

Component III: Clinical

Module A: Exam Room Procedures

Topic 1: Medical Asepsis/Infection Control

Statement of Purpose

To prepare the learner with basic knowledge and skills necessary to follow the principles of infection control and to protect the client and self from risk of infection.

Student Learning Outcomes

Upon completion of this topic, the learner will be able to:

1. Spell and define the key terms.
2. Differentiate between standard precautions and transmission-based precautions.
3. List several requirements when following standard precautions.
4. Discuss how to properly clean and decontaminate spills of blood or body fluids.
5. Discuss the disposal of medical wastes, including the information to be found on the label of each container.
6. Determine types of medical waste generated.
7. Define a microorganism and give examples of various types of microorganisms.
8. List several ways the body can defend itself against disease.
9. List the body's protective mechanisms to infection.
10. Identify and describe conditions that promote the growth and spread of microorganisms.
11. Differentiate between direct and indirect transmission and give an example of each.
12. Identify and describe conditions that promote the growth of pathogens.
13. List the six links in the chain of infection in the proper order.
14. Differentiate between medical and surgical asepsis.
15. Devise a work place information sheet on the levels of infection control.
16. Explain how proper hand washing helps prevent the spread of microorganisms and when hand washing should be performed.
17. List several guidelines to follow in order to maintain medical asepsis.
18. List selected infectious diseases, including the mode of transmission, signs and symptoms of each.
19. Discuss the purpose, concerns and selected regulations as related to infection control and the Medical Assistant.
20. Perform a medical aseptic hand washing and use alcohol hand sanitizer
21. Perform a surgical scrub.
22. Demonstrate application of non-sterile gloves and removal of gloves after procedure.

Terminology

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| 1. Alcohol-based handrubs | 7. Disease |
| 2. Asepsis | 8. Environmental Protection Agency (EPA) |
| 3. Biohazardous waste | 9. Infection |
| 4. Carrier | 10. Inflammation |
| 5. Clinical Laboratory Improvement Amendments (CLIA) | 11. Material Safety Data Sheet (MSDS) |
| 6. Department of Health and Human Services (DHHS) | 12. Medical asepsis |
| | 13. Medical solid waste |

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| 14. Medical waste | 19. Resident flora |
| 15. Microorganism | 20. Standard precautions |
| 16. Normal flora | 21. Surgical asepsis |
| 17. Pathogen/nonpathogen | 22. Transient flora |
| 18. Pyogenic | |

References

1. Davis, F.A. (2013). *Taber's Cyclopedic Medical Dictionary (22nd Ed.)*. Philadelphia PA: F.A. Davis Company.
2. Dennerll, J.T., & Davis, P.E. (2010). *Medical Terminology: A Programmed Systems Approach (10th Ed.)*. Clifton Park, NY: Delmar, Cengage Learning.
3. Kronenberger, J., Southard D. L., & Woodson, D. (2013). *Comprehensive Medical Assisting (4th Ed.)*. Philadelphia, PA: Lippincott, Williams & Wilkins.
4. Blesi, M., Wise, B.A., Kelley-Arney, C, (2012) *Medical Assisting Administrative and Clinical Competencies (7th Ed.)* Clifton Park, NY: Delmar, Cengage Learning.
5. Lindh, W., Pooler, M., Tampara, C., Dahl, B., Morris J. (2009). *Comprehensive Medical Assisting Administrative and Clinical Competencies (4th Ed.)*. Clifton Park, NY.: Cengage Learning
6. Kier, L., Wise, B.A., Krebs, C., & Kelley-Arney, C., (2011) *Medical assisting administrative and clinical competencies (7th Ed.)* Clifton Park, NY: Thomson Delmar Learning.
7. Booth, K.A., Whicker, L.G., Wyman, T.D., Moaney-Wright, S. (2011). *Medical Assisting: Administrative & Clinical Competencies with Anatomy and Physiology. (4th Ed.)* New York, New York: Mcgraw-Hill Company, Inc.
8. Proctor, D.B, Young-Adams, A.P. (2011). *Kinn's The Medical Assistant: An Applied Learning Approach (11th Ed.)*. Philadelphia, PA: Saunders Elsevier.

