

ELEMENT I

THE RESPONSIBILITY TO ADHERE TO SCIENTIFICALLY ACCEPTED PRINCIPLES AND PRACTICES OF INFECTION CONTROL IN ALL HEALTHCARE SETTINGS AND TO MONITOR THOSE FOR WHOM THE PROFESSIONAL IS RESPONSIBLE

LEARNING OBJECTIVES

At the conclusion of course work or training on this element, the learner will be able to:

- Recognize the benefit to patients and healthcare workers of adhering to scientifically accepted principles and practices of infection prevention and control;
- Recognize the professional's responsibility to adhere to scientifically accepted infection prevention and control practices in all healthcare settings and the consequences of failing to comply; and
- Recognize the professional's responsibility to monitor infection prevention and control practices of those for whom he or she is responsible and intervene as necessary for compliance and safety.

CONTENT OUTLINE

- I. Source and definition of standards of professional conduct as they apply to infection prevention and control
 - A. Rules of the Board of Regents, Part 29.2 (a)(13)
 - B. Part 92 of Title 10 (Health) of the Official Compilation of Codes, Rules and Regulations of New York
 - C. Statements of relevant professional and national organizations
- II. Implications of professional conduct standards

- A. Professional responsibility to adhere to infection control standards
- B. Professional responsibility for monitoring the practice of others
- C. Consequences of failing to follow accepted standards of infection prevention and control

- 1. Increase risk of adverse health outcomes for patients and healthcare workers
- 2. Subject to charges of professional misconduct
 - a. Mechanisms for reporting misconduct
 - b. Complaint investigation
 - c. Possible outcomes
 - 1) Disciplinary action
 - 2) Revocation of professional license
 - 3) Professional liability

III. Methods of Compliance

- A. Participation in required infection prevention and control training
- B. Adherence to accepted principles and practices of infection prevention and control

ELEMENT II

MODES AND MECHANISMS OF TRANSMISSION OF PATHOGENIC ORGANISMS IN THE HEALTHCARE SETTING AND STRATEGIES FOR PREVENTION AND CONTROL

LEARNING OBJECTIVES

Upon completion of course work or training on this element, the learner will be able to:

- Describe how pathogenic organisms may be spread in healthcare settings;
- Identify the factors which influence the outcome of an exposure;
- List strategies for preventing transmission of pathogenic organisms; and
- Describe how infection control concepts are applied in professional practice.

DEFINITIONS

Pathogen or infectious agent: A biological, physical, or chemical entity capable of causing disease. Biological agents may be bacteria, viruses, fungi, protozoa, helminthes, or prions.

Portal of entry: The means by which an infectious agent enters the susceptible host.

Portal of exit: The path by which an infectious agent leaves the reservoir.

Reservoir: Place in which an infectious agent can survive but may or may not multiply. Healthcare workers may also be reservoirs for a number of nosocomial organisms.

Standard precautions: A group of infection prevention and control strategies that combine the major features of Universal Precautions and Body Substance Isolation and are based on the principle that all blood, body fluids, secretions, excretions except sweat, nonintact skin, and mucous membranes may contain transmissible infectious agents.

Susceptible host: A person or animal not possessing sufficient resistance to a particular

infectious agent to prevent contracting infection or disease when exposed to the agent.

Transmission: Any mechanism by which a pathogen is spread by a source or reservoir to a person.

Common vehicle: Contaminated material, product, or substance that serves as an intermediate means by which an infectious agent is introduced into a susceptible host through a suitable portal of entry.

