

Occupational Considerations for Immunization

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Health Care and Laboratory Workers

The following immunizations should be considered for Health Care Workers (HCWs) and Laboratory Workers which includes all hospital employees, other staff who work or study in hospitals (e.g., students in health care disciplines, volunteers and contract workers), and other health care personnel (e.g., those working in clinical laboratories, nursing homes, home care agencies and community settings), who are at risk of exposure to communicable diseases because of their contact with individuals or material from individuals with infections both diagnosed and undiagnosed:¹

➤ ***Tetanus and Diphtheria Toxoids (Td) and Diphtheria, Tetanus and Acellular Pertussis Combined Vaccine (dTap)***

- Primary immunization for tetanus and diphtheria is indicated for HCWs who have not had a primary series of tetanus-diphtheria-containing vaccines. A dose of an acellular pertussis-containing vaccine is also recommended; therefore, dTap should replace the first dose of Td in the primary series.
- As a high priority group, HCWs that provide care to children younger than 12 months of age and have not received a dose of an acellular pertussis-containing vaccine previously should receive a one-time dose of dTap. This dose should be administered as soon as feasible, regardless of the interval from the last dose of Td vaccine.²
- All other HCWs, who have not received a dose of an acellular pertussis-containing vaccine, should receive a one-time dose of dTap when presenting for a reinforcing dose of Td vaccine.

See *Biological Products* – Diphtheria, Tetanus and Pertussis-containing Vaccines.

➤ ***MMR Vaccine***

- **Measles:** HCWs, regardless of their year of birth without a documented history of two doses of measles-containing vaccine, history of laboratory-confirmed measles disease, or laboratory evidence of measles immunity should have two documented doses of a measles-containing vaccine.¹
- **Mumps:** HCWs, regardless of their year of birth without a documented history of two doses of mumps-containing vaccine or history of laboratory-confirmed mumps disease should have two documented doses of mumps-containing vaccine.^{1,3}
- **Rubella:** Individuals (male and female) who do not have documentation of one dose of rubella vaccine or rubella immunity and who may, through face-to-face contact, expose pregnant women to rubella are required under the *Communicable Diseases Regulation, Alberta Regulation 238/1985*⁴ to have documented immunity to rubella.

See *Biological Products* – Measles-mumps-rubella Combined Vaccines.

Note: Monovalent vaccines for each disease are not available; therefore, individuals requiring only one antigen should receive MMR combined vaccine.

➤ ***Meningococcal Vaccine***

- Laboratory workers who routinely manipulate *Neisseria meningitidis* should be offered meningococcal conjugate (groups A, C, Y and W-135) vaccine.

See *Biological Products* – Meningococcal Vaccines.

- Meningococcal vaccine is not routinely recommended for HCWs. It is recommended that HCWs use barrier precautions to avoid direct contact with respiratory secretions from any patient. For HCWs who experience a direct exposure to respiratory secretions of a patient with invasive meningococcal disease such as during intubation, resuscitation, or examination of the oropharynx (without a mask) chemoprophylaxis may be recommended.¹

See [Public Health Disease Management Guidelines – Meningococcal Disease, Invasive \(IMD\)](#).⁵

➤ **Polio Vaccine**

- Primary immunization for polio is indicated for HCWs who have not had a primary series of polio-containing vaccines providing direct patient care who may be exposed to patients excreting wild or vaccine strains of polio virus.¹
- Primary immunization for polio is indicated for laboratory workers handling specimens that may contain polio virus.
- Reinforcing doses of polio vaccine are generally not required.

See [Biological Products - Polio Vaccine](#) for specific indications.

➤ **Hepatitis B Vaccine**

Pre-exposure

- Provincially funded hepatitis B vaccine will be provided to HCWs, volunteers, or students of health-related disciplines who have a reasonable anticipated risk of exposure to blood/bloody body fluids and/or sharps injuries during the course of their work, including:
 - Individuals who puncture or cut another person's skin in the course of performing their duties. This includes those HCWs who administer injections; and
 - Individuals who handle or have contact with dirty sharps or blood/bloody fluids in the course of performing their duties.

See [Hepatitis B Risk Assessment for Paid Workers/Volunteers/Students](#).

Notes:

- Pre-immunization serology (including anti-HBs, HBsAg and antiHBc total) is recommended for the following HCWs and students in health care disciplines:
 - Individuals with a high probability of past infection;
 - Spouse or sexual partners and needle sharing partners of a hepatitis B case or chronic carrier;
 - Household contacts of a hepatitis B case or chronic carrier; and
 - Individuals who have emigrated from a country where hepatitis B is endemic.

See [Hepatitis B Virus Infection – High Endemic Geographic Areas](#).

- Post-immunization serology for anti-HBs is recommended for all HCWs and students in health care disciplines to establish antibody response and need for re-immunization should the first course of vaccine fail to provide protection. Serology should be done at least one month but not more than six months after completion of series.
 - Serology done one to six months following the primary series of hepatitis B vaccine: If the individual is negative for antibody after the first series, a second hepatitis B vaccine series should be administered, with repeat serology testing one month later.
 - If immunization was completed more than six months previously and post-immunization screening was not done, testing should be done as part of a routine assessment. If the individual is negative, the worker/individual should be given 1 booster dose of hepatitis B vaccine followed by serology one month later. If the individual is still negative after the 4th dose, the second series of hepatitis B vaccine should be completed followed by serology 1 month later.

Post-exposure

- Provincially funded hepatitis B vaccine is provided for post-exposure management in workplace settings.