Websites

1. www.osha.gov
2. www.cdc.gov
3. www.innerbody.com
4. www.epa.gov
5. www.mbc.ca.gov/allied/medical_assistants.html
6. www.jointcommision.org

Content Outline/Theory Objectives	Suggested Learning Activities
<p>Objective 1 Spell and define key terms.</p> <ul style="list-style-type: none"> A. Review the terms listed in the terminology section. B. Spell the listed terms accurately. C. Pronounce the terms correctly. D. Use the terms in their proper context. 	<ul style="list-style-type: none"> A. Games: word searches, crossword puzzles, Family Feud, Jeopardy, bingo, spelling bee, hangman, and concentration. B. Administer vocabulary pre-test and post-test. C. Discuss learning gaps and plan for applying vocabulary.
<p>Objective 2 Differentiate between standard precautions and transmission based precautions.</p> <ul style="list-style-type: none"> A. Standard Precautions <ul style="list-style-type: none"> 1. Purpose is to reduce the risk of transmission of bloodborne pathogens. 2. Used for all patients regardless of diagnosis in situations that include <ul style="list-style-type: none"> a. Blood (visible blood need not be present for this to apply). b. Body fluids, secretions, excretions (except sweat). c. Non-intact skin. d. Mucous membranes. B. Transmission-based Precautions <ul style="list-style-type: none"> 1. Used in addition to standard precautions. 2. Used for patients with known or suspected infectious disease that can be transmitted by direct-contact, moisture droplets (large particles), or airborne (small particles) <ul style="list-style-type: none"> a. Airborne precautions with diseases such as measles, tuberculosis, varicella <ul style="list-style-type: none"> 1) Wear a mask when with the patient. 2) Have patient wear a mask when away from home. 3) Patient should be isolated from others. b. Droplet precautions with diseases such as influenza, meningitis, mumps, rubella and streptococcal pharyngitis. <ul style="list-style-type: none"> 1) Wear mask when with patient. 2) Have patient wear a mask when away from home. 3) Patient should be isolated from others. c. Contact precautions with diseases such as shigella, herpes simplex virus, impetigo, pediculosis, and scabies 	<ul style="list-style-type: none"> A. Lecture/Discussion B. Assigned Readings C. Divide students into groups. Assign each group a related topic. Have students create a poster and explain related precautions. <ul style="list-style-type: none"> 1. Airborne precautions 2. Handwashing techniques 3. Various soaps, providing example of each

<ol style="list-style-type: none"> 1) Wear gloves when providing care to patient. 2) Wear gown if there is risk that clothing will have contact with patient or infectious material. 	
<p>Objective 3 List several requirements when following standard precautions.</p> <ol style="list-style-type: none"> A. Wash your hands after coming into contact with <ol style="list-style-type: none"> 1. Blood and body fluids, whether you have worn gloves or not. 2. Contaminated items, whether you have worn gloves or not. 3. Immediately after removing gloves. 4. Between each patient contact. 5. As needed to reduce the risk of transmitting microorganisms. 6. Use antimicrobial or antiseptic soap agent for specific situations and plain soap for routine hand washing. B. Wear clean, nonsterile gloves when there is contact or potential contact with blood, body fluids, mucous membranes, nonintact skin, and contaminated items. C. Following patient contact, immediately remove your gloves and wash your hands. D. Wear appropriate protective barrier equipment when there is a possibility of splash or splatter with blood and body fluids. E. Appropriately dispose of single-use items. F. Decontaminate or otherwise care for equipment and supplies in such a way as to avoid contact with skin, mucous membranes, and clothing. 	<ol style="list-style-type: none"> A. Lecture/Discussion B. Assigned Readings C. Have students put on exam gloves. Smear ketchup onto gloves. Observe students removing gloves without contaminating themselves.
<p>Objective 4 Discuss how to properly clean and decontaminate spills of blood or body fluids.</p> <ol style="list-style-type: none"> A. Clean immediately with an Environmental Protection Agency (EPA)-approved germicide or a 1:10 solution of household bleach and water. B. Put on gloves, protective eyewear, and moisture-resistant gown if there is a possibility of splash or splatter. C. Remove visible blood or body fluid with disposable towels and then discard in the appropriate biohazard container. D. Decontaminate the surface with appropriate disinfectant. E. Remove gloves and dispose of them appropriately. F. Wash hands thoroughly. 	<ol style="list-style-type: none"> A. Lecture/Discussion B. Assigned Readings C. Mock clean-ups using ketchup spills on floor or counter tops.
<p>Objective 5 Discuss the disposal of medical wastes, including the information to be found on the label of each container.</p>	

