention and control programmes in healthcare settings. This article is a reminder for the implementation of immunization programmes for HCWs at various levels to ensure complete vaccination and protection of this high-risk occupational group for the smooth functioning of healthcare facilities.

World Immunization Week is celebrated in the last week of April, to highlight and promote childhood as well as adult vaccinations to protect people of all ages against vaccine-preventable diseases ^[1]. Healthcare workers (HCWs) are the ones who work in a health or social care setting, including healthcare students, frontline as well as other healthcare workers, who are the backbone of the healthcare system. However, HCWs are exposed to multiple biological hazards, mainly communicable diseases at work while dealing with patients as well as contaminated body fluids and instruments. Susceptible and infected HCWs can also contribute to nosocomial transmission of such diseases to vulnerable patients and co-workers ^[2].

For prevention and control of these biological hazards, protection of health workers through vaccination is an important part of patient safety and infection prevention and control programmes in health-care settings over and above the other infection prevention and control measures like hand hygiene, respiratory hygiene, safe collection and disposal of healthcare waste and use of appropriate

personal protective equipment ^{[2][3]}. The coronavirus disease 2019 (COVID-19) pandemic highlighted the higher risk of exposure to the virus (SARS-CoV2) among HCWs and the challenges and burden faced by healthcare facilities due to Infections among health workers in view of a depleted workforce at a time when they were most needed. The pandemic has also highlighted the extent to which protecting health workers is key to ensuring a functioning health system and a functioning society. Considering these risks, HCWs were also prioritized during the early phase of the COVID-19 vaccination ^{[4][5]}.

The Advisory Committee on Immunization Practice (ACIP) of the Centre for Disease Control and Prevention (CDC), USA, recommends immunization of HCWs in three broad disease categories as below ^[6].

1. Those for which immunization of all adults is recommended like, tetanus, and diphtheria
2. Those for which active immunization is strongly recommended because of special risks for HCWs like, hepatitis B, influenza, measles, mumps, rubella, and varicella.
3. Those for which active and/or passive immunization of HCWs may be indicated in certain circumstances based on risk assessment like tuberculosis, hepatitis A, meningococcal disease and typhoid fever

Vaccine	Accepted Evidence of Immunity	Vaccination Recommendation
Hepatitis B	Documented level of hepatitis B surface antibody (≥ 10 mIU/ml) following completion of a course of hepatitis B vaccine.	Primary series: three doses at zero, one and six months at pre-employment if non-immune. Check anti-HBs one to two months post-completion to document immunity.
Influenza Vaccination	N/A	Annual vaccination.
Measles	<ul style="list-style-type: none"> Documented evidence of measles antibody (IgG) on serology; or Documented evidence of 2 measles-containing vaccines at least one month apart 	MMR vaccination for those who have no serologic evidence of immunity, two doses four weeks apart.
Mumps	<ul style="list-style-type: none"> Documented evidence of mumps antibody (IgG) on serology; or Documented evidence of 2 mumps-containing vaccines or 	MMR vaccination for those who have no serologic evidence of immunity, two doses four weeks apart.
Rubella	<ul style="list-style-type: none"> Documented evidence of rubella antibody (IgG) on serology; or Documented evidence of 2 rubella-containing vaccines or 	MMR vaccination for those who have no serologic evidence of immunity, two doses four weeks apart.
Varicella	<ul style="list-style-type: none"> Documented evidence of varicella antibody (IgG) on serology; or Documented evidence of age-appropriate varicella vaccination; or History of prior confirmed chickenpox or shingles 	For non-immune HCWs, two doses of the Varicella vaccine four to eight weeks apart.

Vaccine	Accepted Evidence of Immunity	Vaccination Recommendation
Meningococcal meningitis		One dose for those who are exposed to isolates of <i>Neisseria meningitidis</i> in the laboratory.
BCG		One dose to unvaccinated TST or IGRA-negative HCWs at a high risk of occupational exposure.
Diphtheria		Health workers who may have occupational exposure to <i>C. diphtheriae</i> should be vaccinated.
SARS-COV-2 (COVID-19)		Health workers should be included in the highest priority group for vaccination against COVID-19. Choice and schedule of vaccine should be as per their national/regional guideline and practice.