CONTENT OUTLINE

I. Overview of components of the infectious disease process

A. Concept of "The Chain of Infection"

1. Pathogen or infectious agent
2. Reservoir (human, animal, environmental)
3. Portal of exit
 - a. Sites (respiratory tract, gastrointestinal tract, genitourinary tract, skin/mucous membrane, transplacental, blood)
 - b. Mechanisms (drainage, excretions, secretions)
4. Portal of entry
 - a. Sites (respiratory tract, gastrointestinal tract, genitourinary tract, skin/mucous membrane, transplacental, parenteral)
 - b. Mechanisms (percutaneous injury, invasive devices/procedures (e.g., vascular access), surgical incision)
5. Mode of transmission
 - a. Contact with pathogen
 - 1) Direct
 - 2) Indirect
 - 3) Droplet
 - 4) Airborne
 - b. Common vehicle (e.g., food, water)
 - c. Vectorborne
6. Susceptible host

B. Factor influencing the outcome of exposures

1. Host factors
 - a. Natural barriers (e.g., intact skin, respiratory cilia, gastric acid and motility, tears, normal flora)
 - b. Host immunity (e.g., inflammatory response, humoral immunity, cell-mediated immunity, immune memory)
2. Pathogen or infectious agent factors
 - a. Infectivity
 - b. Pathogenicity
 - c. Virulence
 - d. Size of inoculum
 - e. Route of exposure
 - f. Duration of exposure
3. Environmental factors
 - a. Contamination of environment
 - b. Contamination of equipment

II. Prevention strategies

- A. Standard precautions
 1. Respiratory hygiene/cough etiquette
 2. Safe injection practices (see Element III)
 3. Use of masks during spinal/epidural access procedures
- B. For patients infected with organisms other than bloodborne pathogens
 1. Early identification
 2. Prompt isolation
 3. Appropriate treatment
- C. Control of routes of transmission
 1. Hand hygiene
 - a. Appropriate selection and use of agents (e.g., soap and water, alcohol based hand sanitizers)
 - b. Factors influencing hand hygiene efficacy
 - c. Sources of potential contamination or cross-contamination

of hand hygiene materials

2. Use of appropriate barriers
 - a. Appropriate selection, donning, doffing, and disposal of personal protective equipment (PPE)
3. Appropriate isolation/cohorting of patients infected with communicable diseases
 - a. Standard precautions for all patients
 - b. Transmission based precautions for other pathogens
 - 1) Contact (direct, indirect)
 - 2) Droplet
 - 3) Airborne
 - c. Host support and protection
 - 1) Vaccination
 - 2) Pre-and post-exposure prophylaxis
 - 3) Protecting skin and immune system integrity
 - d. Environmental control measures
 - 1) Cleaning, disinfection, and sterilization of patient care equipment (see Element V)
 - 2) Environmental cleaning (housekeeping)
 - 3) Appropriate ventilation
 - 4) Waste management
 - 5) Linen and laundry management
 - 6) Food services
 - e. Engineering and work practice controls (see Element III)
 - f. Training and education of healthcare workers

ELEMENT III

USE OF ENGINEERING AND WORK PRACTICE CONTROLS TO REDUCE THE OPPORTUNITY FOR PATIENT AND HEALTHCARE WORKER EXPOSURE TO POTENTIALLY INFECTIOUS MATERIAL IN ALL HEALTHCARE SETTINGS

LEARNING OBJECTIVES

Upon completion of course work or training on this element, the learner will be able to:

- Define healthcare-associated disease transmission, engineering controls, safe injection practices, and work practice controls;
- Describe specific high-risk practices and procedures that increase the opportunity for healthcare worker and patient exposure to potentially infectious material;
- Describe specific measures to prevent transmission of bloodborne pathogens from patient to patient, healthcare worker to patient, and patient to healthcare worker via contaminated injection equipment;
- Identify work practice controls designed to eliminate the transmission of bloodborne pathogens during use of sharp instruments (e.g., scalpel blades and their holders (if not disposable), lancets, lancet platforms/pens, puncture devices, injections); and
- Identify where engineering or work practice controls can be utilized to prevent patient exposure to bloodborne pathogens.

DEFINITIONS

Healthcare-associated infections (HAIs): Infections associated with healthcare delivery in any setting (e.g., hospitals, long-term care facilities, ambulatory settings, home care).

Engineering controls: Controls (e.g., sharps disposal containers, self-sheathing needles, safer medical devices, such as sharps with engineered sharps injury protections and needleless systems) that isolate or remove the bloodborne pathogens hazard from the

workplace.

