



Charles John Palenik

# Recommended Vaccines for Healthcare Workers

Centers for Disease Control and Prevention (CDC) recommend routine immunization to prevent 17 vaccine-preventable diseases that occur in infants, children, adolescents or adults. Of these, five are commonly recommended for healthcare workers (HCWs), including dental professionals.<sup>1,2</sup>

Immunization levels in the USA are high, making rates of vaccine-preventable disease very low. In 2011, only four cases of rubella, no cases of diphtheria, 36 cases of tetanus, and no wild-type polio were reported to CDC.<sup>1</sup>

Some diseases (like polio and diphtheria) are now very rare in the USA. Of course, they are uncommon largely because of vaccination coverage rates. But, it is still reasonable to ask whether it is worthwhile to keep vaccinating. If there are only a few cases of a disease today and we then take away the protection afforded by vaccination, more and more people would become infected. Diseases would stage a comeback. Before long, we would see epidemics. We vaccinate to protect our future.<sup>1,2</sup>

Resurgence of some vaccine-preventable diseases, such as pertussis, has occurred. Viruses and bacteria that cause vaccine-preventable disease and

death still exist and can be passed on to unprotected people or imported from other countries.<sup>2</sup>

HCWs are at risk from exposure to serious, and sometimes deadly, diseases. Those working directly with patients, or handling materials that could spread infection, should get appropriate vaccines to reduce their chances of being infected with or spreading vaccine-preventable disease. Vaccines protect HCWs, their patients and family members. It is imperative that HCWs are up-to-date with recommended vaccines.<sup>2</sup>

The five recommended vaccines, HCW immune status and recommendations are presented in Table 1. Also, meningococcal vaccine is recommended for HCWs routinely exposed to isolates of *Neisseria meningitidis* and involves one dose.

Hepatitis B virus (HBV) is spread through skin punctures or mucosal contact with infectious fluids, including blood and saliva, exposure to patient open wounds and needlesticks. HBV can survive outside humans and remain infectious for at least 7 days. Between 2%–6% of adults develop chronic infection, which can lead to cirrhosis and liver cancer. After three intramuscular doses of hepatitis B vaccine, more than 90% of healthy adults develop adequate antibody responses.<sup>3</sup>

Available data show that vaccine-induced antibody levels

decline with time. However, immune memory remains intact for more than 20 years following immunization. Those with declining antibody levels are still protected against significant HBV infection (eg clinical disease, HBsAg antigenemia, or significant elevation of liver enzymes). Exposure to HBV results in an anamnestic anti-HBsAg response that prevents clinically significant HBV infection. Chronic HBV infection has only rarely been documented among vaccine responders. The need for booster doses after longer intervals will continue to be assessed as additional information becomes available.<sup>3,4</sup>

Influenza is a serious disease that can lead to hospitalization and sometimes even death. Everyone needs an influenza vaccination every year. The seasonal flu vaccine protects against the influenza viruses that research indicates will be most common during the upcoming season. Infected HCWs can spread influenza to their patients, co-workers and families.<sup>3,4</sup>

If you are not already immune to measles, mumps or rubella, you should be vaccinated. Even mild or undetectable rubella disease during pregnancy can cause fetal anomalies. Measles can cause encephalitis, while mumps can cause swelling of the salivary glands and testicles. MMR vaccination is >90% effective against measles and rubella and 80% or more effective against mumps after two doses.<sup>3,4</sup>

Varicella can be transmitted

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Vaccine Applications	Situations and Recommendations
Hepatitis B	If you do not have documented evidence of a complete hepatitis vaccine series, or if you do not have an up-to-date blood test that shows you are immune to hepatitis B (eg no serologic evidence of immunity or prior vaccination), then you should: 1) get the 3-dose series (dose #1 now, #2 in 1 month and #3 approximately 5 months after #2) and 2) get anti-HBs serologic screening 1–2 months after dose #3.
Flu (Influenza)	Get 1 dose of influenza vaccine annually.
MMR (Measles, Mumps & Rubella)	If you were born in 1957 or later and have not had the MMR vaccine, or if you do not have an up-to-date blood test that shows you are immune to measles or mumps (eg no serologic evidence of immunity or prior vaccination), get 2 doses of MMR (1 dose now and the 2nd dose at least 28 days later). If you were born in 1957 or later and have not had the MMR vaccine, or if you do not have an up-to-date blood test that shows you are immune to rubella, only 1 dose of MMR is recommended. However, you may end up receiving 2 doses, because the rubella component is in the combination vaccine with measles and mumps. Although birth before 1957 generally is considered acceptable evidence of measles, mumps and rubella immunity, 2 doses of MMR vaccine should be considered for unvaccinated HCWs born before 1957 who do not have laboratory evidence of disease or immunity to measles and/or mumps. Those born before 1957 should visit <a href="https://www.cdc.gov/vaccines/hcp/acip-recs/vacc-specific/mmr.html">https://www.cdc.gov/vaccines/hcp/acip-recs/vacc-specific/mmr.html</a>
Varicella (Chickenpox)	If you have not had chickenpox (varicella), if you have not received the varicella vaccine or if you do not have an up-to-date blood test that shows you are immune to varicella (eg no serologic evidence of immunity or prior vaccination) get 2 doses of varicella vaccine, 4 weeks apart.
Tdap (Tetanus, Diphtheria & Pertussis)	Get a one-time dose of Tdap as soon as possible if you have not received Tdap previously (regardless of when a previous dose of Td was received). Get Td boosters every 10 years, thereafter. Pregnant HCWs need to get a dose of Tdap during each pregnancy.

**Table 1.** CDC Recommended Vaccines for Healthcare Workers (modified from References 2 and 3).

in hospitals by patients, staff and visitors. If you are not already immune based on a prior infection or prior vaccination, you should be vaccinated.

You need one dose of Tdap vaccine (tetanus, diphtheria and pertussis) and then a booster of Td vaccine every 10 years after your Tdap vaccine. You may need a Tdap dose now if you have direct patient contact or are injured.<sup>3,4</sup>

Immunization is a key component of a dental practice's infection control programme, which is a system of procedures and practices that, when successfully implemented, will minimize the risk of transmission of pathogenic micro-organisms. The goal is

to prevent healthcare-associated infections in patients and injuries and illnesses among HCWs.

### References

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