<p>A. Medical waste includes any waste that has been generated or has been used in the following ways:</p> <ol style="list-style-type: none"> 1. Diagnosis. 2. Treatment or immunization. 3. In research. 4. In the production or testing of biological specimens. 5. Any item or substance that may contain infectious agents and pose a substantial threat to health. <p>B. Containers for disposal</p> <ol style="list-style-type: none"> 1. Sharps containers <ol style="list-style-type: none"> a. Leak proof, rigid, puncture-resistant containers b. Used to dispose of “sharps” c. Can be easily sealed 2. Red bag <ol style="list-style-type: none"> a. Strong plastic bag, impervious to moisture b. Used for non-sharp items <p>C. Labeling</p> <ol style="list-style-type: none"> 1. All containers used for biohazardous waste will have the international biohazard symbol and the word “biohazard” on them 2. All containers used for biohazardous waste will be labeled with the following information pertaining to the producer, generator, and facility involved with them: <ol style="list-style-type: none"> a. Name b. Address c. Telephone number, including area code 	<p>A. Lecture/Discussion B. Assigned Readings C. Have a guest speaker from a local bio-hazardous waste disposal company talk with the students.</p>
<p>Objective 6 Determine types of medical waste generated.</p> <p>A. Biohazardous Waste</p> <ol style="list-style-type: none"> 1. Laboratory waste <ol style="list-style-type: none"> a. Specimen cultures from medical or pathological laboratories. b. Cultures and stocks of infectious agents from research and industrial laboratories. c. Wastes from the production of biological agents. d. Inoculated and mixed cultures or material which may contain infectious agents. 2. Containers and articles contaminated with regulated body fluids <ol style="list-style-type: none"> a. Cerebrospinal. b. Synovial. c. Pleural. d. Amniotic. e. Blood. f. Semen. 3. Sharps, objects or devices having acute rigid corners, edges or protuberances capable of cutting 	<p>A. Lecture/Discussion B. Assigned Readings</p>

<ul style="list-style-type: none"> or piercing <ul style="list-style-type: none"> a. Hypodermic needles. b. Blades. c. Slides. d. Pipettes. 4. Any specimen sent to a laboratory for microbiological analysis <ul style="list-style-type: none"> a. Blood. b. Regulated body fluids. 5. Surgical, body parts or tissues removed surgically or by autopsy. B. Medical solid waste <ul style="list-style-type: none"> 1. Empty, contaminated specimen containers. 2. Bandages. 3. Dressings containing non-liquid blood. 4. Surgical gloves. 	
<p>Objective 7 Define a microorganism and give examples of various types of microorganisms.</p> <ul style="list-style-type: none"> A. Microorganism <ul style="list-style-type: none"> 1. Tiny living plant or animal. 2. Not visible to the naked eye. B. Classification <ul style="list-style-type: none"> 1. Bacteria <ul style="list-style-type: none"> a. One celled organisms. b. Staining makes their structures clearly visible. c. Found in soil, hot springs, polar ice, on and within plants, and animals. d. Many types, making classification difficult. e. Grouped according to shape and arrangement <ul style="list-style-type: none"> 1) Bacilli, rod shaped <ul style="list-style-type: none"> • Can occur singly, in pairs or in chains. • Many bacilli contain flagella <ul style="list-style-type: none"> ○ Threadlike projections similar to tail. ○ Allow the organism to move. • Have ability to form spores or thick-walled capsules when growth conditions are poor. • Extremely difficult to kill while in spore form. • Causes diseases such as tetanus, diphtheria, typhoid fever, Legionnaires' disease, tuberculosis, whooping cough, botulism, and pertussis. 2) Cocci, spherical <ul style="list-style-type: none"> • Diplococci 	<ul style="list-style-type: none"> A. Lecture/Discussion B. Assigned Readings C. Divide class into small groups and assign each group an infectious disease to research D. Have students discuss their thoughts and feelings regarding providing care to patients with known communicable disease. E. Have student's role play various situations. F. Medical Assistant puts on gloves to draw blood and patient says "you don't have to use gloves, I don't have anything contagious." <ul style="list-style-type: none"> 1. Patient with active tuberculosis comes into office without wearing a mask.

