

Infection Control Training Syllabus- 2018

New York State Department of Health and
State Education Department

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Background

In August 1992, Chapter 786 of the Laws of 1992 established a requirement that certain healthcare professionals licensed in New York State receive training on infection control and barrier precautions by July 1994 and every four years thereafter unless otherwise exempted.

The statute applies to the following professionals:

- Dental hygienists
- Dentists
- Licensed practical nurses
- Optometrists
- Physicians
- Physician assistants
- Podiatrists
- Registered professional nurses
- Specialist assistants
- *Medical students
- *Medical residents
- *Physician assistant students

(* These categories were added pursuant to legislation enacted in November 2008.)

Goal of Infection Control Training as Mandated by Chapter 786

The goal of the infection control training requirement is to:

- Assure that licensed, registered, or certified health professionals understand how bloodborne pathogens may be transmitted in the work environment: patient to healthcare worker, healthcare worker to patient, and patient to patient;
- Apply current scientifically accepted infection prevention and control principles as appropriate for the specific work environment;
- Minimize opportunity for transmission of pathogens to patients and healthcare workers; and
- Familiarize professionals with the law requiring this training and the professional misconduct charges that may be applicable for not complying with the law.

Training Requirement: Minimum Core Elements

In defining the scope of this training, the Departments consulted with health professionals in professional societies, academia, and healthcare organizations representative of the professions and the settings affected by this mandate. The resulting syllabus consists of seven core elements which are intended to provide an outline of the concepts, principles, and practices which should, at a minimum, be covered in each section.

It is expected that the course work will be tailored to meet the specific needs of the professional audience and will be relevant to the most current and scientifically accepted practices in infection control. Each core element must be covered to meet the training requirement. The outline provides a **general** direction for the intended scope of each element. Course providers may modify the outline based on audience need.

Comparison to Required Training as Part of the Occupational Safety and Health Administration (OSHA) Bloodborne Pathogen Standard

The New York State law requires training to control transmission of disease from healthcare worker to patient, patient to healthcare worker, and patient-to-patient. OSHA requirements do not meet the New York State law for mandatory training since their focus is limited to preventing occupational exposure. It is believed that the employers who offer the infection control training designed by this syllabus can easily incorporate OSHA training mandates as part of the bloodborne pathogens program.

Time Requirements/Formats

Although there is no set time requirement, general experience has shown that the initial course program may be designed to last between 2-4 hours while the updated course work required every four (4) years often takes less time. Course work can be done in a single session or in divided time slots to meet the Course providers' needs.

The format for the delivery of this program is also not specified, allowing the Course Providers freedom in reaching their audience. However, if distance-learning methods are used, the Course Provider must be able to provide participants with direct answers to questions they may have because of the program offering.

Course Provider Approval

Organizations interested in seeking provider approval for infection control course work or training must seek application from the appropriate department.

- Organizations or individuals who will primarily train physicians, registered physicians assistants, or specialists' assistants, healthcare facilities regulated by the Department of Health (DOH), or organizations whose membership consists of DOH-regulated facilities, and who offer educational services to these facilities must apply to the DOH using the on line application form available at <https://commerce.health.state.ny.us/hpn/ctrldocs/infectctrl/>. **(Note: Applicants must have a valid New York State Health Commerce System (HCS) account to access this application. To apply for an HCS account, please visit this website: <https://commerce.health.state.ny.us/hcs/index.html>)**
- **State Education Department** Course Provider Forms are available by calling 518- 474-3817, ext. 360 or by e-mail request to oppleuic@mail.nysed.gov. Web: www.nysed.gov.
- For all Article 28 health care facilities seeking providership, the *recommendation* for the qualifications of the Course Provider are:
 - Current experience in infection control, and/or
 - Certification as an infection control practitioner (e.g., certification by the Certification Board of Infection Control and Epidemiology, Inc. [CIC[®]]).
- For any non-Article 28 applicants seeking providership with the DOH, the following *requirement* must be met:
 - Current certification as an infection control practitioner (e.g., CIC[®]), or
 - Active in infection control practice within an institution for a minimum of 2 years, or
 - Active infectious disease physician.
- Organizations that will primarily train dental hygienists, dentists, licensed practical and registered professional nurses, optometrists, and podiatrists must apply to the State Education Department (SED).
- Colleges and universities authorized to offer educational programs in the professions affected by this legislation, healthcare facilities outside New York State or those not regulated by the DOH, and organizations or government entities that educate professionals in healthcare issues should apply to SED.

