

Chapter 31: Infection Control

Teacher Version · Answer Key & Explanations

Section 1: Microbiology & Cycle of Infection

1. An infection contracted during a hospital stay is called a **nosocomial** infection.
Nosocomial = healthcare-associated infection. Distinguishable from community-acquired infections.
2. Which of the following is the mode of transmission for tuberculosis?
 - A. Contact
 - B. Droplet
 - C. Airborne**
 - D. Vector-borne**Explanation:** *TB spreads via aerosolized droplet nuclei that remain suspended in air — requires N95, not a surgical mask.*
3. After an infectious agent infects a new host, that host becomes the **reservoir host** in the next cycle.
The cycle restarts — the newly infected host is now the reservoir for the next susceptible person.
4. List the 5 stages of the Cycle of Infection in order.
1. Reservoir Host 2. Means of Exit 3. Means of Transmission 4. Means of Entrance 5. Susceptible Host
Breaking any single link stops the chain. MAs most commonly intervene at Transmission and Entrance.
5. Which type of immunity does breastfeeding provide to an infant?
 - A. Active natural
 - B. Active artificial
 - C. Passive natural**
 - D. Passive artificial**Explanation:** *Infant receives maternal antibodies (passive) through breast milk (natural biological source) — does not produce them independently.*

Section 2: Standard Precautions & PPE

6. When gloved hands contact a patient's blood, gloves must be disposed in the **red** biohazard waste container.
Red = biohazardous waste. Yellow/orange = flammable. Do not confuse container color with label color.
7. Which action complies with standard precautions when processing blood specimens?
 - A. Wearing a surgical mask
 - B. Wearing goggles**
 - C. Double-gloving
 - D. Wearing a gown only**Explanation:** *Goggles/face shield protects mucous membranes from splash — a required standard precaution for blood specimen processing.*

8. When a patient's blood stains an MA's uniform, the MA should **finish the procedure** before changing.

Abandoning a procedure mid-way could harm the patient. Finish, then change and report the exposure.

9. An eye splash from body fluids requires flushing at an eyewash station for **15 to 60** to **15 to 60** minutes.

This is a specific and wide range — both numbers must be memorized. Flush immediately and continuously.

10. A patient with suspected TB arrives coughing. What type of precautions apply, and what PPE is required for the MA entering the room?

Airborne precautions. N95 respirator (must be fit-tested) — a standard surgical mask is NOT sufficient for TB.

TB = airborne transmission. N95 filters $\geq 95\%$ of airborne particles. Patient should be placed in a negative-pressure isolation room (AIIR).

11. OSHA mandates that employers provide and maintain **PPE (Personal Protective Equipment)** to prevent exposure to hazardous and infectious material.

OSHA mandates free PPE provision — employees cannot be charged. Applies to all at-risk roles.

Section 3: Hand Hygiene

12. During handwashing, how long should the MA scrub with friction?

A. 10–15 seconds

B. 20–30 seconds

C. 45–60 seconds

D. At least 2 minutes

Explanation: *CDC guideline: 20–30 seconds of vigorous friction, covering all surfaces including backs of hands and between fingers.*

13. During handwashing, hands should be rinsed with fingers pointed **downward** to prevent contaminated water flowing back.

Water flows from wrists toward fingertips and drips off — away from clean wrist skin. Most commonly failed clinical step.

14. Use a **brush** or orange stick to clean under nails during handwashing.

Subungual (under-nail) areas harbor the highest bacterial counts. Physical removal with brush is required.

15. A coworker uses alcohol-based hand rub after measuring a patient's BP. The MA notices the patient had a C. diff diagnosis. Is this appropriate? Explain.

No. Alcohol-based hand rub is NOT effective against C. difficile spores. Soap and water must be used.

