Chapter 8: Basic Infection Prevention Concepts
Learning Objectives

At the end of the session, participants should be able to:

- Describe the standard precautions in infection prevention
- Understand the steps involved in instrument processing
- Explain proper waste management practices
- Discuss post-exposure prophylaxis following injury during MC
Importance of Infection Prevention and Control

- Infection prevention and control (IPC) measures in VMMC program aim to:
  - Prevent infections among clients
  - Minimize the risk of transmitting HIV and other infections to clients and health care staff (including cleaning staff)
The risk of acquiring HIV through a needle-stick injury is estimated at 0.3% (three HIV infections for every 1,000 injuries).

Similarly, the risk of acquiring hepatitis B virus infection from such an injury ranges from 6% to 37% (average 18%).

For hepatitis C, the risk of transmission of infection is 1.8%.

Most transmission can be prevented through adherence to standard precautions.
Hand Hygiene

- Wash hands with **soap and water** OR use a **handrub** after each client.
- Wash with soap and water between handrubs to remove any soil or organic matter.
- Frequent use of alcohol-based handrub may cause contact dermatitis. Use hand lotions and creams to reduce this risk.
How to handwash?

WASH HANDS ONLY WHEN VISIBLY SOILED! OTHERWISE, USE HANDRUB!

Duration of the entire procedure: 40-60 sec.

1. Wet hands with water
2. Apply enough soap to cover all hand surfaces.
3. Rub hands palm to palm
   - Right palm over left dorsum with interlaced fingers and vice versa
4. Palm to palm with fingers interlaced
5. Backs of fingers to opposing palms with fingers interlocked
6. Rotational rubbing of left thumb clasped in right palm and vice versa
7. Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa.
8. Rinse hands with water
9. Dry thoroughly with a single use towel
10. Use towel to turn off faucet
11. ...and your hands are safe.
How to handrub?

RUB HANDS FOR HAND HYGIENE! WASH HANDS ONLY WHEN VISIBLY SOILED!

Duration of the entire procedure: 20-30 sec.

1a. Apply a painful of the product in a cupped hand and cover all surfaces.

1b. Rub hands palm to palm.

2. Rub hands palm to palm.

3. Right palm over left dorsum with interlaced fingers and vice versa.

4. Palm to palm with fingers interlaced.

5. Backs of fingers to opposing palms with fingers interlocked.

6. Rotational rubbing of left thumb clasped in right palm and vice versa.

7. Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa.

8. ...once dry, your hands are safe.
Personal Protective Equipment

- Physical barrier against microorganisms
- Includes gloves, masks, aprons, surgical caps, and footwear
- PrePex procedures are not performed in strict sterile settings
- However, use of nonsterile gloves and face masks is recommended during placement. For removal, the team should wear sterile gloves.
Handling Sharp Instruments

- Hypodermic needles are the most common cause of injuries to clinic workers.
- Safe handling of sharp instruments is critical in preventing these injuries.
- Disposable needles and syringes must be used only once.
- Do not disassemble the needle and syringe after use.
- Do not bend or break needles before disposal.
Sharps Containers

- Use clearly labeled, puncture-proof sharps safety boxes or containers.
- Place sharps containers close to point of use.
- Place sharps containers at a convenient height.
- Fill container to three-quarters full.
- Never attempt to empty a sharps container.
High-Level Disinfection

- High-level disinfection destroys all microorganisms except some bacterial endospores.
- Used for heat-sensitive instruments and equipment
- Provides the only acceptable alternative to sterilization
- Glutaraldehyde (Cidex) is generally the most appropriate chemical
Sterilization

- Sterilization is the destruction of all microorganisms, including bacterial endospores.
- Sterilization can be achieved by either physical or chemical methods.
- Sterilization can be achieved using the following approaches:
  - High-pressure steam (autoclave) or dry heat (oven)
  - Chemicals, such as ethylene oxide or formaldehyde, or glutaraldehyde if left for 10 hours
  - Radiation
Waste Disposal