- Occur in pairs.
- Cause diseases such as gonorrhea, meningitis, and pneumonia.
- Streptococci
 - Occur in chains.
 - Causes severe sore throat and rheumatic fever.
- Staphylococci
 - Occur in grape-like clusters or groups.
 - Most common pyogenic (pus-producing) microorganism. Cause wound infections.
- 3) Curved rods, Spiral or corkscrew shaped
 - Diseases depending on causative agent include syphilis and cholera.

2. Fungi

- a. Simple plantlike organisms.
- b. Larger and more complicated than bacteria.
- c. Lack green pigment chlorophyll.
- d. Grow best in dark, damp places.
- e. Includes yeasts and molds.
- f. Diseases caused by molds are called mycotic infections.
 - 1) Ringworm, tinea capitis and tinea corporis.
 - 2) Athlete's foot, tinea pedis
 - 3) Candida, thrush (candidiasis) and vaginitis.

3. Viruses

- a. Much smaller than bacteria, viewed with an electron microscope.
- b. Must have a living cell to survive and reproduce.
- c. Spread from human to human by blood and body secretions.
- d. Not usually susceptible to antibiotic treatment
- e. Diseases
 - 1) Acquired immunodeficiency syndrome (AIDS).
 - 2) Chickenpox.
 - 3) Common cold.
 - 4) Hepatitis.
 - 5) Herpes.
 - 6) Human immunodeficiency virus (HIV).
 - 7) Influenza.
 - 8) Measles.
 - 9) Mumps.
 - 10) Poliomyelitis.
 - 11) Rubella.

12) Warts.

f. Three diseases of major concern to the health care worker

1) Hepatitis B

- Caused by HBV virus transmitted by blood serum and body secretions.
- Affects the liver and can lead to cirrhosis, liver cancer and liver failure.
- Under federal law, employers must provide the vaccination at no cost to health care workers with occupational exposure to blood or other body secretions.
- Individuals have the right to refuse the vaccination, in which case employer must keep a written record proving that the vaccine was offered.

2) Acquired Immunodeficiency Syndrome (AIDS) is caused by the Human Immunodeficiency Virus (HIV) and it suppresses the immune system

- HIV infection is spread in three ways
 - Sexual intercourse.
 - Direct contact with infected blood.
 - From an infected mother to her unborn child.
- No cure or vaccine is available.

3) Hepatitis C is caused by infection with the hepatitis C virus and it damages the liver.

- Hepatitis C is spread if someone comes into contact with the blood of someone who has Hepatitis C.
- The most common way to get hepatitis C is by sharing needles and other equipment (such as cotton, spoons, and water) used to inject illegal drugs.

4. Protozoa

- a. One celled, animal like.
- b. Larger than bacteria.
- c. Commonly found in soil and water.
- d. Divisions
 - 1) Amoeba.
 - 2) Ciliates.
 - 3) Flagellate.
 - 4) Sporozoa.