C. diff spores are resistant to alcohol. CDC requires soap and water for known/suspected C. diff patients.

Section 4: Levels of Infection Control

16. Which of the following processes destroys ALL microorganisms including spores?
- A. Sanitization
 - B. Disinfection
 - C. Sterilization**
 - D. Decontamination
- Explanation:** *Sterilization = complete destruction of ALL microorganisms AND spores. Disinfection kills most but NOT spores.*
17. The autoclave uses steam, pressure, and distilled water to sterilize instruments.
All three elements are required: steam + pressure + distilled water (not tap — minerals damage the autoclave).
18. To make 100 mL of a 10% bleach solution, combine 10 ... 90 mL bleach with 10 ... 90 mL distilled water.
10% of 100 mL = 10 mL bleach + 90 mL distilled water. Check: 10/100 = 10%. Used for urine/blood spills.
19. A urine spill on the floor should be cleaned with which solution?
- A. 70% isopropyl alcohol
 - B. 10% bleach (1:10 sodium hypochlorite)**
 - C. Quaternary ammonium
 - D. Hydrogen peroxide
- Explanation:** *1:10 bleach (10% concentration) is the OSHA-recommended disinfectant for blood and body fluid spills.*
20. What is the difference between disinfection and sterilization? Give one clinical example of each.
Disinfection destroys most microorganisms but NOT spores (e.g., alcohol wipe on exam table). Sterilization destroys ALL microorganisms and spores (e.g., autoclaving surgical instruments).
Most common terminology error on exams: students say disinfection kills 'all' organisms — it does NOT kill spores.

Section 5: Autoclave & Sterile Packaging

21. Sterilization indicators on autoclave packs are used to confirm that sterilization conditions were met.
Indicator tape changes color when temperature/time conditions are met. Does not guarantee sterility — biological indicators (spore tests) are the gold standard.
22. An MA finds wrapped sterile packs in the autoclave with color-changed indicator tape but no date. What is the correct action?
- A. Use them — indicator tape confirms sterility
 - B. Set them aside for the next available procedure
 - C. Unwrap, wash, rinse, dry, rewrap, and re-autoclave**
 - D. Re-autoclave in the same package
- Explanation:** *No date = non-sterile per policy, regardless of tape color. Items cannot be re-autoclaved in the same package without full reprocessing.*

23. An MA notices a surgical tray has been autoclaved but the outer wrapping is wet. Is it safe to use? What should be done?

No — a wet pack is considered contaminated (moisture allows bacteria to wick through wrapping). The pack must be rewrapped, re-labeled, and re-autoclaved.

Wet packs are a common real-world clinical error. Moisture wicking compromises sterile barrier integrity.

Pearson Practice Questions

New Question – Tutor Topic: Sterile Surgical Procedures

24. Which of the following techniques should a medical assistant use when passing the provider a scalpel during a sterile procedure?

- A. Blade sideways on a separate Mayo stand
- B. Blade capped, using a skin retractor to pass
- C. Blade down and handle first**
- D. Blade up, using forceps to pass

Explanation: *This is the safest technique because it protects both the provider and the assistant from accidental cuts. Passing the handle first allows the provider to grasp the instrument safely and establish control before using it.*

New Question – Tutor Topic: Postoperative Care

25. Which of the following should a medical assistant include in postoperative instructions for a minor surgical procedure?

- A. Sterilization protocols
- B. Activity restrictions**
- C. Explanation of procedure
- D. Fluid intake limits

Explanation: *After a minor surgical procedure, patients need clear guidance on what activities to avoid or limit (like heavy lifting, exercise, or getting the wound wet) to promote proper healing and prevent complications.*

New Question – Tutor Topic: Sterile Field Maintenance

26. A medical assistant is setting up a surgical tray for a procedure. What distance from the edges of the sterile field should the assistant consider contaminated?

