CPNE®
CLINICAL PERFORMANCE
IN NURSING EXAMINATION

INFECTION
CONTROL MODULE
Infection Control Practices / Asepsis Practices

Purpose

The purpose of this module is to review the application of the basic principles of infection control and asepsis. The guidelines in this module were developed in accordance with recommendations published by the Centers for Disease Control and Prevention (CDC) and Healthcare Infection Control Practices Advisory Committee (HICPAC), which are evidence-based practices followed nationwide to control and prevent the transmission of infection.

Introduction

Administrators in health-care facilities are required to ensure that health-care providers know and consistently apply the principles of Standard Precautions for all patient care activities. This mandate includes Excelsior College nursing students who are providing care while taking the Clinical Performance in Nursing Examination (CPNE).

After reviewing this content, you should be ready to apply the practices listed below. If you have any questions or concerns about this content, schedule a conversation with a nursing faculty member by calling 1-888-647-2388, extension 1315.

The content covered in this module includes information about:

**Standard Precautions**
1. Hand hygiene
2. Cough etiquette for clients
3. Use of gloves, gown, mask, and/or eye protection or Personal Protective Equipment (PPE)
4. Safe injection practices

**Transmission-based Precautions**
1. Contact precautions
2. Droplet precautions
3. Airborne precautions

**Immunization Recommendations for Health-care Workers**

When you are confident in your ability to perform the expected infection control and asepsis practices, electronically acknowledge your readiness as part of the Clinical Performance in Nursing Examination application. Your acknowledgement signifies that you will apply infection control practices during the CPNE.
Overview

The Centers for Disease Control and Prevention estimates there are approximately 722,000 health care-associated infections (HAI) in U.S. acute care hospitals. About 75,000 patients with HAI die during their hospitalizations. 2014 data published in 2016 reports a decrease by more than 70 percent of some HAI where targeted activities have been implemented. Conscious effort by all members of the health-care team does improve patient-care outcomes (CDC, 2016).

The two tiers of precautions are standard and transmission-based. Standard Precautions are used to reduce the risk of transmission of blood, body fluids, secretions, and excretions (except sweat) to non-intact skin and mucous membranes. The second type, transmission-based, is used in addition to Standard Precautions when there is the possibility of infections being spread by contact, droplet, or airborne transmission.

It is the responsibility of health-care workers to follow principles of medical asepsis or “clean technique” to decrease the potential risk for spreading infections. The goal is to provide a clean and safe environment for patients and care providers.

Standard Precautions (Tier 1)

Standard Precautions include a group of prevention practices that apply to all clients in any health-care setting regardless of diagnosis or possible infection status. The intent of these precautions is to reduce the risk of transmission of both recognized and unrecognized sources of infection. Compliance with Standard Precautions is mandated and closely regulated by the Occupational Safety and Health Administration (OSHA).

Standard Precautions include:

1. Hand hygiene
2. Cough etiquette for clients
3. Personal Protective Equipment (PPE)—the use of gloves, gown, mask and/or eye protection
4. Needle and sharps safety procedures
5. Activities to prevent transfer of microorganisms when handling equipment and textiles in the environment

Hand Hygiene

Hand hygiene is the most effective way to help prevent the spread of infectious agents.

According to the CDC, hand hygiene refers to hand washing with plain soap and water, use of antiseptic hand rubs including alcohol-based products, or surgical antisepsis. Wearing gloves is not enough to prevent the transmission of pathogens in health-care settings (CDC, 2017).