5. Helminths

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| <ul style="list-style-type: none">a. Species of worms.b. Parasitic by nature.c. Infestation, presence of parasitic worms in the bodyd. Divisions<ul style="list-style-type: none">1) Roundworms<ul style="list-style-type: none">• Common in Asia and in the southern United States. Frequently found in children 4-12 years of age.• May infest the lungs and/or intestines.• Eggs are distributed in the soil by contaminated excreta.• Eggs are resistant to extremes in hot or cold.2) Pinworms<ul style="list-style-type: none">• Common in children.• Infest the intestines.• Eggs are distributed in the soil by contaminated excreta.• Eggs are commonly transferred by the hands.3) Hookworms<ul style="list-style-type: none">• Infest the small intestine.• Dangerous because they are blood sucking parasites.• Eggs are distributed in the soil by contaminated excreta.• Eggs develop into larvae that can enter intact skin, such as in bare feet.4) Trichina<ul style="list-style-type: none">• Type of roundworm.• Found in pork and muscle foods.• Causes trichinosis.5) Flatworms<ul style="list-style-type: none">• Spread by infected improperly cooked meats (fish, pork and beef).• Infest the blood, lungs, liver and intestine. | |
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<p>Objective 8 List several ways the body can defend itself against disease.</p> <ul style="list-style-type: none"> A. Adequate nutritional intake. B. Proper amount of rest. C. Adequate means of coping with stress. D. Maintaining good general health. E. Maintaining a clean environment. F. Immunizations. 	<ul style="list-style-type: none"> A. Lecture/Discussion B. Assigned Readings C. Ask students to assess their individual diet, rest patterns, personal environment, and stress level D. Have student then assess if he/she is a susceptible host or at risk of infection.
<p>Objective 9 List the body's protective mechanisms to infection.</p> <ul style="list-style-type: none"> A. Integumentary system <ul style="list-style-type: none"> 1. Must be intact. 2. Chemical barrier with acid pH and antibacterial enzyme. 3. Perspiration inhibits bacterial growth. B. Mucous membrane <ul style="list-style-type: none"> 1. Mucus. 2. Cilia. C. Respiratory tract <ul style="list-style-type: none"> 1. Reflexes such as coughing and sneezing. 2. Hairs that line the nostrils. 3. Mucous membrane lining. D. Gastrointestinal tract <ul style="list-style-type: none"> 1. Hydrochloric acid. 2. Bile. 	<ul style="list-style-type: none"> A. Lecture/Discussion B. Assigned Readings
<p>Objective 10 Identify and describe conditions that promote the growth and spread of microorganisms.</p> <ul style="list-style-type: none"> A. Normal or resident microorganisms in abundance on or in the body <ul style="list-style-type: none"> 1. Skin. 2. Eyes. 3. Mouth. 4. Gastrointestinal tract. 5. Genitourinary tract. 6. Respiratory system. 7. Example: staphylococci. B. In our environment (transient flora) <ul style="list-style-type: none"> 1. Surfaces of inanimate objects. 2. Air ducts/filters. 3. Food that is not properly handled. 	<ul style="list-style-type: none"> A. Lecture/Discussion B. Assigned Readings
<p>Objective 11 Differentiate between direct and indirect transmission and give an example of each.</p> <ul style="list-style-type: none"> A. Direct transmission, occurs through direct contact with pathogenic microorganism <ul style="list-style-type: none"> 1. Shaking hands. 	<ul style="list-style-type: none"> A. Lecture/Discussion B. Assigned Readings

2. Kissing.
 3. Sexual contact.
 4. Inhaling contaminated air droplets.
 5. Direct contact with blood/body fluids.
- B. Indirect transmission, occurs through contact with an object that is contaminated
1. Food.
 2. Fluids; water, milk and juices.
 3. Vectors; mosquitoes, ticks, lice and fleas.
- C. Microorganisms can be transmitted by direct or indirect contact
1. Animal Sources
 - a. Can be communicated to humans through direct and indirect contact.
 - b. Animal may appear symptomatic or asymptomatic.
 2. Airborne Sources
 - a. Microorganisms in the respiratory tract can be exhaled from the mouth or nose into the air.
 - b. Microorganisms discharged this way can settle onto surfaces.
 - c. All surfaces should be kept clean by disinfecting.
 3. Direct Contact
 - a. Direct transmission of pathogen from one host to another.
 - b. Sexual contact.
 4. Foodborne Sources
 - a. Food and water can contain pathogens.
 - b. All food and water should be properly handled to avoid contamination.
 5. Fomite Sources
 - a. Inanimate objects such as cooking utensils, clothing, linens, instruments and supplies.
 - b. All items should be properly cleansed before use.
 6. Human carriers
 - a. Persons who harbor the pathogen within/on their body.
 - b. Carrier may be symptomatic or asymptomatic.
 7. Insect Sources
 - a. Can carry the pathogen.
 - b. Examples are, house fly, mosquito, flea, and ticks.
 8. Soil-borne Sources
 - a. Spore-forming microorganisms in the soil can enter the body through a cut or body orifice.
 - b. Fruits and vegetables require thorough

