Guidelines

COLLEGE & ASSOCIATION OF REGISTERED NURSES OF ALBERTA

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Guidelines for Medication and Vaccine Injection Safety

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Developed in collaboration with:

College of Physicians & Surgeons of Alberta

Alberta College of Pharmacists

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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 according to manufacturer's instructions, when there are visible signs or suspicion of contamination, or 28 days after opening, whichever is shortest.
    - **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 ± 1°C device that indicates the min and max temperatures reached since the last reading.

3. Injections and other sterile preparations[1] 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.

vi. Containers are discarded if sterility or stability is in doubt or if breaks in aseptic technique occur.

f. Sterile preparations prepared in the practice setting:

i. Do not involve preparation that requires more than three sterile units/vials/containers.

ii. Do not require more than two entries into any one container, package or administration container/device.

iii. Do not require more than one hour of preparation time.

iv. Are under continuous supervision if the finished preparation is not immediately administered.

v. Are prepared as close as possible to the time of administration.

vi. Unless immediately and completely administered by the person who prepared it, or immediate and complete administration is witnessed by the preparer, the preparation bears a label listing: patient identification information, names and amounts of all ingredients, name or initial of the preparer, and beyond-use time or date.

g. Sterile preparations that do not meet the criteria for preparation in the practice setting are obtained from reputable sources such as a manufacturer or a pharmacy that meets the Alberta College of Pharmacists' requirements for sterile compounding.

4. Injections and sterile preparations are administered safely.

a. Hand hygiene is performed prior to administering each injection.

b. Personal protective equipment adequate for all tasks performed is available and used appropriately.

c. Needles and syringes are used only for one patient for one procedure.

d. Administration sets, cannulas, and other sterile supplies are discarded after each use.

e. Injections and sterile preparations are discarded if sterility or stability is in doubt or if breaks in aseptic technique occur.

f. Appropriate antiseptics are used for skin preparation prior to injections.

i. Appropriate antiseptics include:

- 2% chlorhexidine gluconate (CHG) in 70% isopropyl alcohol
- 70% isopropyl alcohol
- 2% CHG with 4% alcohol preservative
- 10% povidone iodine followed by 70% isopropyl alcohol
- 4% CHG (pre-op preparation)

g. If administration has not begun within one hour following the start of preparation, injections and sterile preparations are discarded.

5. Medical sharps are stored, handled, used and disposed of safely.

a. Medical sharps are safety-engineered in accordance with provincial legislation.

b. All medical sharps are discarded at point-of-use in a sharps container.

c. Sharps containers are clearly labeled, puncture resistant, tamper proof, closable and leak proof.

d. Sharps containers are replaced prior to reaching capacity, and securely stored until final disposal.

e. Sharps containers are not emptied and reused.

6. If hazardous drugs[2] are administered in the practice setting they are stored, handled and used safely.

a. A written procedure is in place for the management of hazardous drugs.

b. Hazardous drugs are stored separately from other medications if possible.

c. Employees and others at risk from handling hazardous drugs are identified and provided with adequate training and equipment.

d. Cytotoxic spill kits are available and staff are trained in spill management.

[2] Hazardous drugs are medications that pose a potential health risk from exposure in the workplace. For the purpose of these guidelines this includes chemotherapy and other medications listed on the National Institute for Occupational Safety and Health (NIOSH) list.

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).

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