

## Chapter 1: Basics of Asepsis

---

### MULTIPLE CHOICE

1. What is defined as a microorganism capable of causing disease in humans?
  - a. Pathogenic microorganism
  - b. Hospital-acquired infection
  - c. Virulent microorganism
  - d. Cross-contamination

ANS: A

Microorganisms capable of causing disease in humans are termed **pathogens**.

PTS: 1

2. What is defined as an infection a patient develops while in the hospital and did not have before hospital admission?
  - a. Pathogenic infection
  - b. Virulent infection
  - c. Hospital-acquired infection
  - d. Microorganism

ANS: C

**Hospital acquired infection (HAI)** refers to an infection a patient develops while in the hospital and did not have before hospital admission.

PTS: 1

3. Tuberculosis is transmitted by \_\_\_\_\_.
  - a. Vehicle transmission
  - b. Vectorborne transmission
  - c. Direct contact transmission
  - d. Airborne transmission

ANS: D

Air currents can transport microorganisms from one area to another (**airborne transmission**). The bacterium that causes tuberculosis is commonly transmitted in this way.

PTS: 1

4. What is the most common cause of hospital acquired infections?
  - a. Direct contact transmission
  - b. Indirect contact transmission
  - c. Airborne transmission
  - d. Vehicle transmission

ANS: B

**Indirect contact transmission** is the most common cause of hospital acquired infections.

PTS: 1

5. What is the most important way to minimize indirect contact transmission?
  - a. Isolation
  - b. Disposable equipment
  - c. Handwashing
  - d. Antibiotics

ANS: C

**Hand hygiene** is the most important way to prevent indirect contact transmission. Limiting contact with potentially contaminated surfaces is also important.

PTS: 1

6. What method of transmission of microorganisms would you need to be most cautious of while performing procedures such as assisting with bronchoscopy, suctioning artificial airways, or changing a ventilator circuit?
- Vectorborne transmission
  - Vehicle transmission
  - Indirect contact transmission
  - Droplet transmission

ANS: D

**Droplet transmission** of microorganisms can occur via coughing, sneezing, talking, or during procedures such as assisting with bronchoscopy, suctioning artificial airways, or changing a ventilator circuit.

PTS: 1

7. What precaution should be followed for all health care settings and with all patients regardless of diagnosis?
- Standard precautions
  - Use of a cover gown
  - Use of a mask
  - Droplet precautions

ANS: A

Use of **standard precautions** is strongly recommended for all health care settings and with all patients regardless of diagnosis. Standard precautions combine elements of both universal precautions and body substance isolation.

PTS: 1

8. Respiratory hygiene/cough etiquette applies to patients, visitors, and practitioners with symptoms of respiratory illness and includes \_\_\_\_\_
- education of the facility staff, patients, and visitors.
  - posted signage with appropriate instructions.
  - control measures.
  - all of these.

ANS: D

All of these are correct. Respiratory hygiene/cough etiquette includes education of the facility staff, patients, and visitors; posted signage with appropriate instructions; control measures (facial tissues, masks, and appropriate disposal equipment); good hand hygiene; and physical space separation of 3 feet from the affected individual.

PTS: 1

9. What is a term used to describe various barrier devices to protect one's clothing, skin, or mucous membranes from contact with infectious material?
- Asepsis
  - Personal protective equipment
  - Personal protective barrier
  - Personal protective barrier

b. Isolation guidelines

d. Transmission prevention

ANS: C

**Personal protective equipment (PPE)** is a term used to describe various barrier devices to protect one's clothing, skin, or mucous membranes from contact with infectious material. PPE may include gloves, masks goggles or face shields, gowns, and respiratory protection.

PTS: 1

10. What should be done after performing a procedure on a patient prior to touching other surfaces in the patient's room?
- a. remove the gloves
  - b. apply a cover gown
  - c. wash your hands
  - d. A and C

ANS: D

Prior to touching other surfaces in the room (environmental surfaces), patient care equipment, and other non-contaminated items, **1) remove the gloves, and 2) perform hand hygiene.**

PTS: 1

11. When performing tracheostomy care, which piece of personal protective equipment should be used to protect the health care provider from being splashed in the eyes with contaminated secretions?
- a. Mask
  - b. Goggles
  - c. HEPA mask
  - d. Cover gown

ANS: B

The use of **eye protection** (goggles with side shields) will prevent body fluids from splashing or spraying in the eyes.