Courses approved by one Department will be recognized as courses approved by the other through a reciprocity agreement established between the Departments.

Documentation Requirements for Providers

NYS-approved Course Providers must document completion of training as prescribed. This shall include the provision, within 21 days, of a certificate of completion to each person who completes the course work or training. Such forms should contain, at a minimum:

- Name of the participant
- Date of course completion
- NYS-approved Course Provider name and identification number
- Signature of the NYS-approved Course Provider

An example of a certificate of completion is included in this syllabus. Course providers are free to duplicate this certificate.

Maintenance of Records

Course Providers must maintain a record of persons who completed the course for a minimum of six years. This record may be stored on computer or hard copy, at the discretion of the provider.

Instructions on Documentation for Course Participants

Each Course Provider must instruct participants in how training will be documented. This information will vary according to the professional discipline and any arrangements made by provider organizations to furnish information to healthcare organizations or the Department of Health. **All participants should be instructed to retain their certification of completion.**

In addition:

- **Physicians, registered physician assistants, and specialist assistants** hired by or granted professional privileges at a hospital or healthcare facility must document to that organization the completion of the approved course work at the time of hiring or when professional privileges are granted or renewed.
- **Physicians, registered physician assistants, and specialist assistants** not affiliated with a healthcare facility must provide evidence of course completion to the Department of Health. Each Course Provider should give a copy of the certificate of completion to any health professional in this category at the time the training is offered. A copy of this certificate, which can be duplicated, will be provided at the time of the Course Provider approval.
- **Dental hygienists, dentists, licensed practical nurses, optometrists, podiatrists, and registered professional nurses** must attest to completion of training to the SED at the time of license renewal by providing the name and identification number of the Course Provider and the date of training on the renewal application form. Persons in these professions are not to submit copies of their certificate of completion.
- **Any dentist or podiatrist** hired by or granted professional privileges at a hospital or healthcare facility must document to that organization the completion of approved course work at the time of hiring or when professional privileges are granted or renewed.

Exemptions or Equivalency Approvals

New York State Education Department may exempt **dentists, dental hygienists, licensed practical nurses, optometrists, podiatrists and registered nurses** from completing the course work or training required upon receipt of the following:

- A written application for such exemption establishing there is no need to complete the course work or training because the nature of the applicant's practice does not require the use of infection control techniques or barrier precautions; or
- Documentation satisfactory to the department that the applicant/licensee has completed course work or training equivalent to that approved by the department.

Professionals in the categories listed above not currently practicing in New York State but holding active New York State licenses DO NOT need to complete the infection control course work at this time. Upon resuming practice in New York State, they have 90 days to complete the training.

To obtain an exemption form from the **New York State Education Department**, request a copy of Form 1C by contacting the Forms Management Unit by phone at 518-474-3817 ext. 320 or email opforms@mail.nysed.gov , or by logging onto www.op.nysed.gov.

New York State Department of Health may exempt **physicians, physician assistants and specialist assistants** from taking the required course work based upon the following:

- Completion of the online exemption application indicating the criteria upon which the applicant is requesting an **exemption**. The criteria for exemptions are:
 - Retired and no longer in active practice; or
 - Interruption of active practice; or
 - Not practicing in New York State; or
 - Do not provide direct patient care, or the nature of the practice does not require application of infection control principles and practices (e.g., counseling, education) **and** do not directly supervise or oversee individuals or programs where others are responsible for providing patient care or reprocessing patient care equipment; or
 - Other practice category. This requires full written explanation on the electronic exemption form.

- Completion of the online exemption application indicating the criteria upon which the applicant is requesting an **equivalency exemption through training**. The criteria for equivalency exemptions are:
 - Completion of a fellowship in infectious disease; or
 - Two years' experience as a hospital epidemiologist; or
 - Current board certification in infection control; or
 - Infection control practitioner qualified by training and/or experience.

The New York State Department of Health on line exemption application is available at http://www.health.state.ny.us/professionals/diseases/reporting/communicable/infection/hcp_training.htm#how

ELEMENT I

HEALTHCARE PROFESSIONALS HAVE THE RESPONSIBILITY TO ADHERE TO SCIENTIFICALLY ACCEPTED PRINCIPLES AND PRACTICES OF INFECTION CONTROL IN ALL HEALTHCARE SETTINGS AND TO OVERSEE AND MONITOR THOSE MEDICAL AND ANCILLARY PERSONNEL 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 medical and ancillary personnel for whom he or she is responsible and intervene as necessary to assure compliance and safety.

