3.3: Infection Prevention and Control

Health professionals are responsible for minimizing the spread of illness and disease and should incorporate routine infection control practices before, during, and after administering vaccines. Perform **hand hygiene** at regular intervals, like before preparing the vaccine, after removing gloves, when hands are soiled, etc. Gloves are not routinely used when vaccinating unless your own hands are not intact (e.g., your hands have an open wound, rash), or if the client has an open wound, rash, or bodily fluids near the injection site. Use of gloves may prevent proper hand hygiene between patients. Keep a safe and clean environment. Avoid surfaces that are dirty or potentially contaminated. Separate empty vials and dispose in designated waste management system (sharps container). Before injection, **cleanse the skin with an alcohol preparation pad** and allow for the alcohol to dry. If alcohol is unavailable, use soap and water.

**Vaccine Preparation**

When preparing vaccines, it is important for healthcare professionals to follow **aseptic technique** when accessing vials. Vaccines must be withdrawn from the vial immediately before use and generally should be administered by the same person. Do not pre-load syringes as a routine practice. Pre-loading syringes has the potential to disrupt vaccine stability, increase vaccine administration errors and wastage, as well as increase risk of contamination. Before withdrawing content of a vial into the syringe, **wipe the access diaphragm** (also referred to as the stopper) with an **alcohol preparation pad** (70% alcohol) while using friction. Allow the alcohol to dry before inserting the syringe. Always use a sterile syringe to withdraw from vial. When withdrawing, hold the vial upside down and aspirate required quantity into syringe. Once the vaccine is drawn, immediately withdraw the needle from the vial and expel any air bubbles. Safety-engineered needles are preferable to avoid needle stick injuries. If vaccines are pre-filled by the manufacturer, do not transfer to safety-engineered syringe.
Single-dose Vials

Single-dose vials are manufactured for **one-time use**. They should not be reused, and the leftover contents should not be pooled. Single-dose vials are preferred because they minimize the risk of transmission of pathogens and vial contamination.

Multi-dose Vials

Multi-dose vials **contain more than one dose** of the vaccine and often contain an antimicrobial preservative to prevent bacterial growth. The number of doses per vial varies. For example, IMOVAX Polio multi-dose vial contains ten doses. Health professionals should always **label the date of first use** and discard open multi-dose vials according to the manufacturer monograph or within 28 days, whichever is shorter. If contamination is suspected, discard multi-dose vials immediately.

Vaccine Reconstitution

Reconstitution is the process involved when vaccines need to be **mixed with a diluent**. Some manufacturers use concentrated freeze-dried powder (also called lyophilized vaccine) that requires a liquid diluent. Vaccines should always be reconstituted per manufacturer guidelines with the diluent provided by the manufacturer. Examples of diluents are sterile water, sodium chloride and an adjuvant suspension. The majority of vaccines must be administered immediately after reconstituting. Some vaccines can last up to 24 hours after reconstitution (example Hiberix [Hib]). Health professionals should consult the monograph for recommended time between reconstitution and use. When reconstituting vaccines, the health professional should introduce the diluent down the side of the vaccine vial and not directly into the vaccine powder. Mixing should be done carefully in a swirling motion until the suspension is uniform.

Points of Consideration

A separate sterile needle and syringe should be used for each injection. Health professionals should not mix vaccines in the same syringe unless explicitly specified by the manufacturer.

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