Injection safety (or safe injection practices): A set of measures taken to perform injections in an optimally safe manner for patients, healthcare personnel, and others. A safe injection does not harm the recipient, does not expose the provider to any avoidable risks and does not result in waste that is dangerous for the community. Injection safety includes practices intended to prevent transmission of bloodborne pathogens between one patient and another, or between a healthcare worker and a patient, and also to prevent harms such as needlestick injuries.

Single-use medication vial: A bottle of liquid medication that is given to a patient through a needle and syringe. Single-use vials contain only one dose of medication and should only be used once for one patient, using a new needle and new syringe.

Multi-dose medication vial: bottle of liquid medication that contains more than one dose of medication and is often used by diabetic patients or for vaccinations.

Work practice controls: Controls that reduce the likelihood of exposure to bloodborne pathogens by altering the manner in which a task is performed (e.g., prohibiting recapping of needles by a two-handed technique).

CONTENT OUTLINE

I. High risk practices and procedures (by exposure type) capable of causing healthcare acquired infection with bloodborne pathogens:

A. Percutaneous exposures

1. Exposures occurring through handling/disassembly/disposal/reprocessing of contaminated needles and other sharp objects:

a. Manipulating contaminated needles and other sharp objects by hand (e.g., removing scalpel blades from holders,

removing needles from syringes),

- b. Delaying or improperly disposing (e.g., leaving contaminated needles or sharp objects on counters/workspaces or disposing in non-puncture-resistant receptacles),
- c. Recapping contaminated needles and other sharp objects using a two-handed technique.

- 2. Performing procedures where there is poor visualization, such as:
 - a. Blind suturing,
 - b. Non-dominant hand opposing or next to a sharp,
 - c. Performing procedures where bone spicules or metal fragments are produced.

B. Mucous membrane/non-intact skin exposures

- 1. Direct blood or body fluids contact with the eyes, nose, mouth, or other mucous membranes via:
 - a. Contact with contaminated hands,
 - b. Contact with open skin lesions/dermatitis,
 - c. Splashes or sprays of blood or body fluids (e.g., during irrigation or suctioning).

C. Parenteral exposures

- 1. Injection with infectious material may occur during:
 - a. Administration of parenteral medication,
 - b. Sharing of blood monitoring devices (e.g., glucometers, hemoglobinometers, lancets, lancet platforms/pens),
 - c. Infusion of contaminated blood products or fluids.

II. Safe injection practices and procedures designed to prevent disease transmission from patient to patient and healthcare worker to patient.

- A. Unsafe injection practices have resulted in one or more of the following:
1. Transmission of bloodborne viruses, including hepatitis B and C viruses to patients;
 2. Notification of thousands of patients of possible exposure to bloodborne pathogens and recommendation that they be tested for hepatitis C virus, hepatitis B virus, and human immunodeficiency virus (HIV);
 3. Referral of providers to licensing boards for disciplinary action; and
 4. Malpractice suits filed by patients.
- B. Pathogens including HCV, HBV, and human immunodeficiency virus (HIV) can be present in sufficient quantities to produce infection in the absence of visible blood.
1. Bacteria and other microbes can be present without clouding or other visible evidence of contamination.
 2. The absence of visible blood or signs of contamination in a used syringe, IV tubing, multi- or single-dose medication vial, or blood glucose monitoring device does NOT mean the item is free from potentially infectious agents.
 3. All used injection supplies and materials are potentially contaminated and should be discarded.
- C. Providers should:
1. Maintain aseptic technique throughout all aspects of injection preparation and administration:
 - a. Medications should be drawn up in a designated "clean" medication area that is not adjacent to areas where potentially contaminated items are placed.