Guidelines for Hand Hygiene

- Natural nails should be kept to less than ¼ inch long and artificial fingernails or extenders must not be worn when having direct patient contact.
- Health-care workers should have forearms exposed for proper hand hygiene.
- It is recommended not to wear hand jewelry especially rings with stones (Treas & Wilkinson, 2014).
Wash Hands with Soap and Water

- Before eating
- After using restroom
- When hands are visibly soiled
- After contact with blood, body fluids or excretions
- If contact with spores (Clostridium Difficile (C. diff) and/or Bacillus Anthracis) is likely to have occurred

Handwashing Technique

1. Bare your hands and forearms.
2. Stand in-front of the sink. Do not allow clothing to touch the sink.
3. Turn on water and adjust temperature (warm, not hot) and force of flow.
4. Wet hands and wrists, keeping hands below the wrists and forearms so water flows towards the fingertips.
5. Apply 3 to 5 mL of liquid soap. Lather covering all areas of hands with soap.
6. Firmly rub hands in circular motion, wash the palms and back of hands, each finger and the area between fingers, the wrist, and the forearm.
7. Wash at least one inch above the wrist if hands are not visibly soiled or one inch above the area of contamination.
8. Continue the friction motion for at least 15 seconds.
9. Clean under fingernails.
10. Rinse thoroughly with water flowing toward fingertips.
11. Pat hands dry with paper towel, beginning with the fingers and moving upward to the forearms.
12. Use a clean dry paper towel to turn off the facet (Treas, 2014).

Use of Alcohol-Based Hand Gel

If hands are not visibly soiled, the use of an alcohol-based antiseptic agent may be used for routine hand decontamination in other clinical situations. These situations include:

- Before donning gloves and after removing gloves
- Before and after direct contact with a patient
- Before and after contact with objects and equipment in the patient’s immediate vicinity
- Before and after touching any area on your face and hair

Hand hygiene technique using alcohol-based product

1. Bare your hands and forearms.
2. Apply at least 3 mL of antiseptic product to the palm of one hand.
3. Vigorously rub hands together. Cover all surfaces including between fingers, under nails and wrists with product.
4. Continue to rub until hands for 15 to 30 seconds and until hands are completely dry (Treas, 2014)
Cough Etiquette for Clients

- Instruct symptomatic persons to cover mouth and nose when sneezing or coughing.
- Provide tissues and dispose in non-touch container.
- Perform hand hygiene after using tissue or covering mouth or nose (Treas, 2014).

Personal Protective Equipment (PPE)

Personal Protective Equipment (PPE) is used to prevent the transmission of infection during care for all clients regardless of known or unknown infectious status. Wear PPE when the anticipated patient interaction may result in contact with blood or body fluid.

Gloves

Gloves provide a protective barrier for the health-care provider when contact with a potentially infected substance is possible.

- Wear gloves for any care that may involve contact with patient’s blood, body fluids, secretions, excretions, non-intact skin, and mucous membranes such as mouth, nose and eyes.
- Wear gloves for all vascular access procedures such as obtain capillary blood samples, assessing intravenous (IV) sites, changing IV dressings, removing IV lines, and administering IV push medication.
- Change gloves as needed when providing care or performing different procedures for the same patient.
- Gloves do not replace the need for hand hygiene. Gloves may have small defects or may become torn during use.
- Remove gloves and perform hand hygiene.

Mouth, Nose, Eye Protection, and/or a Face Shield

These are used to protect the mucous membranes of the eyes, nose, and mouth of the health-care worker during procedures and patient-care activities that are likely to generate splashes or sprays of blood, body fluids, secretions, or excretions.

Gowns

Gowns are worn to protect the health-care worker’s skin and to prevent soiling of clothing during procedures and care activities that are likely to generate splashes or sprays of blood, body fluids, secretions, and excretions.

- Wear a gown that is appropriate to the task being performed.
- Remove the gown and perform hand hygiene before leaving the client’s environment.
- Do not reuse gowns even for repeated contacts with the same client.

Mouthpieces or Other Ventilation Devices

- Use one-way valve mouthpieces, resuscitation bags, or other ventilation devices as an alternative to mouth-to-mouth resuscitation methods.
Needles and Sharps Safety
- Contaminates needles and sharps must not be bent, recapped, or manipulated using both hands.
- The safety device on the needle is to be engaged after use. Observe for an audio or visual cue that indicates the feature has been engaged.
- Place used syringes, needles, scalpel blades and/or other sharps in the designated puncture-resistant container as soon as feasibly possible.

