



衛生防護中心
Centre for Health Protection

Scientific Committee on Vaccine Preventable Diseases

Summary Statement on Vaccination Practice for Health Care Workers in Hong Kong

Background

Vaccination is one of the most effective tools to prevent infectious diseases. In particular, protection for health care workers (HCW) is essential. HCW are at risk for exposure to infectious diseases. HCW who work with direct patient contacts or handle infectious material could not only get infected, but also spread infections to susceptible patients. Many overseas authorities have recommended HCW to receive vaccination to reduce the chance of getting or spreading vaccine-preventable diseases.

Definitions

2. There is no universally agreed upon definition on HCW. Overseas health authorities vary in their definitions on HCW. In this context, HCW refers to personnel (including students and volunteers in health care disciplines) involving potential contact with patients, their blood or body substances in health care settings, and hence at potential risk of acquiring and transmitting infections in such settings.

Overseas recommendations / practice

3. While the World Health Organization (WHO) provides recommendation on vaccination of various diseases for healthcare workers, the practice for overseas countries vary. In general, vaccination against hepatitis B, measles, rubella, chickenpox and influenza among HCW were recommended.

Vaccine recommendations for HCW in Hong Kong

I) *Hepatitis B*

Recommendation: HCW should be immune to hepatitis B and post-vaccination serological status should be ascertained.

4. In view of the high prevalence of hepatitis B in the community and the risk posed to HCW, hepatitis B vaccination and ascertainment of response was

recommended for susceptible HCW since the 1980s. The practice and effectiveness of HBV vaccination among HCW was well validated.

5. In parallel with a falling trend of chronic hepatitis B infection in the community, the prevalence rate of HBsAg positivity of new Department of Health HCW recruits showed a decreasing trend from 6% in 2001 to 3.2% in 2015; and the number of notifications of “Parenterally Contracted Viral Hepatitis in health care workers” remains zero from 2006 to 2015.

6. Although hepatitis B vaccination is highly effective, hypo- or non-response may occur, especially in people of older age and immunocompromised status. Post-vaccination serological status should be ascertained for HCW. Measurement of post-vaccination serological response should be made at 1-4 months after the third dose to obtain the peak antibody levels. Though antibody levels will fall gradually over time, studies have also documented long-term protection in healthy individuals after a complete course of vaccination with antibody response. An anamnestic response to the subsequent challenge of hepatitis B exists regardless of the titre of anti-HBs at that time.

7. In the event of suboptimal antibody level, a three-dose regimen of hepatitis B vaccine should be offered to HCW with no or unknown history of receiving hepatitis B vaccination. If HCW have previously received a primary series of hepatitis B vaccination but the antibody level is suboptimal, one to three doses of hepatitis B vaccine should be offered coupled with serological testing. Those who have received six doses of hepatitis B vaccines yet the antibody level is suboptimal should be considered as non-responders or hypo-responders. Post-exposure prophylaxis has to be considered in the event of occupational exposure in future.

II) *Measles and rubella*

Recommendation: HCW should be immune to measles and rubella, by either vaccination or medical evaluation.

8. Measles is a highly contagious viral disease and measles outbreaks can result in epidemics. In Hong Kong, the measles incidence rate was maintained at less than 1 per 100 000 population in the past five years, with a total of seven outbreaks recorded involving two to five persons in each outbreak. Notably, among these seven outbreaks, five occurred in healthcare settings and one healthcare worker was involved.

9. Rubella is a contagious, generally mild viral infection. Infection in pregnant women can lead to fetal death or congenital rubella syndrome. Rubella incidence rate was below 1 per 100 000 population in the past five years, with only one home outbreak involving two persons recorded.

10. Immunity against measles may be ascertained by written documentation of vaccination with two doses of measles-containing vaccines administered at least 28 days apart, while that for rubella with at least one dose of rubella-containing vaccine. Other methods to ascertain immunity against measles or rubella may include laboratory evidence of immunity or laboratory confirmation of disease. HCW without evidence of immunity should be offered vaccination. Combined MMR vaccine is the preferred choice of vaccine as it confers protection against mumps as well. Schedule of MMR vaccination requires two doses of MMR vaccines given at least four weeks apart.