cleaning before consumption.	
<p>Objective 12 Identify and describe conditions that promote the growth of pathogens.</p> <p>A. Growth requirements for all microorganisms</p> <ol style="list-style-type: none"> 1. Moisture <ol style="list-style-type: none"> a. Living organism requires water <ol style="list-style-type: none"> 1) To carry out cell metabolism. 2) To carry away wastes. 2. Nutrients <ol style="list-style-type: none"> a. All microbes require an energy source. <ol style="list-style-type: none"> 1) Autotrophs use inorganic or nonliving substance. 2) Heterotrophs use organic living substances for food. 3. Temperature <ol style="list-style-type: none"> a. Each microorganism has a temperature at which it grows best. b. Optimum growth temperature for most microbes is 98.6 F (37 C). 4. Oxygen <ol style="list-style-type: none"> a. Most microbes require oxygen. b. Aerobes require oxygen to grow and multiply. c. Anaerobes grow and multiply only in the absence of oxygen. 5. pH, must be neutral to slightly alkaline. 6. Darkness, few will survive in sunlight/bright light. <p>B. Conditions that promote the growth of pathogens</p> <ol style="list-style-type: none"> 1. Unclean environment/conditions. 2. Poor personal hygiene. 3. Low/weakened immune system. 	<p>A. Lecture/Discussion B. Assigned Readings</p>

<p>Objective 13 List in order the six links in the chain of infection.</p> <p>A. All links must be in place before infection can spread</p> <ol style="list-style-type: none"> 1. Infectious agent – pathogenic microorganism. 2. Reservoir host – place to grow and reproduce <ol style="list-style-type: none"> a. In or on a living host. b. On an inanimate object. 3. Portal of exit – escape route from the reservoir <ol style="list-style-type: none"> a. Skin. b. Respiratory tract. c. Digestive tract. d. Urinary tract. e. Reproductive tract. 4. Vehicle of transmission – means to be carried about <ol style="list-style-type: none"> a. Blood or body fluids. b. Moisture droplets. c. Inanimate objects. d. Hands. 5. Portal of entry – body part where organisms enters <ol style="list-style-type: none"> a. Skin. b. Respiratory tract. c. Digestive tract. d. Urinary tract. e. Reproductive tract. 6. Susceptible host – Person with weakened or compromised immune system. 	<p>A. Lecture/Discussion B. Assigned Readings</p>
<p>Objective 14 Differentiate between medical and surgical asepsis.</p> <p>A. Medical asepsis</p> <ol style="list-style-type: none"> 1. Clean technique. 2. An object or area is free from infection. 3. Non-pathogens are still present but pathogens are not. 4. Purpose is to prevent the transmission of microorganisms <ol style="list-style-type: none"> a. Proper hand washing is crucial to prevent the transmission of microorganisms. b. Proper disposal or disinfection of contaminated articles, such as supplies/instruments contaminated dressings. <p>B. Surgical asepsis</p> <ol style="list-style-type: none"> 1. Sterile technique. 2. Free from all microbial life including spores. 3. Requires sterilization process. 4. Used when entering any part of the body that is normally sterile <ol style="list-style-type: none"> a. Surgical procedures. b. Catheterization. c. Injections. d. Sterile dressing changes. 	<p>A. Lecture/Discussion B. Assigned Readings</p>

Objective 15**Devise a work place information sheet on the levels of infection control.**

- A. High level disinfection
 - 1. Slightly less effective than sterilization.
 - 2. Does not destroy bacterial spores.
 - 3. Methods
 - a. Hot water pasteurization.
 - b. Submersion in an EPA-approved disinfecting chemical.
 - 4. Required for reusable instruments that have contact with mucous membranes.
- B. Intermediate level disinfection
 - 1. Does not destroy bacterial spores.
 - 2. Destroys mycobacterium tuberculosis, vegetative bacteria, most viruses and most fungi.
 - 3. Methods
 - a. Use of EPA approved chemical germicides.
 - b. Solutions of 1:10 dilution of household bleach and water ($\frac{1}{4}$ cup bleach per quart of water).
 - 4. Used for surfaces that come into contact with skin and has been visibly contaminated with blood or body fluids
 - a. Stethoscopes.
 - b. Blood Pressure cuff.
 - c. Splints.
- C. Low level disinfection
 - 1. Destroys most bacteria, some viruses and some fungi.
 - 2. Does not destroy mycobacterium tuberculosis or bacterial spores.
 - 3. Methods include EPA-approved disinfectants with no tuberculocidal properties.
 - 4. Used for routine cleaning in the absence of contamination with visible blood or body fluids.