- Use tight-closing, color-coded containers/bin liners to differentiate waste.
- For sharps, use puncture-resistant containers.
- Place waste containers close to where the waste is generated.
- Regularly clean all waste containers with a disinfectant.
Waste Disposal Methods

- **Burning:**
  - Destroys the waste
  - Kills microorganisms
  - Best method for disposal of contaminated waste
  - Reduces the bulk volume of waste
  - Ensures that the items are not scavenged and reused
Waste Disposal Methods

- **Encapsulation:**
  - Easiest way to dispose of sharps containers
  - When sharps container is three-quarters full, it is made completely full by pouring one of the following:
    - Cement (mortar)
    - Plastic foam
    - Clay
  - After material has hardened, seal the container and dispose of it in a landfill or bury it.
Waste Disposal Methods

- **Burying:**
  - Restrict access to the disposal site.
  - Line the burial site with a material of low permeability (e.g., clay), if available.
  - Select a site at least 50 meters (164 feet) away from any water source to prevent contamination of the water table.
  - Ensure that the site:
    - Has proper drainage,
    - Is located downhill from any wells,
    - Is free of standing water, and
    - Is not in an area that floods.
<table>
<thead>
<tr>
<th>Tetanus vaccination status</th>
<th>Level of protection to the individual</th>
<th>Options for vaccination before the procedure</th>
</tr>
</thead>
<tbody>
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<td>Countries or subnational areas where clients are likely to be fully vaccinated against tetanus (based on population policies and coverage levels), including: all three infant doses of Tetanus Toxoid-Containing Vaccination (TTCV), plus two to three subsequent TTCV boosters OR two doses of TTCV in adolescence or adulthood, with a third dose in the past five years</td>
<td>Clients likely have protective immunity</td>
<td>No need for a further booster dose of TTCV before VMMC, but a dose could be provided for longer-term protection</td>
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### WHO Guidelines for Tetanus Immunization, March 2015 (continued)

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<td>In countries or subnational areas where clients are likely “primed” against tetanus (based on population policies and coverage levels), meaning they have had at least one previous dose of TTCV</td>
<td>One TTCV booster at the time of VMMC cannot ensure protective immunity against tetanus, but may contribute to protection from disease or reduced severity of disease</td>
<td>Ideally, provide the single TTCV booster dose 14 days before VMMC. <strong>At a minimum</strong>, provide a TTCV booster dose at the time of VMMC. <strong>For longer-term protection against tetanus from any wound</strong>, encourage VMMC clients to return for the VMMC follow-up visit at 4–6 weeks and provide another dose of TTCV; encourage a booster dose after one year.</td>
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<td>In countries or subnational areas where clients are likely “not primed,” also known as “vaccine-naïve” (based on population policies and coverage levels), meaning they have never received any TTCV</td>
<td>An individual likely has no protective immunity against tetanus</td>
<td>Provide two TTCV doses at least 28 days apart. <strong>On first encounter, provide a first TTCV dose.</strong> Ideally, provide the second TTCV dose at least 14 days before VMMC. If the second TTCV dose is provided at the time of VMMC, limited protection may be provided during the first week after VMMC, while antibody levels are increasing. <strong>At a minimum,</strong> provide a TTCV dose at the time of circumcision, recognizing that no protection is provided with only one dose. <strong>For longer-term protection,</strong> encourage individual to receive a third dose in 6 months and additional doses subsequently, one year apart.</td>
</tr>
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Summary

- Standard precautions must be observed to minimize the risk of infection transmission from clients to health care workers and vice versa.
- Clients must be assessed for their immunization status against tetanus and, if required, they should receive tetanus immunization before circumcision with the PrePex device.
- While placement is a clean procedure, it is recommended that the removal procedure should, as much as possible, be done under sterile conditions.
- Sterilization of PrePex removal instruments is recommended.
- Waste disposal practices for the PrePex procedure are similar to other surgical procedures.
Thank you!