

Guidelines



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Guidelines for Medication and Vaccine Injection Safety

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Developed in collaboration with:



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Proper aseptic technique in conjunction with basic infection prevention practices for handling medications, vaccines, and administration of injections can prevent the transmission of blood borne viruses and other microbial pathogens to patients during routine health-care procedures. Health professionals and administrators of medical facilities must be aware of safe practices and ensure that appropriate policies and procedures, knowledge, training, and equipment are available to implement these practices.

1. Medications are stored, handled, and used safely.

- a. Medications are securely stored, handled, and used according to manufacturer's instructions.
- b. Single use (dose) medications (e.g. vials, flush solutions, IV fluids) are discarded after each use.
 - i. Leftover contents are not combined or pooled.
- c. Use of multi-dose medications is avoided whenever possible.
- d. Multi-dose medications (e.g., vials, bottles) are labeled with date of opening and discarded within 28 days unless otherwise specified by the manufacturer. Regardless of date, they are discarded when there are visible signs or suspicion of contamination.
- e. Medications are within their expiry date and there is a process in place to check expiry dates before use.

2. Vaccines are stored, handled, and used according to provincial policy and national guidelines.

- a. Vaccines are stored, handled, and used safely as per the guidelines for medications described above.
- b. Written procedures for cold chain management are available and include routine operation and response to urgent situations that may compromise vaccine storage conditions. Vaccines are stored in a refrigerator that meets requirements outlined in the Alberta Vaccine Cold Chain Policy.
- c. The vaccine storage refrigerator is dedicated for vaccines and medications.
- d. Refrigeration temperatures are maintained between 2°C and 8°C, or as specified by the manufacturer.

- e. Temperatures (min, max, current) are monitored and documented at least twice daily using a $\pm 1^{\circ}\text{C}$ device that indicates the min and max temperatures reached since the last reading.

3. Injections and other sterile preparations¹ are prepared safely.

- a. Injections and sterile preparations are prepared by authorized and trained staff members.
- b. Personal protective equipment adequate for all tasks performed is available and used appropriately.
- c. All medication preparation areas have:
 - i. A dedicated hand hygiene sink with warm running water, liquid soap, and disposable paper towels in an enclosed dispenser, or
 - ii. An alcohol-based hand rub dispenser.
- d. Injections and sterile preparations are prepared in an area that is clean and free of distractions, clutter and obvious contamination sources (e.g. near water or sinks).
- e. Injections and sterile preparations are prepared aseptically including but not limited to:
 - i. Hand hygiene is performed prior to preparation.
 - ii. Sterile supplies (e.g. needles, syringes, administration sets, cannulas) are removed from packaging immediately before use.
 - iii. The rubber septum of vials is disinfected with alcohol prior to entry.
 - iv. A new needle and syringe is used for each entry into a multi-dose vial.
 - v. Contact between injection materials and the non-sterile environment is avoided.

¹ For the purpose of these guidelines injections and other sterile preparations includes medications prepared for injection (e.g. intramuscular, intravenous, intrathecal, intradermal, subcutaneous), ophthalmic drops or ointments, nasal inhalation solutions, respiratory therapy solutions, irrigation solutions for wounds and body cavities, and any other preparation where sterility is essential to therapy.

- e.** Adequate personal protective equipment including but not limited to gloves, disposable gowns and facial protection is worn for administration of hazardous drugs.
 - i.** Additional personal protective equipment is used where there is potential for splash, spill or aerosolization.
 - ii.** Personal protective equipment is disposable where possible.
- f.** Hazardous drug waste and equipment is disposed at point-of-use into a cytotoxic waste container with minimal manipulation (e.g. needles and syringes are left intact).

References

- Alberta Health, Health System Accountability and Performance. (2015). *Influenza immunization policy (IIP) 2015-16*. Retrieved from <http://www.health.alberta.ca/documents/AIP-Influenza-Immunization-Policy-2016.pdf>.
- Alberta Health, Public Health and Compliance Division (2017). *Alberta vaccine cold chain policy*. Retrieved from <https://open.alberta.ca/dataset/fa7f5ddc-f807-4b14-9f88-f9b3f76245dd/resource/f2df67cb-dd52-4b90-90e3-acd3c0b20d01/download/AIP-Vaccine-Cold-Chain-Policy-2017.pdf>.
- Alberta Health & Wellness. (2011). *Standards for single-use medical devices: As applied to critical and semi-critical medical devices*. Retrieved from <http://www.health.alberta.ca/documents/IPC-Medical-Device-Single-Use-2011.pdf>.
- Alberta Health Services. (2013). *Cytotoxic drug manual, Administration and handling guidelines* (3rd ed.). Retrieved from http://extcontent.covenanthealth.ca/PatientResident/Cytotoxic_Drug_Manual_Nov_19_2013_complete.pdf.
- Centers for Disease Control and Prevention, National Centre for Emerging and Zoonotic Infectious Diseases. (2015). *Infection prevention checklist for outpatient settings: Minimum expectations for safe care*. Retrieved from http://www.cdc.gov/hai/pdfs/guidelines/Ambulatory-Checklist_only_508.pdf.
- Centers for Disease Control and Prevention, National Centre for Immunization and Respiratory Diseases. (2016). *Vaccine storage & handling toolkit*. Retrieved from <http://www.cdc.gov/vaccines/hcp/admin/storage/toolkit/storage-handling-toolkit.pdf>.
- Dolan, S. A., Felizardo, G., Barnes, S., Kraska S., Patrick, M., Bumsted, A., & Arias, K. M. (2016). *APIC position paper: Safe injection, infusion, and medication vial practices in health care*. Retrieved from http://www.apic.org/Resource_/TinyMceFileManager/Position_Statements/2016APIC_SIPPositionPaper.pdf.
- Government of Alberta. (2009). *Occupational health and safety code*. Retrieved from https://work.alberta.ca/documents/WHS-LEG_ohsc_2009.pdf.

- National Association of Pharmacy Regulatory Authorities. (2015). *Model standards for pharmacy compounding of non-hazardous sterile preparations*. Retrieved from http://napra.ca/Content_Files/Files/Mdl_Stnds_for_Pharmacy_Compounding_NonHazardous_Sterile_Preparations_Dec2015_FINAL.pdf.
- National Institute for Occupational Safety and Health, Centers for Disease Control and Prevention. (2014). NIOSH *list of antineoplastic and other hazardous drugs in healthcare settings*. Retrieved from <http://www.cdc.gov/niosh/docs/2014-138/pdfs/2014-138.pdf>.
- Ontario Agency for Health Protection and Promotion (Public Health Ontario), Provincial Infectious Diseases Advisory Committee. (2015). *Infection prevention and control for clinical office practice*. Retrieved from http://www.publichealthontario.ca/en/eRepository/IPAC_Clinical_Office_Practice_2013.pdf.
- Public Health Agency of Canada. (2015). *National vaccine storage and handling guidelines for immunization providers*. Retrieved from <http://healthycanadians.gc.ca/publications/healthy-living-vie-saine/vaccine-storage-entreposage-vaccins/alt/vaccine-storage-entreposage-vaccins-eng.pdf>.
- U. S. Pharmacopeial Convention. (2015). *USP-NF general chapter <797> Pharmaceutical compounding – Sterile preparations*. In *United States Pharmacopeia (USP) and the National Formulary (NF)*. Rockville, MD: Author.