PTS: 1

12. Handling patient care equipment soiled with blood, body fluids, secretions, or excretions requires special management. These include all of the following EXCEPT \_\_\_\_\_.
- a. the use of gloves is required, and mask/eye protection and use of a cover gown may also be required if there is a risk of splashing or spraying.
  - b. all permanent equipment soiled with body fluids should be decontaminated with appropriate cleaning products prior to use in the care of another patient.
  - c. the handling of this equipment does not require the same precautions as patient care situations in which the practitioner may come in contact with these secretions.
  - d. all disposable equipment should be properly disposed of and handled with other contaminated waste.

ANS: C

Handling patient care equipment soiled with blood, body fluids, secretions, or excretions requires **the same** precautions as patient care situations in which the practitioner may come in contact with these secretions.

PTS: 1

13. What type of patient precautions should be employed for patients with mycobacterium tuberculosis, measles or varicella?
- a. Contact precautions
  - b. Airborne precautions
  - c. Droplet precautions
  - d. Vectorborne precautions

ANS: B

**Airborne precautions** are most commonly employed in the care of patients who have mycobacterium tuberculosis, varicella and measles. Airborne transmission involves microorganism transmission via small aerosolized particles of 5 µm or smaller in size.

PTS: 1

14. What is the most frequent cause of needle sticks?
- Attempting to recap a needle
  - Removing discarded needles or syringes from sharps containers
  - Attempting to force a needle into an already full container
  - Using puncture-proof containers

ANS: A

**Attempting to recap a needle** is the most frequent cause of needle sticks. Never attempt to recap a needle.

PTS: 1

15. Which of the following precautions should be used with airborne transmission precautions?
- Private room should be used
  - Gowns and gloves should be worn
  - Caregivers should wear respiratory protection consisting of a NIOSH N-95 mask or other OSHA-approved respiratory filtration device
  - During transport the patient should wear NIOSH N-95 mask
- I and III
  - II and IV
  - I, III, and IV
  - I, II, III, and IV

ANS: A

I) The patient should be placed in a **private room** with negative air pressure, and the door should remain closed at all times. III) Caregivers entering the patient's room should wear **additional respiratory protection** consisting of a NIOSH N-95 mask or other OSHA-approved respiratory filtration device. Gloves should be worn but gowns are used for *contact* (not airborne) precautions. During transport, have the patient wear a simple surgical mask or a HEPA mask (not a NIOSH N-95). Transport patients who are infected with TB, varicella, and measles within the hospital only for specific essential purposes.

PTS: 1

16. If two patients are infected with the same microorganism and neither patient has another infection, they may be placed in the same room. This is defined as \_\_\_\_\_
- contact precaution.
  - cohorting.
  - standard precaution.
  - respiratory hygiene/cough etiquette.

ANS: B

**Cohorting** occurs when two patients infected with the same microorganism are placed in the same room. Neither patient should have another infection.

PTS: 1

17. Place in the correct order the proper aseptic removal of personal protective equipment.
- Remove the gown
  - Remove the mask

III. Remove the gloves

- a. III., II., I.
- b. II., I., III.
- c. I., II., III.
- d. II., III., I.

ANS: A

First, **Remove Gloves** - gloves are easily removed by grasping the cuff and turning them inside out. The second glove may be removed over the first, and then both may be discarded together. Second, **Remove the Mask** - (unless droplet or airborne precautions are in effect). Remove the mask without touching the hair or face with the hands. Third, **Remove the Gown**. Follow the prescribed method for removing all items.

PTS: 1

18. Place in the correct order the proper sequence of hand washing.

- I. Liberally apply soap
- II. Adjust water flow and temperature
- III. Turn off water aseptically
- IV. Wash with friction
- V. Wet forearms, wrists, and hands
- a. I., II., III., IV., V.
- b. II., III., I., IV., V.
- c. II., V., I., IV., III.
- d. II., I., IV., V., III.

ANS: C

Handwashing steps in order are: II) Adjust water flow and temperature, V) Wet forearms, wrists, and hands, I) Liberally apply soap, IV) Wash with friction, and III) Turn off the water with a clean, dry Towel. These are only some of the steps in handwashing.

PTS: 1

19. Place in the proper sequence the donning of personal protective equipment aseptically.

- I. Application of the mask
- II. Application of the gown
- III. Application of the gloves
- a. I., II., III.
- b. II., I., III.
- c. III., II., I
- d. I., III., II.

ANS: A

The steps in order, are: I) Application of the mask II) Application of the gown III) Aseptic application of the gloves.

PTS: 1

20. Which of the following statements is FALSE concerning the removal of a gown aseptically?

- a. Begin by untying the waist tie, and then wash the hands because the area from the waist down is considered dirty.
- b. Untie the neck tie and shrug the shoulders forward so that the gown slips off the body down the arms.
- c. Allow the gown to slip down so that it can be grasped inside at the neck of the gown. Fold the gown inside out and dispose of it appropriately.

d. Remove the gown by pulling it off from the sleeves before washing your hands.