- A. 3/4 inch
- B. 1/2 inch
- C. 1/4 inch
- D. 1 inch**

Explanation: *When setting up a surgical tray, the outer 1 inch from the edges of the sterile field is considered contaminated per standard sterile technique (Pearson Ch 39). This border must be maintained to preserve surgical asepsis.*

New Question – Tutor Topic: Surgical Site Preparation

27. Which of the following should a medical assistant use when preparing a surgical site?

- A. Alcohol
- B. Sterile normal saline
- C. Soap and water
- D. Povidone iodine**

Explanation: *Povidone-iodine (Betadine) is the standard antiseptic used for surgical site preparation. It provides broad-spectrum antimicrobial activity and creates a sterile field for surgery by killing bacteria, viruses, and fungi on the skin.*

New Question – Tutor Topic: Suture Removal

28. A provider has secured sutures on a patient's scalp. The medical assistant should schedule the patient to have the sutures removed in which of the following number of days?

- A. 4 days
- B. 7 days**
- C. 30 days
- D. 1 day

Explanation: *Scalp sutures are typically removed in 7-10 days because the scalp has excellent blood supply which promotes faster healing, with 7 days being the standard timeframe.*

New Question – Tutor Topic: Surgical Assisting

29. Which of the following actions should a medical assistant take when helping a provider with cyst removal?

- A. Pass instruments tip-end first to provider.
- B. Pass instruments handle-first to provider.**
- C. Pass scalpel to provider with blade facing up.
- D. Place needle in holder and pass tip-end first to provider.

Explanation: *When assisting with cyst removal, instruments should be passed handle-first so the provider can immediately grip and use them safely without risk of injury.*

New Question – Tutor Topic: Surgical Instrument Disinfection

30. In which of the following solutions should a medical assistant immerse surgical instruments for disinfection?

- A. Hydrogen peroxide
- B. Soap and water
- C. Glutaraldehyde**
- D. Iodine

Explanation: *Glutaraldehyde is a high-level disinfectant specifically used for immersing surgical instruments. It's effective against bacteria, viruses, fungi, and spores, making it ideal for instrument sterilization when heat sterilization isn't possible.*

New Question – Tutor Topic: Preoperative Patient Care

31. Which of the following preoperative procedures is a medical assistant's responsibility?

- A. Providing the patient instructions before the procedure**
- B. Choosing the site for the patient's procedure
- C. Performing physical examination of the patient
- D. Ordering medications for the patient

Explanation: *Medical assistants play a crucial role in preoperative patient education, providing instructions about fasting requirements, medication instructions, what to wear/bring, arrival time, and post-op care basics. This is within the MA scope of practice and ensures patients are properly prepared.*

New Question – Tutor Topic: Sterile Technique

32. Which of the following clinical situations requires a medical assistant to apply sterile gloves?

- A. Assisting in suturing**
- B. Obtaining a throat culture

- C. Assisting in an endoscopic procedure
- D. Pouring sterile solutions during a procedure

Explanation: *Sterile gloves are required when working in a sterile field or performing procedures that enter sterile body tissues or the vascular system. Suturing involves piercing the skin and working with internal tissues, requiring sterile technique.*

Section 6: Biohazard Disposal & OSHA

33. After collecting a urine specimen, place it in a labeled container inside a **biohazard** transport bag.

All specimens must be contained in a biohazard bag for safe transport to prevent exposure.

34. A **red** color label identifies a solution as flammable.

Red label = flammable. Red container = biohazardous waste. The same color is used in two different contexts — know both.

35. When using a new cleaning solution, what should the MA consult to identify potential hazards?

A. The product label only

B. MSDS / SDS

C. OSHA website

D. The facility policy manual

Explanation: *The Material Safety Data Sheet (now Safety Data Sheet) lists hazards, required PPE, spill procedures, and first aid for every chemical.*

36. Per OSHA, a facility should review and update its exposure control plan **annually**.

Annual review is required by OSHA's Bloodborne Pathogens Standard (29 CFR 1910.1030). Updates needed when procedures change.

37. After a needlestick injury, blood from a patient splashes onto the MA's forearm. List the correct steps in order.

1. Decontaminate the exposed area (wash with soap and water) 2. Report the incident to the supervisor 3. Complete an exposure incident report 4. Seek post-exposure medical evaluation (provided by employer at no cost)

Decontaminate FIRST — this is the OSHA-specified first step. Do not squeeze the wound. Post-exposure evaluation is employer-funded.