Equipment Within the Environment
Handle equipment and laundry in a manner to prevent transfer of microorganisms to others or the environment.
- Clean equipment such as stethoscopes before and after use with the institutional designed aseptic cleaner or wipe.
- Do not carry gloves in your pocket.
- Wear gloves prior to handling equipment or laundry that is contaminated.
- Linen that is wet with blood or body secretions must be placed in a leak-proof container.
- Maintain a clean client environment.
- Wipe small spills from tabletops and floors.
- Empty bedpans, urinals, and emesis basins after use.
- Follow the institution's policy.

Treatment of Exposure Incidents
- Incidents that result in injury or contamination of a care provider must be reported and treated immediately.
- Follow the institution’s policy/protocols for reporting and treating the incident.

Transmission-Based Precautions (Tier 2)
Transmission-based precautions are used in addition to Standard Precautions for hospitalized patients who are suspected to have an infection that can be transmitted by airborne, droplet, or contact routes. These precautions can be used alone or in combination with the others.

Contact Precautions
Contact precautions are used when direct contact with the client or the client’s environment can lead to spread of the pathogen. Draining wounds, dressings, and secretions are sources of infection. Contact precautions are used for clients with multidrug-resistant organisms such as methicillin-resistant staphylococcus aureus (MRSA), vancomycin-intermediate staphylococcus aureus (VISA), and carbapenen-resistant enterobacteriaceae (CRE) (CDC, 2017).
- Clean gloves are worn prior to entering the room.
- A clean gown is worn if contact with client or contaminated item in the room is anticipated.
- Remove PPE and perform hand hygiene prior to leaving the room.
Droplet Precautions

Droplet precautions are used when the pathogen can be spread by moist, large droplets. Examples include: endotracheal open suctioning; clients who have rubella, mumps, diphtheria; and adenovirus in children.

- Don the mask upon entry into the room.
- Wear a mask when working within 3 feet of the client.
- Instruct client to observe cough etiquette.
- Limit transport outside the room. If transport is necessary the client should wear a mask.
- Change PPE and perform hand hygiene between contact with clients in the same room.

Airborne Precautions

Used when infection is transmitted person-to-person on air currents. Examples are tuberculosis, varicella (chickenpox), rubella (measles), and severe acute respiratory syndrome (SARS).

- Place the client in a private room with an airborne infection isolation room.
- The door to the room is closed when not required for entry and exit.
- Don a special, fit-tested, approved mask (N95 respirator) before entering the room.
- Remove the respirator/mask outside the room after closing the door (CDC, 2017).

Immunizations

Health-care workers have the potential for exposure to patients and/or to infectious materials, including body substances, contaminated medical supplies and equipment, contaminated environmental surfaces, or contaminated air (CDC, 2017). Due to patient contact of infective material from patients, many health-care personnel are at risk for exposure to (and possible transmission of) vaccine-preventable diseases. Health-care personnel must be up-to-date with all recommended vaccinations, including an annual influenza vaccine (CDC, 2017).

The Immunization Action Coalition and the Centers for Disease Control (2017) recommends that all health care workers be immunized for:

- Hepatitis B
- Influenza
- Measles, Mumps, Rubella (MMR)
- Varicella
- Tetanus, Diphtheria, Pertussis (Tdap)
- Meningococcal Meningitis

Required immunizations for CPNE® are based on the CDC “Recommended Vaccines for Healthcare Workers,” which can be viewed on the CDC website at: [www.cdc.gov/vaccines/adults/rec-vac/hcw.html](http://www.cdc.gov/vaccines/adults/rec-vac/hcw.html)
Summary
The best assurance for prevention of illness caused by blood-borne pathogens is education related to the mode of transmission, careful practice, the use of Standard Precautions, and adherence to the recommendations of the CDC regarding vaccination.
References