CONTENT OUTLINE

- I. Sources 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 and overseeing the practice of others who

are their responsibility;

C. Consequences of failing to follow accepted standards of infection prevention and control.

1. Increased risk of adverse health outcomes for patients and healthcare workers;

2. Healthcare professionals may be 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 are spread in healthcare settings;
- Identify the factors which influence the outcome of an exposure to pathogenic organisms in healthcare settings;
- 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 agent 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 or cause disease. Healthcare workers may be a reservoir for a number of nosocomial organisms spread in healthcare settings.

Standard precautions: A group of infection prevention and control measures 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 a means of

transmission of an infectious agent from a reservoir to one or more susceptible hosts 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, flow of urine, 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, fomites;
 - b. Contamination of equipment.

II. Methods to prevent the spread of pathogenic organisms in healthcare settings.

- 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, needles, syringes, 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 sterile needle and new sterile 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. Proper infection control technique requires that healthcare providers must:

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 (i.e. hand sanitizing or hand washing if hands are visibly soiled) 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. Use single-use lancets that permanently retract upon puncture whenever possible.

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.
 - 5) Discard used sharps into a puncture-resistant sharps container immediately after use.

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:

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 (i.e., low, intermediate, and high);
- 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 (e.g. intravenous catheters, needles for injections). 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 (e.g., blood pressure cuffs, oximeters). 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 (e.g., oral thermometers, vaginal specula).

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 Precaution,
- 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, annual influenza, 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 and return to work clearance:

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 workers 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.

ELEMENT VII

SEPSIS AWARENESS AND EDUCATION

LEARNING OBJECTIVES

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

- Describe the scope of the sepsis problem and the NYS Sepsis Improvement Initiative
- Describe persons at increased risk of developing sepsis
- Identify common sources of infection that may lead to sepsis
- Describe early signs and symptoms that may be associated with sepsis in adults and children and infants
- Understand the need for immediate medical evaluation and management if sepsis is suspected
- Educate patients and families on methods for preventing infections and illnesses that can lead to sepsis and on identifying the signs and symptoms of severe infections and when to seek medical care

DEFINITIONS

Sepsis is a life-threatening condition caused by a host's extreme response to infection. The Surviving Sepsis Campaign 2016 International Guidelines define sepsis as life-threatening organ dysfunction caused by a dysregulated host response to infection. Earlier definitions defined sepsis as an inflammatory response to infection, while sepsis associated with organ dysfunction was identified as severe sepsis. Septic shock is a subset of sepsis that manifests with circulatory and cellular/metabolic dysfunction; it is associated with a higher mortality risk.

CONTENT OUTLINE

I. Sepsis - Scope of the Problem

- a. Sepsis is a life-threatening medical emergency that requires early recognition and intervention.
- b. Most sepsis cases are community-acquired.
- c. Seven in 10 patients with sepsis had recently used healthcare services or had chronic conditions requiring frequent medical care.

d. Sepsis prevalence and mortality in the United States and New York State

II. New York State Sepsis Care Improvement Initiative and “Rory’s Regulations” (as it applies to healthcare professionals)

a. Purpose

- i. To increase early recognition of suspected sepsis by all healthcare professionals by requiring such individuals to complete course work or training on sepsis;
- ii. Stress the importance of timely initiation of evidence-based protocols to improve sepsis outcomes.

b. New York State regulations at 10 NYCRR §§ 405.2 and 405.4 require hospitals to, among other things:

- i. Adopt evidence-based protocols to ensure early diagnosis and treatment of sepsis; and
- ii. Ensure hospital staff are trained to implement such sepsis protocols.

III. Causes of Sepsis

a. Development of sepsis following infection

- i. Bacterial infections commonly trigger sepsis, although other microbial infections (e.g. fungal or viral) can also trigger sepsis
- ii. Populations at increased risk of developing sepsis include:
 1. The very young (under 1 year), and individuals 65 years of age and older;
 2. People with chronic conditions such as diabetes, lung disease, kidney disease, or cancer; and
 3. People with impaired immune systems.
- iii. Sepsis most commonly results from infection in the lungs, urinary tract, skin, and/or gastrointestinal tract

IV. Early Recognition of Sepsis

- a. Manifestations of sepsis vary based on the type of infection and host factors.
- b. Some people may have subtle sepsis presentations.
- c. Signs and symptoms that may be associated with sepsis in persons with confirmed or suspected infection can include:
 - i. Altered mental state, shortness of breath, fever, clammy or sweaty skin, extreme pain or discomfort, high heart rate
 - ii. Signs and symptoms in children and the elderly

- iii. Severe forms of sepsis including septic shock
- b. If a person presents with suspected or confirmed infection, healthcare professionals should assess for signs of, and risk factors for sepsis.