- A. Lecture/Discussion
- B. Assigned Readings
- C. Ask students to work in small groups to develop the information sheet

Objective 16**Explain how proper handwashing helps prevent the spread of microorganisms and when handwashing should be performed.**

- A. Handwashing removes both resident and transient flora from the hands.
- B. Proper choice of soap
 - 1. Plain soaps cleanse skin in conjunction with friction.
 - 2. Detergents are more effective than soap and can emulsify dirt and oil on the skin.
 - 3. Antimicrobials have a chemical agent that inhibits the growth of or will kill microbes.
- C. Wash hands
 - 1. Arriving at the medical facility.
 - 2. Before and after each patient contact.

- A. Lecture/Discussion
- B. Assigned Readings
- C. Have students practice aseptic handwashing techniques while two other students observe and critique.

<ol style="list-style-type: none"> 3. Before and after donning gloves. 4. After contact with blood or other potentially infectious materials. 5. Before and after eating. 6. After using the restroom. 7. After blowing or wiping the nose or sneezing. 8. When the hands are obviously contaminated. 9. Before leaving the medical facility. 	
<p>Objective 17 List several guidelines to follow in order to maintain medical asepsis.</p> <ol style="list-style-type: none"> A. Avoid touching clothing with soiled instruments, supplies and linen. B. Presume the floor to be contaminated; if an item falls on the floor, discard it appropriately. C. Keep work areas clean and neat at all times. D. Clean work areas, exam rooms, supplies and equipment immediately after use. E. Use standard precautions with all patients, at all times. F. Presume that blood and body fluids are contaminated. G. Follow CDC and OSHA published guidelines to prevent the transmission of disease. 	<ol style="list-style-type: none"> A. Lecture/Discussion B. Assigned Readings

Objective 18

List selected infectious diseases, including the mode of transmission, signs, and symptoms of each.

A. HIV/AIDS

1. Transmitted through direct contact, sexual, anal or vaginal intercourse, sharing intravenous drug needles, infected mother to child or blood to blood from cuts, punctures and blood transfusions.
2. Signs and symptoms include loss of appetite, weight loss, fever, night sweats, fatigue, decreased resistance to infection, diarrhea and enlarged lymph nodes.

B. Chickenpox

1. Transmitted through direct and indirect contact, droplet, and airborne secretions of infected people.
2. Signs and symptoms include crops of vesicular eruptions on the skin, low grade fever and headaches.

C. Strep throat

1. Transmitted through direct contact.
2. Signs and symptoms include fever, red sore throat; glands of neck become swollen, whitish patches on back of throat.

D. Common cold

1. Transmitted by direct or indirect contact with infected person.
2. Signs and symptoms vary including watery eyes, low grade fever, runny nose, malaise and chills.

E. Conjunctivitis

1. Transmitted by direct or indirect contact with discharge from upper respiratory system or eyes of infected person.
2. Signs and symptoms include red, itching and burning eyes.

F. Influenza

1. Transmitted by direct or indirect contact and droplet infection from respiratory tract.
2. Signs and symptoms include upper respiratory infection, fever, malaise, nausea and vomiting.

A. Lecture/Discussion

B. Assigned Readings

- h. Moderate-Complexity Tests
- c. High-Complexity Tests.

B. Occupational Safety and Health Administration (OSHA)

1. Established by the federal government.
2. Published and released OSHA Occupational Exposure to Bloodborne Pathogens Standards in December 1991
 - a. Intended to reduce employee's risk to infectious diseases.
 - b. Failure by employers to comply may result in a citation
 - 1) Maximum penalty of \$7,000.00 for