ANS: D

The steps are as follows: 1) Untie the waist tie. **2) Wash the hands.** 3) Untie the neck tie, 4) Insert one index finger between the cuff and wrist and pull the hand inside the sleeve. 5) With the hand inside the one sleeve, remove the other sleeve. 6) Allow the gown to slip down so that it can be grasped inside at the neck of the gown. 7) Fold the gown inside out and dispose of it appropriately.

PTS: 1

21. What is defined as the complete destruction of all forms of microorganisms?
- a. Isolation
  - b. Standard precautions
  - c. Asepsis
  - d. Sterility

ANS: D

**Sterility** is defined as the complete destruction of all forms of microorganisms.

PTS: 1

22. Respiratory care equipment is usually \_\_\_\_\_ because it is too difficult and costly to keep it \_\_\_\_\_.
- a. disinfected; aseptic
  - b. in standard precaution states; isolated
  - c. aseptic; sterile
  - d. isolated; aseptic

ANS: C

Respiratory care equipment is usually **aseptic** because it is too difficult and costly to keep it **sterile** for a long period.

PTS: 1

23. When microorganisms that are present in everyday environments cause infection when the body's defense mechanisms are impaired are called \_\_\_\_\_.
- a. Virulence
  - b. Cross contamination
  - c. Opportunistic infections
  - d. Hospital acquired infections

ANS: C

**Opportunistic infections** occur when the body's defense mechanisms are impaired due to disease processes or trauma infection. They are caused by microorganisms that are present in everyday environments.

PTS: 1

24. The soap and water scrub lasting \_\_\_\_\_ is the most common hand washing protocol used in the hospital setting, but a scrub that lasts \_\_\_\_\_ is performed prior to surgery and before entry into specialized areas such as the newborn ICU or burn unit.
- a. 15 second; 5 minute
  - b. 5 minute; 10 minute
  - c. 5 second; 15 minute
  - d. 15 second; 15 second

ANS: A

The **15-second** soap and water scrub is the most common hand washing protocol used in the hospital setting. The **5-minute** scrub is performed prior to surgery and before entry into specialized areas such as the newborn ICU or burn unit.

PTS: 1

25. Which of the following are precautions that should be taken with sharps?
1. Do not attempt to force a needle or sharp instrument into an already full container.
  2. Do not attempt to remove discarded needles or syringes from sharps containers.
  3. Do not ever attempt to recap a needle.
- |            |           |
|------------|-----------|
| a. 2 and 3 | c. 1 only |
| b. 1, 2, 3 | d. 3 only |

ANS: B

**All of the precautions** should be taken with sharps; they require special handling.

PTS: 1

## ESSAY

1. A patient with extensive burns requires oxygen therapy via face tent with a large volume nebulizer. What type of precautions should the respiratory care practitioner use in caring for the patient?

ANS:

A large volume nebulizer with sterile water should be used for the cool aerosol to humidify the oxygen therapy. The face tent and the large bore tubing to deliver the oxygen must be aseptic and handled carefully. The therapist's stethoscope should be free of microorganisms. Personal protective equipment should be worn to protect the patient from being contaminated with microorganisms from the practitioner. Gloves should also be worn before contact with mucous membranes or broken or non-intact skin. A health care provider should wear a mask to protect the patient from being splashed or sprayed by contaminated body secretions. A cover gown or special scrubs prevent the spread of microorganisms to the patient via the contact transmission route.

PTS: 1

2. A COPD patient is admitted to the hospital for an exacerbation of the disease. What precautions should the respiratory care practitioner take to prevent this patient from getting a hospital acquired infection?

ANS:

Gloves should be used when caring for the patient and always followed by strict hand hygiene. Cough etiquette measures should be implemented, including coughing into facial tissues and immediately disposing of them. Any individual who is coughing around the patient should wear a surgical mask. Aseptic disposable equipment should be used. All disposable equipment should be properly disposed of. Only sterile solutions should be used for nebulization and humidity.

PTS: 1

3. A patient with pseudomonas aeruginosa cultured in his sputum requires frequent tracheostomy care. What precautions need to be taken?

ANS:

The respiratory care practitioner should use gloves and good hand hygiene before and after care. The therapist should wear a mask, eye protection, and an impenetrable cover gown. All permanent equipment soiled with body fluids should be decontaminated with appropriate cleaning products. Soiled linens should be handled and laundered properly. All disposable equipment should be properly disposed of and handled with other contaminated waste. Sterile technique should be used when suctioning the patient and sterile water needs to be used in the aerosol reservoir. Water that accumulates in the tubing should be disposed of properly with care taken not to drain the water into the reservoir or toward the patient's airway.

PTS: 1