- b. Use a new sterile syringe and needle to draw up medications while preventing contact between the injection materials and the non-sterile environment.
 - c. Ensure proper hand hygiene before handling medications.
 - d. If a medication vial has already been opened, the rubber septum should be disinfected with alcohol prior to piercing it.
 - e. Never leave a needle or other device (e.g. “spikes”) inserted into a medication vial septum or IV bag/bottle for multiple uses. This provides a direct route for microorganisms to enter the vial and contaminate the fluid.
 - f. Medication vials should be discarded upon expiration or any time there are concerns regarding the sterility of the medication.
2. Never administer medications from the same syringe to more than one patient, even if the needle is changed.
3. Never use the same syringe or needle to administer IV medications to more than one patient, even if the medication is administered into the IV tubing, regardless of the distance from the IV insertion site.
 - a. All of the infusion components from the infusate to the patient's catheter are a single interconnected unit.
 - b. All of the components are directly or indirectly exposed to the patient's blood and cannot be used for another patient.
 - c. Syringes and needles that intersect through any port in the IV system also become contaminated and cannot be used for another patient or used to re-enter a non-patient specific multi-dose medication vial.

- d. Separation from the patient's IV by distance, gravity and/or positive infusion pressure does not ensure that small amounts of blood are not present in these items.
- 4. Never enter a vial with a syringe or needle that has been used for a patient if the same medication vial might be used for another patient.
- 5. Dedicate vials of medication to a single patient, whenever possible.
 - a. Medications packaged as single-use must never be used for more than one patient:
 - 1) Never combine leftover contents for later use;
 - b. Medications packaged as multi-use should be assigned to a single patient whenever possible;
 - 1) Never use bags or bottles of intravenous solution as a common source of supply for more than one patient.
- 6. Never use peripheral capillary blood monitoring devices packaged as single-patient use on more than one patient:
 - a. Restrict use of peripheral capillary blood sampling devices to individual patients.
 - b. Never reuse lancets. Consider selecting single-use lancets that permanently retract upon puncture.

III. Safe injection practices and procedures designed to prevent disease transmission from patient to healthcare worker.

- A. Refer to OSHA guidelines, available at http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10051

IV. Evaluation/Surveillance of exposure incidents

- A. Identification of who is at risk for exposure,
- B. Identification of what devices cause exposure,
 - 1. ALL sharp devices can cause injury and disease transmission

if not used and disposed properly.

- a) Devices with higher disease transmission risk (hollow bore),
and
- b) Devices with higher injury rates (“butterfly”-type IV
catheters, devices with recoil action)
- c) Blood glucose monitoring devices (lancet platforms/pens).

C. Identification of areas/settings where exposures occur, and

D. Circumstances by which exposures occur.

E. Post exposure management- See Element VI.

V. **Engineering controls**

A. Use safer devices whenever possible to prevent sharps injuries

- 1. Evaluate and select safer devices
- 2. Passive vs. active safety features
- 3. Mechanisms that provide continuous protection immediately
- 4. Integrated safety equipment vs. accessory devices
 - a. Properly educate and train all staff on safer devices,
 - b. Consider eliminating traditional or non-safety alternatives
whenever possible
 - c. Explore engineering controls available for specific
areas/settings

B. Use puncture-resistant containers for the disposal and transport of
needles and other sharp objects

- 1. Refer to published guidelines for the selection, evaluation and
use (e.g., placement) of sharps disposal containers
 - a. National Institute for Occupational Safety and Health
(NIOSH) guidelines – available at
<http://www.cdc.gov/niosh/topics/bbp/#prevent>
 - b. NYSDOH recommendations “Household Sharps-Dispose
of Them Safely”, available at
<http://www.health.state.ny.us/publications/0909.pdf>

C. Use splatter shields on medical equipment associated with risk prone

procedures (e.g., locking centrifuge lids).