A. Lecture/Discussion

B. Assigned Readings

<p>each violation.</p> <p>2) Maximum penalty of \$70,000.00 for repeated violations.</p> <p>C. Center for Disease Control and Prevention (CDC)</p> <ol style="list-style-type: none"> 1. Division of the U.S. Public Health Service in Atlanta, Georgia, Telephone # (800) 232-4636. 2. Investigates and controls various diseases, especially those that have epidemic potential. 3. Responsible for national programs to improve laboratory conditions and encourage health and safety in the workplace. <p>D. Material Safety Data Sheet (MSDS)</p> <ol style="list-style-type: none"> 1. Descriptive information sheet that accompanies a chemical or a chemical mixture. 2. Provides identity of the material, physical hazard, acute and chronic health hazards associated with contact or exposure to the substance. 3. Estimated 600,000 hazardous chemical products in use in American workplaces. 	
<p>Objective 20 Perform a medical aseptic hand washing and use alcohol hand sanitizer</p> <p>A. Proper Handwashing</p> <ol style="list-style-type: none"> 1. Remove all rings and bracelets (watch may be pushed above the wrist). 2. Stand close to handwashing area without touching sink. 3. Turn on faucet dispensing warm water. 4. Wet hands and wrists under running warm water. 5. Apply soap from dispenser. 6. Work soap into a lather for at least 2 minutes. 7. Scrub the palm of one hand with the fingertips of the other hand then switch hands. 8. Clean under nails with orangewood stick. 9. Rinse hands holding fingertips down. 10. Dry hands on paper towel, discard. 11. Use fresh dry towel to turn off faucet. <p>B. Alcohol-based handrubs, if used correctly, significantly decrease the number of microorganisms, take less time to use, and cause less irritation than traditional hand washing.</p> <ol style="list-style-type: none"> 1. Apply label-recommended amount of handrub to palm of one hand and rub hands together, covering all surfaces until hands are dry. <p>C. Hand washing or alcohol handrubs should be used before and after each patient is seen as well as after gloves are removed.</p>	<p>A. Lecture/Discussion B. Assigned Readings C. Provide time for practice D. Have students observe each other.</p>
<p>Objective 21 Perform a surgical scrub.</p> <ol style="list-style-type: none"> A. Remove all jewelry. B. Stand close to handwashing area without touching sink. 	<p>A. Lecture/Discussion B. Assigned Readings</p>

<ul style="list-style-type: none"> C. Turn on water (knee controls preferred). D. Wet hands and wrists under running warm water <ul style="list-style-type: none"> 1. Keep hands above waist. 2. Fingertips upright position. E. Apply bacterial soap <ul style="list-style-type: none"> 1. Work up lather. 2. Intertwine the fingers. 3. Work soap under nails (use orangewood stick if necessary). F. Brush (taken from sterile dispenser) used to scrub <ul style="list-style-type: none"> 1. Fingernails. 2. Backs of both hands. 3. Palms of hands. 4. Wrists. 5. Forearms. G. Rinse thoroughly <ul style="list-style-type: none"> 1. Rinse from fingertips to the forearms. 2. Keep hands higher than elbows. H. Dry hands thoroughly using sterile towel. I. Turn off water with knee control, if available. J. If hand apparatus available use a sterile towel or ask an assistant to turn off water. 	<ul style="list-style-type: none"> C. Provide time for practice. D. Have students observe each other.
<ul style="list-style-type: none"> A. Application of sterile gloves <ul style="list-style-type: none"> 1. Remove rings and other jewelry. 2. Wash hands using surgical scrub. 3. Remove outer wrapper of prepackaged gloves. 4. Fold back inner wrapper to expose gloves with cuffed end toward you. 5. Using non-dominant hand, pick up glove for dominant hand. 6. Use gloved hand to lift remaining glove <ul style="list-style-type: none"> a. Insert hand under cuff. b. Slide hand into glove. 7. Raise cuffs on arm by working under cuff fold. B. Removal of sterile and nonsterile gloves after procedure <ul style="list-style-type: none"> 1. With gloved dominant hand, grasp the area of the glove at the palm of the non-dominant hand and pull it away from the hand. 2. Pull the soiled glove down over the fingers by pulling it away with the gloved hand. 3. As the glove is being removed, ball it into the palm of the still gloved (dominant) hand. 4. Hold the balled glove firmly in the palm of the gloved hand and slip the ungloved fingers under the cuff of the gloved hand. Be careful not to touch the contaminated glove with ungloved fingers. 5. Stretch the glove up and away from the hand and turn it inside-out as it is pulled off over the first glove. 6. With both gloves off, the first is inside the palm of 	<ul style="list-style-type: none"> A. Lecture/Discussion B. Assigned Readings C. Provide adequate time for practice. D. Have students observe each other. E. Note when contamination occurs in wither application or removal.

the last glove and the last glove should be inside-out.

7. Discard in a biohazardous waste receptacle.

8. Wash hands thoroughly.