V. Principles of Sepsis Treatment

- a. Prompt diagnosis and treatment are critical for optimal outcomes; there is increased morbidity and mortality with delayed recognition and response.
- b. Recommended diagnostic modalities include blood cultures and other tests to identify source and site of infection and organ dysfunction.
- c. Recommended treatment of sepsis includes administration of appropriate intravenous (IV) antimicrobial therapy, with source identification and de-escalation of antibiotics as soon as feasible.

VI. Patient Education and Prevention

- a. Preventing infection: hand hygiene, wound care, and vaccination
- b. Risk factors (high-risk patients)
- c. Warning signs and symptoms of sepsis
- d. Seeking immediate care for worsening infection and signs and symptoms of sepsis
- e. Giving relevant history and information to clinicians

Appendix A: Selected Infection Control Laws and Regulations

Public Health Law

§ 230-a. Infection control standards

Visit: <http://public.leginfo.state.ny.us/lawssrch.cgi?NVLWO>: and search term “230-a”

§ 230-d. Office-based surgery

Visit: <http://public.leginfo.state.ny.us/lawssrch.cgi?NVLWO>: and search term “230-d”

§ 239. Course work or training in infection control practices

Visit: <http://public.leginfo.state.ny.us/lawssrch.cgi?NVLWO>: and search term “239”

§ 239-a. Infection control guidelines

Visit: <http://public.leginfo.state.ny.us/lawssrch.cgi?NVLWO>: and search term “239-a”

§ 2760. Advisory panel established

Visit: <http://public.leginfo.state.ny.us/lawssrch.cgi?NVLWO>: and search term “2760”

§ 2761. Function, powers and duties

Visit: <http://public.leginfo.state.ny.us/lawssrch.cgi?NVLWO>: and search term “2761”

Education Law

§ 6505-b. Course work or training in infection control practices

Visit: <http://public.leginfo.state.ny.us/lawssrch.cgi?NVLWO>: and search term “6505-b”

§ 6509. Definitions of professional misconduct

Visit: <http://public.leginfo.state.ny.us/lawssrch.cgi?NVLWO>: and search term “6509”

§ 6530. Definitions of professional misconduct

Visit: <http://public.leginfo.state.ny.us/lawssrch.cgi?NVLWO>: and search term “6509”

Health Regulations (10 NYCRR)

Part 92 Infection Control Requirements

Visit: https://www.health.ny.gov/regulations/nycrr/title_10/ and search Title 10 term “92”

Education Regulations (8 NYCRR)

Part 58 Approval of Course Work or Training in Infection Control Practices and
Barrier Precautions

Visit:

[https://govt.westlaw.com/nycrr/Browse/Home/NewYork/NewYorkCodesRulesandRegulations?guid=If1953a30ab3811dd9e3f9b6a3be71c54&originationContext=documenttoc&transitionType=Default&contextData=\(sc.Default\)](https://govt.westlaw.com/nycrr/Browse/Home/NewYork/NewYorkCodesRulesandRegulations?guid=If1953a30ab3811dd9e3f9b6a3be71c54&originationContext=documenttoc&transitionType=Default&contextData=(sc.Default))

Certification of Completion: Course
Work or Training in Infection Control
and Barrier Precautions
Approved by the New York State
Department of Health and the State
Education Department

This certifies that _____
(PARTICIPANT'S NAME)

has successfully completed an approved course in Infection Control and Barrier Precautions, as
mandated by Chapter 786 of the Laws of 1992, on _____
(DATE)

This program was presented by

(NYS-APPROVED COURSE PROVIDER'S NAME AND IDENTIFICATION NUMBER)
of _____
(ADDRESS, CITY, STATE)

Signature of NYS-approved Course Provider:

**This certificate is valid for a period of four (4) years from the above date of course
completion.**

Be sure to maintain this document in your professional file.