VI. Work practice controls

A. General practices

1. Hand hygiene including the appropriate circumstances in which alcohol-based hand sanitizers and soap and water handwashing should be used (see Element II).
2. Proper procedures for cleaning of blood and body fluid spills:
 - a. Initial removal of bulk material followed by disinfection with an appropriate disinfectant.
3. Proper handling/disposal of blood and body fluids, including contaminated patient care items.
4. Proper selection, donning, doffing, and disposal of personal protective equipment (PPE) as trained [see Element IV].
5. Proper protection of work surfaces in direct proximity to patient procedure treatment area with appropriate barriers to prevent instruments from becoming contaminated with bloodborne pathogens.
6. Preventing percutaneous exposures:
 - a. Avoid unnecessary use of needles and other sharp objects.
 - b. Use care in the handling and disposing of needles and other sharp objects,
 - 1) Avoid recapping unless absolutely medically necessary.
 - 2) When recapping, use only a one-hand technique or safety device.
 - 3) Pass sharp instruments by use of designated "safe

zones".

- 4) Disassemble sharp equipment by use of forceps or other devices.

B. Modify procedures to avoid injury:

1. Use forceps, suture holders, or other instruments for suturing,
2. Avoid holding tissue with fingers when suturing or cutting,
3. Avoid leaving exposed sharps of any kind on patient procedure/treatment work surfaces.
4. Appropriately use safety devices whenever available:
 - a. Always activate safety features.
 - b. Never circumvent safety features.

ELEMENT IV
**SELECTION AND USE OF BARRIERS AND/OR PERSONAL PROTECTIVE
EQUIPMENT FOR PREVENTING PATIENT AND HEALTHCARE WORKER
CONTACT WITH POTENTIALLY INFECTIOUS MATERIAL**

LEARNING OBJECTIVES

Upon completion of course work or training on this element, the learner will be able to:

- Describe the circumstances that require the use of barriers and personal protective equipment to prevent patient or healthcare worker contact with potentially infectious material; and
- Identify specific barriers or personal protective equipment for patient and healthcare worker protection from exposure to potentially infectious material.

DEFINITIONS

Personal protective equipment (PPE): Specialized clothing or equipment worn by an employee for protection against a hazard.

Barriers: Equipment such as gloves, gowns, aprons, masks, or protective eyewear, which when worn, can reduce the risk of exposure of the health care worker's skin or mucous membranes to potentially infective materials.

CONTENT OUTLINE

I. Types of PPE/barriers and criteria for selection

A. Gloves

1. Types (sterile, non-sterile, utility)
2. Material (e.g., natural rubber latex, vinyl, nitrile)

B. Cover garb (e.g.,)

1. Types (gowns, aprons, laboratory coats)
2. Characteristics (fluid impervious, fluid resistant, permeable)

C. Masks

1. Types (surgical, procedure, particulate respirators)

D. Face shields

E. Eye protection (goggles, safety glasses)

II. Choosing PPE based on reasonably anticipated interaction

A. Potential contact with blood or other potentially infectious material via:

1. Splashes
2. Respiratory droplets
3. Airborne pathogens

B. Volume of fluid expected (minimal, large volumes)

III. Choosing barriers/PPE based on intended need

A. Patient safety

1. Sterile barriers for invasive procedures
2. Masks for the prevention of droplet contamination

B. Employee safety

1. Barriers for prevention of contamination
2. Masks for prevention of exposure to communicable disease

IV. Guidance on proper utilization of PPE/barriers

A. Proper fit (including fit-testing for particulate respirators)

B. Integrity of barrier

C. Disposable versus reusable

D. Potential for cross-contamination if not changed/properly reprocessed between patients

E. Implications of over/under utilization

F. Supply availability and accessibility

G. Appropriate user education

1. Selection, donning, doffing, and disposal

ELEMENT V

CREATION AND MAINTENANCE OF A SAFE ENVIRONMENT FOR PATIENT CARE IN ALL HEALTHCARE SETTINGS THROUGH APPLICATION OF INFECTION CONTROL PRINCIPLES AND PRACTICES FOR CLEANING, DISINFECTION, AND STERILIZATION

LEARNING OBJECTIVES

At the conclusion of course work or training on this element, the learner will be able to:

- Define cleaning, disinfection, and sterilization;
- Differentiate between non critical, semi critical, and critical medical devices;
- Describe the three levels of disinfection;
- Recognize the importance of the correct application of reprocessing methods for assuring the safety and integrity of patient care equipment in preventing transmission of bloodborne pathogens;
- Recognize the professional's responsibility for maintaining a safe patient care environment in all healthcare settings; and
- Recognize strategies for, and importance of, effective and appropriate pre-cleaning, chemical disinfection, and sterilization of instruments and medical devices aimed at preventing transmission of bloodborne pathogens.