Table 1. Different vaccines and vaccination schedules recommended and followed by various national, and international agencies are as below ^{[3][7][8]}

In appreciation and gratitude for the efforts and dedication in the fight against COVID-19, the World Health Organization (WHO) designated 2021 as the year of health and care Workers (YHCW) to highlight the urgent need to invest in health workers and to ensure their protection and motivation to deliver safe health care at all times ^[4]. A recently published guideline on the implementation of occupational health and safety programmes for HCWs by the International Labour Organization (ILO) and World Health Organization (WHO) also recommends immunization of HCWs at no cost and ensuring receipt of all the required doses of the vaccine ^[9]. Recent studies have also found higher acceptance of Influenza vaccination uptake among HCWs during COVID-19 time with special

vaccination as well as awareness campaigns, these must be continued in future to enhance vaccine acceptance as well as coverage among HCWs to ensure smooth functioning of health system ^{[10][11]}.

References

1. [^]World Health Organization (WHO) (2023). World Immunization Week. Available at: <https://www.who.int/campaigns/world-immunization-week> (Accessed: April 25, 2023).
2. ^a, ^bWorld Health Organization (WHO) (2023). Occupational infections. Available at: <https://www.who.int/tools/occupational-hazards-in-health-sector/occupational-infections> (Accessed: April 25, 2023).
3. ^a, ^bWorld Health Organization (WHO) (2022). Implementation guide for vaccination of health workers. Available at: <https://www.who.int/publications/i/item/9789240052154>
4. ^a, ^bWorld Health Organization (WHO) (2021). Year of Health and Care Workers. Available at: <https://www.who.int/campaigns/annual-theme/year-of-health-and-care-workers-2021> (Accessed: April 26, 2023).
5. [^]World Health Organization (WHO) (2020). Protecting health workers from covid-19. Available at: <https://www.who.int/westernpacific/news-room/feature-stories/item/protecting-health-workers-from-covid-19> (Accessed: April 26, 2023).
6. [^]Centers for Disease Control and Prevention (CDC), USA (1997). MMRW: Immunization of health-care workers: Recommendations of the Advisory Committee on Immunization Practices (ACIP) and the Hospital Infection Control Practices Advisory Committee (HICPAC) (no date). Centres for Disease Control and Prevention. Available at: <https://www.cdc.gov/mmwr/preview/mmwrhtml/ooo50577.htm> (Accessed: April 26, 2023).
7. [^]UK Health Security Agency (U.K.H.S.) (2013) Immunisation of healthcare and laboratory staff: The Green Book, Chapter 12, GOV.UK. Available at: <https://www.gov.uk/government/publications/immunisation-of-healthcare-and-laboratory-staff-the-green-book-chapter-12> (Accessed: April 26, 2023).
8. [^]Centers for Disease Control and Prevention (CDC), USA. (2016). Recommended vaccines for healthcare workers. Available at: <https://www.cdc.gov/vaccines/adults/rec-vac/hcw.html#:~:text=Get%20a%20one%2Dtime%20dose,of%20Tdap%20during%20each%20pregnancy.> (Accessed: April 26, 2023).
9. [^]International Labour Organization (ILO) and World Health Organization (WHO) (2022) CARING FOR THOSE WHO CARE Guide for the development and implementation of occupational health and safety programmes for health workers. Available at

10. ^ΔMeckawy, R. et al. (2023) "Impact of covid-19 pandemic on health workers sentiment towards influenza vaccination: A literature review," *Population Medicine*, 5(April), pp. 1-13. Doi: <https://doi.org/10.18332/popmed/162880>.
11. ^ΔOgliastro M, Borghesi R, Costa E, Fiorano A, Massaro E, Sticchi L, Domnich A, Tisa V, Durando P, Icardi G, Orsi A. Monitoring influenza vaccination coverage among healthcare workers during the COVID-19 pandemic: a three-year survey in a large university hospital in North-Western Italy. *J Prev Med Hyg.* 2022 Oct 27;63(3):E405-E414. Doi: 10.15167/2421-4248/jpmh2022.63.3.2700.

Declarations

Funding: No specific funding was received for this work.

Potential competing interests: No potential competing interests to declare.