- Occupational exposures to potentially infectious material should be managed according to the occupational health and safety guidelines of the workplace where the incident occurred or the worker's personal physician.

See [Biological Products - Hepatitis B Vaccine](#).

➤ **Hepatitis A Vaccine**

- HCWs are generally not eligible for hepatitis A vaccine. Laboratory workers may be eligible.

See [Biological Products - Hepatitis A Vaccine](#).

➤ **Influenza Vaccine**

- Annual influenza immunization is recommended for HCWs and other staff working with people who have contact with individuals at high risk for influenza. HCWs and their employers have a duty to actively promote, implement, and comply with influenza immunization recommendations in order to decrease the risk of infection and complications in the vulnerable populations for which they care.¹

See *Biological Products – Influenza Vaccines*.

➤ **Varicella Vaccine**

- HCWs should be screened for immunity to varicella and offered a vaccine if susceptible. Immunity to varicella is defined as positive varicella serology or documentation of two doses of varicella immunization.

See [Biological Products – Varicella Vaccine](#).

➤ **Typhoid Vaccine**

- Laboratory workers who regularly manipulate *Salmonella typhi* should be offered a typhoid vaccine.

See [Biological Products – Typhoid Vaccine](#).

Volunteers Working in Health Care Settings

- Volunteers working in health care settings with face-to-face patient contact should be assessed as HCWs for the following antigens: tetanus/diphtheria toxoids, acellular pertussis, measles, mumps, rubella, varicella and influenza. Some volunteers may also be at risk for hepatitis B through their volunteer work and should therefore be assessed for this vaccine.

Animal Care and Control Workers

➤ **Rabies Vaccine**

Pre-exposure - The following individuals should be offered pre-exposure rabies vaccine:

- Workers caring for animals, including: veterinarians, veterinary health technicians, veterinary assistants, and Humane Society/SPCA workers.
- Animal research workers, including: rabies laboratory workers and workers in other laboratories working with rabies-prone species.
- Animal control workers, including: bylaw officers, animal control workers, zoo workers and workers in animal shelters.
- Wildlife workers; including fish and wildlife workers and foresters.
- Spelunkers; those planning to spelunk in Alberta. Recreational spelunkers are not eligible for provincially funded rabies vaccine.

See [Biological Products – Rabies Vaccines](#).

Note: Employees under federal jurisdiction including Canadian Food and Inspection Agency (CFIA) and Parks Canada are not eligible to receive provincially funded rabies vaccine. These employees have occupational services provided by their employer.

Post-exposure

See *Biological Products*: [Rabies Immune Globulin](#), [Rabies Vaccine](#) and [Authorizing and Obtaining Rabies Post-exposure Biologicals](#).

➤ **Hepatitis A Vaccine**

- Hepatitis A vaccine is provided for specific occupational groups (e.g., zoo-keepers, researchers who handle non-human primates or are involved in hepatitis A virus research).

See [Biological Products – Hepatitis A Vaccine](#).

Child Care Workers

- Child care workers are at risk of exposure to communicable diseases from the contact they have with children. All staff of daycare facilities should ensure that they are immunized against rubella.⁴ In addition, child care workers should be encouraged to receive all routinely recommended vaccines for adults. Influenza vaccine is strongly recommended for everyone in Alberta, especially for those who care for children 59 months¹ of age and younger.

Other Occupational Groups at Risk

➤ **Hepatitis B Vaccine**

- Individuals who puncture or cut another person's skin in the course of performing their duties, should receive hepatitis B vaccine.
- Individuals who handle or have contact with dirty sharps in the course of performing their duties should receive hepatitis B vaccine.
- Staff of institutions or group homes for the developmentally challenged qualify for provincially funded hepatitis B vaccine if there is a known hepatitis B chronic carrier living in the long-term care institution or group home.

See [Biological Products – Hepatitis B Vaccine](#) and [Hepatitis B Risk Assessment for Paid Workers/Volunteers/Students](#).

➤ **Hepatitis A Vaccine**

- Staff of institutions for the developmentally challenged should be offered hepatitis A vaccine when there is evidence of sustained hepatitis A transmission.

References

- ¹ National Advisory Committee on Immunization. (2018). *Canadian Immunization Guide* (Evergreen ed.). Ottawa, ON: Public Health Agency of Canada. www.canada.ca/en/public-health/services/canadian-immunization-guide.html
- ² Centers for Disease Control and Prevention. (2018). Prevention of Pertussis, Tetanus, and Diphtheria with Vaccines in the United States: Recommendations of the Advisory Committee on Immunization Practices, 2018. *Morbidity and Mortality Weekly Report*, 67 (02). Retrieved 2018, July 27 from https://www.cdc.gov/mmwr/volumes/67/rr/rr6702a1.htm?s_cid=rr6702a1_e
- ³ Alberta Health. *Public Health Notifiable Disease Management Guidelines – Mumps*. Appendix B: Assessing Health Care Workers for Mumps Susceptibility www.health.alberta.ca/professionals/notifiable-diseases-guide.html.
- ⁴ Province of Alberta. (2014). *Communicable Diseases Regulation*, Alta. Reg. 238/1985. Retrieved 2018, August 30 from www.canlii.org/en/ab/laws/regu/alta-reg-238-1985/latest/alta-reg-238-1985.html.
- ⁵ Alberta Health. *Public Health Notifiable Disease Management Guidelines – Meningococcal Disease, Invasive (IMD)* www.health.alberta.ca/professionals/notifiable-diseases-guide.html.