DEFINITIONS

Contamination: The presence of microorganisms on an item or surface.

Cleaning: The process of removing all foreign material (i.e., dirt, body fluids, lubricants) from objects by using water and detergents or soaps and washing or scrubbing the object

Critical device: An item that enters sterile tissue or the vascular system. These must be sterile prior to contact with tissue.

Decontamination: The use of physical or chemical means to remove, inactivate, or destroy bloodborne pathogens on a surface or item to the point where they are no longer capable of transmitting infectious particles.

Disinfection: The use of a chemical procedure that eliminates virtually all recognized pathogenic microorganisms but not necessarily all microbial forms (e.g., bacterial endospores) on inanimate objects.

High level disinfection: Disinfection that kills all organisms, except high levels of bacterial spores, and is effected with a chemical germicide cleared for marketing as a sterilant by the U.S. Food and Drug Administration (FDA).

Intermediate level disinfection: Disinfection that kills mycobacteria, most viruses, and bacteria with a chemical germicide registered as a "tuberculocide" by the U.S. Environmental Protection Agency (EPA).

Low level disinfection: Disinfection that kills some viruses and bacteria with a chemical germicide registered as a hospital disinfectant by the EPA.

Non critical device: An item that contacts intact skin but not mucous membranes. It requires low level disinfection.

Semi critical device: An item that comes in contact with mucous membranes or non intact skin and minimally requires high level disinfection.

Sterilization: The use of a physical or chemical procedure to destroy all microbial life, including highly resistant bacterial endospores.

CONTENT OUTLINE

I. Universal principles

- A. Instruments, medical devices and equipment should be managed and reprocessed according to recommended/appropriate methods regardless of a patient's diagnosis except for cases of suspected prion disease.
 - 1. Special procedures are required for handling brain, spinal, or nerve tissue from patients with known or suspected prion disease (e.g., Creutzfeldt-Jakob disease [CJD]). Consultation with infection control experts prior to performing procedures on such patients is warranted.
- B. Industry guidelines as well as equipment and chemical manufacturer recommendations should be used to develop and update reprocessing policies and procedures.
- C. Written instructions should be available for each instrument, medical device, and equipment reprocessed.

II. Potential for contamination is dependent upon

- A. Type of instrument, medical device, equipment, or environmental surface
 - 1. Potential for external contamination (e.g., presence of hinges, crevices).
 - 2. Potential for internal contamination (e.g., presence of lumens).
 - 3. Physical composition, design, or configuration of the instrument, medical device, equipment, or environmental surface.
- B. Frequency of hand contact with instrument medical device, equipment, or environmental surface.
- C. Potential for contamination with body substances or environmental sources of microorganisms.
- D. Level of contamination.
 - 1. Types of microorganisms
 - 2. Number of microorganisms
 - 3. Potential for cross-contamination

III. Steps of Reprocessing

A. Pre-cleaning

1. Removes soil, debris, lubricants from internal and external surfaces
2. To be done as soon as possible after use

B. Cleaning

1. Manual (e.g., scrubbing with brushes)
2. Mechanical (e.g., automated washers)
3. Appropriate use and reprocessing of cleaning equipment (e. g., do not reuse disposable cleaning equipment)
4. Frequency of solution changes

C. Disinfection- requires sufficient contact time with chemical solution

D. Sterilization- requires sufficient exposure time to heat, chemicals, or gases

IV. Choice/Level of reprocessing sequence

A. Based on intended use (see Definitions):

1. Critical instruments and medical devices require sterilization.
2. Semi critical instruments and medical devices minimally require high level disinfection.
3. Noncritical instruments and medical devices minimally require cleaning and low level disinfection.