III) *Varicella (chickenpox)*

Recommendation: HCW should be immune to varicella. HCW with negative or uncertain history of receiving two doses of varicella vaccines or disease of varicella or herpes zoster should be serologically tested. Vaccines should be offered to those without varicella zoster antibody.

11. Varicella (chickenpox) is endemic in Hong Kong and is the most common notifiable infectious disease in Hong Kong. From 2012 to 2016, the incidence of varicella notification per 100,000 ranged from 108 to 152. Varicella primarily affects children as 73% of notifications from 2012 to 2016 were children aged 10 years or below. For the past five years (2012-2016), there were around 450-600 institutional outbreaks of varicella annually. Most occurred in primary schools, child care centers, kindergarten or day care institution.

12. The infection is generally self-limiting, except among immunocompromised patients and pregnant women. In health care settings, varicella infection requires infection control measures that are cumbersome, and the use of varicella-zoster immunoglobulin in prophylaxis is expensive. According to the serological surveillance conducted by the Public Health Laboratory Services Branch on serum specimens collected in 2015, 92% to 100% of adults aged 20 years or above were tested positive serologically for varicella antibodies.

13. HCW with (i) history of receiving two doses of varicella vaccine, or (ii) a definitive history of varicella or herpes zoster can be considered protected against varicella. HCW with a negative or uncertain history of vaccination or disease of varicella or herpes zoster should be serologically tested. Vaccines should be offered to those without varicella antibody. The schedule includes two doses of varicella vaccine, four to eight weeks apart.

IV) *Seasonal influenza*

Recommendation: HCW should receive seasonal influenza vaccination annually once the vaccine is available.

14. Seasonal influenza is associated with significant mortality and morbidity both globally and locally. WHO and overseas health authorities recommend that

HCW should receive annual seasonal influenza vaccination. According to WHO, there is scientific evidence for a protective effect of vaccinating HCWs against influenza infection and HCW is an important priority group for seasonal influenza vaccination, not only to protect the individual and maintain healthcare services during influenza epidemics, but also to reduce spread of influenza to vulnerable patient groups.

15. The SCVDP recommends annual seasonal influenza vaccination, with HCW being one of the priority groups. The government has been offering free seasonal influenza vaccination to HCW working in Department of Health, Hospital Authority or in the public health sector. Seasonal influenza vaccination coverage survey for the 2012/13 season revealed that the vaccination coverage was 28.6 to 44.9% in HCW in public health sector and 32.6% to 35.4% in HCW in private health sector. Promotion and facilitation of seasonal influenza vaccination should be done in healthcare organizations to improve the vaccination coverage.

V) Pertussis

16. Some countries recommend vaccination of HCW with acellular pertussis-containing vaccines, either in all HCWs or special groups of HCWs who are likely to have a more intensive contact with pregnant women, neonates and infants., However, according to WHO there is as yet no evidence on the effectiveness of vaccinating HCW as a strategy to prevent the acquisition and transmission of pertussis, and the duration of protection is uncertain. In this regard, SCVDP will continue to monitor the local epidemiology, international recommendations and evidence on acellular pertussis-containing vaccines among adults.

Summary

17. In order to protect HCW from being infected as well as to prevent the spread of infections to susceptible patients, SCVDP recommends:

- a. HCW should be immune to hepatitis B and post-vaccination serological status should be ascertained.
- b. HCW should be immune to measles and rubella, by either vaccination or medical evaluation.
- c. HCW should be immune to varicella. HCW with negative or uncertain history of receiving two doses of varicella vaccines or disease of varicella or herpes zoster should be serologically tested. Vaccines should be offered to those without varicella zoster antibody.
- d. All HCW should receive seasonal influenza vaccination annually once the vaccine is available.

18. Immune status of individual HCW should be assessed at the time of initial employment. A full vaccination history should be obtained and with documentation. The records of vaccination and serological status of each HCW should be kept by both employer and employee.

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