B. Based on manufacturer's recommendations

1. Compatibility among equipment components, materials, and chemicals used
2. Equipment heat and pressure tolerance
3. Time and temperature requirements for reprocessing

V. Effectiveness of reprocessing instruments, medical devices and equipment

A. Cleaning prior to disinfection

B. Disinfection

1. Selection and use of disinfectants
 - a. Surface products
 - b. Immersion products
2. Presence of organic matter

3. Presence of biofilms
4. Monitoring
 - a. Activity and stability of disinfectant
 - b. Contact time with internal and external components
 - c. Record keeping/tracking of instrument usage and reprocessing
5. Post-disinfection handling and storage

C. Sterilization

1. Selection and use of methods
2. Monitoring
 - a. Biologic monitors
 - b. Process monitors (tape, indicator strips, etc.)
 - c. Physical monitors (pressure, temperature gauges)
 - d. Record keeping and recall/ tracking system for each sterilization processing batch/item
2. Post-sterilization handling, packaging and storage (event-related criteria)

VI. Recognizing potential sources of cross-contamination in the healthcare environment

- A. Surfaces or equipment which require cleaning between patient procedures/treatments
- B. Practices that contribute to hand contamination and the potential for cross-contamination
- C. Consequences of reuse of single-use/disposable instruments, medical devices or equipment

VII. Factors that have contributed to contamination in reported cases of disease transmission

- A. At any point in reprocessing or handling, breaks in infection control practices can compromise the integrity of instruments, medical devices or equipment.
- B. Specific factors
 1. Failure to reprocess or dispose of items between patients
 2. Inadequate cleaning
 3. Inadequate disinfection or sterilization
 4. Contamination of disinfectant or rinse solutions

5. Improper packaging, storage and handling
6. Inadequate/inaccurate record keeping of reprocessing requirements

VIII. Expectations of health professionals with respect to differing levels of disinfection and sterilization methods and agents based on the area of professional practice setting and scope of responsibilities

- A. Professionals who practice in settings where handling, cleaning, and reprocessing equipment, instruments or medical devices is performed elsewhere (e.g., in a dedicated Sterile Processing Department):
 1. Understand core concepts and principles
 - a. Standard and Universal Precautions (e.g., wearing of personal protective equipment)
 - b. Cleaning, disinfection, and sterilization described in Sections III and IV above
 - c. Appropriate application of safe practices for handling instruments, medical devices and equipment in the area of professional practice.
 - d. Designation and physical separation of patient care areas from cleaning and reprocessing areas is strongly recommended by NYSDOH
 2. Verify with those responsible for reprocessing what steps are necessary prior to submission
 - a. Pre-cleaning
 - b. Soaking
- B. Professionals who have primary or supervisory responsibilities for equipment , instruments or medical device reprocessing (e.g., Sterile Processing Department staff or clinics and physician practices where medical equipment is reprocessed on-site):
 1. Understand core concepts and principles
 - a. Standard and Universal Precautions
 - b. Cleaning, disinfection, and sterilization described in Sections III and IV above
 - c. Appropriate application of safe practices for handling

instruments, medical devices, and equipment in the area of professional practice

- d. Designation and physical separation of patient care areas from cleaning and reprocessing areas is strongly recommended by NYSDOH

2. Determine appropriate reprocessing practices taking into consideration:

a. Selection of appropriate methods

i. Antimicrobial efficacy

ii. Time constraints and requirements for various methods

iii. Compatibility among equipment/materials

1. Corrosiveness

2. Penetrability

3. Leaching

4. Disintegration

5. Heat tolerance

6. Moisture sensitivity

iv. Toxicity

1. Occupational health risks

2. Environmental hazards

3. Abatement methods

4. Monitoring exposures

5. Potential for patient toxicity/allergy

v. Residual effect

1. Antibacterial residual

2. Patient toxicity/allergy.

vi. Ease of use

1. Need for specialized equipment

2. Special training requirements

vii. Stability

1. Concentration

2. Potency
 3. Efficacy of use
 4. Effect of organic material
- viii. Odor
- ix. Cost
- x. Monitoring
1. Frequency
 2. FDA regulations for reprocessing single use devices (refer to the FDA web site at:
<http://www.fda.gov/cdrh/reprocessing/>

ELEMENT VI

PREVENTION AND CONTROL OF INFECTIOUS AND COMMUNICABLE DISEASES IN HEALTHCARE WORKERS

LEARNING OBJECTIVES

At the conclusion of course work or training on this element, the learner will be able to:

- Recognize the role of occupational health strategies in protecting healthcare workers and patients;
- Recognize non-specific disease findings that should prompt evaluation of healthcare workers;
- Identify occupational health strategies for preventing transmission of bloodborne pathogens and other communicable diseases in healthcare workers; and
- Identify resources for evaluation of healthcare workers infected with HIV, HBV, and/or HCV.

DEFINITIONS

Infectious disease: A clinically manifest disease of humans or animals resulting from an infection.

Communicable disease: An illness due to a specific infectious agent or its toxic products that arises through transmission of that agent from an infected person, animal, or inanimate source to a susceptible host.

Occupational health strategies: As applied to infection control, a set of activities intended to assess, prevent, and control infections and communicable diseases in healthcare workers.

CONTENT OUTLINE

- I. Pre-placement and periodic health assessments**
 - A. Immunization/screening programs (e.g., measles, mumps, rubella, varicella, hepatitis B, influenza, pertussis, any other recommended or mandated requirements)
 - B. Tuberculosis screening

1. Symptoms evaluation
2. Tuberculin skin testing as required by regulation
- C. Screening for other communicable diseases
 1. Health assessments (history and physicals)
- D. Symptoms requiring immediate evaluation by a licensed medical professional and possible restriction from patient care activities
 1. Fever
 2. Cough
 3. Rash
 4. Vesicular lesions
 5. Draining wounds
 6. Vomiting
 7. Diarrhea

II. Management strategies for potentially communicable conditions

- A. Appropriate evaluation and treatment
- B. Limiting contact with susceptibles
- C. Furlough until noninfectious

III. Specific occupational health strategies for prevention and control of bloodborne pathogen transmission

- A. Healthcare worker exposure risk education
 1. Potential agents (HBV, HCV, HIV)
 2. Prevention strategies
 - a. HBV vaccination (including safety, efficacy, components, and recommendations for use)
 - b. Hand hygiene
 - c. Appropriate PPE and barrier precautions
 - d. Sharps safety
 - e. Standard and Universal Precautions

IV. Post-exposure evaluation and management

- A. Bloodborne pathogens
 1. Prompt evaluation by licensed medical professional

2. Risk assessment in occupational exposures
3. Recommendations for approaching source patient and healthcare worker evaluations
4. Recommendations for post-exposure prophylaxis emphasizing the most current NYSDOH and CDC guidelines
5. Post-exposure management of patients or other healthcare workers when exposure source is a healthcare worker
 - a. Professional obligation to inform patients exposed to a healthcare worker's blood or other potentially infectious material

B. Airborne or droplet pathogen

1. Tuberculosis
 - a. Recommendations for post-exposure prophylaxis emphasizing the most current New York State guidelines for post-exposure prophylaxis
2. Varicella, Measles, Mumps, Rubella, Pertussis
 - a. Consult the most current Federal, State, or local requirements for post-exposure evaluation and management

C. Notification of healthcare workers/public

V. Evaluation of healthcare workers infected with HIV, HBV and/or HCV or other bloodborne pathogens

- A. Review New York State Department of Health Policy on HIV testing of healthcare workers
- B. Criteria for evaluating infected health care worker's for risk of transmission
 1. Nature and scope of professional practice
 2. Techniques used in performance of procedures that may pose a transmission risk to patients
 3. Assessed compliance with infection control standards
 4. Presence of weeping dermatitis, draining or open skin wounds
 5. Overall health

- a. Physical health
 - b. Cognitive status
- C. Expert panels for evaluation of healthcare workers infected with bloodborne pathogens