Infection Control Training Module

Revised: 6/02/2016
**Bloodborne Pathogen (BBP) Standard:**

- MI/OSHA BBP standard requires hospitals to protect healthcare workers (HCWs) from exposure to bloodborne pathogens while on the job.
- Assumes that any patient could have organisms that may be transmitted by contact with their blood and/or body fluids.
- The Exposure Control Plan is the policy that outlines the protection measures in place at most healthcare facilities.
Transmission of Bloodborne Pathogens:

- Important bloodborne pathogens (disease-causing organisms) that may be present in human blood could include:
  - Hepatitis B Virus (HBV)
  - Hepatitis C Virus (HCV)
  - Human Immunodeficiency Virus (HIV)

- These same bloodborne pathogens may also be found in other body fluids, including:
  - Semen
  - Vaginal fluids
  - Fluids around the brain, spine, heart, lungs, abdomen and joints
  - Bloody saliva

- Bloodborne pathogens are NOT found in tears, urine, stool, sweat or saliva unless these body fluids are visibly bloody.
Exposure to Bloodborne Pathogens:

- HCWs can become exposed to bloodborne pathogens by:
  - Puncturing of the skin with a contaminated needle or a contaminated sharp device, such as a lancet or scalpel
  - Blood or body fluids getting on skin that has cuts, cracks, rashes or burns
  - Being splashed or sprayed with blood or body fluids into the eyes, nose or mouth
Standard Precautions:

- Requires HCWs to treat *all* blood and body fluids (B/BF) as if they are infected with disease-causing organisms.

- Using Standard Precautions will prevent the spread of disease to yourself, co-workers, patients and visitors.

- **Personal Protective Equipment (PPE)** is a key part of Standard Precautions. PPE includes gloves, gowns, masks, protective eyewear, and face shields.

- PPE is provided by most hospitals, it is easily available in *all* work areas where it is needed. Know where to locate PPE in your department.
PPE - Gloves:

- Gloves keep infectious materials away from your hands during contact with patient’s blood, mucous membranes, rashes, broken skin or body fluids as well as when handling contaminated equipment, surfaces, linen or waste.

- Perform hand hygiene before donning and after removing and disposing gloves.

- **NEVER** wash gloved hands – **NEVER** reuse disposable gloves.

- Change gloves after each procedure when performing more than one procedure on the same patient.

- Remove gloves immediately after the task is done; dispose of gloves into a general waste container.

**NOTE:** Always wear gloves as outlined above. Standard exam gloves are latex-free.
PPE - Face Protection:

• Masks, eyewear and face shields protect your eyes, nose and mouth from splashes or splatters of blood and body fluids.

• Make sure to choose PPE that covers all three of these areas on your face.

• Examples of tasks when you should wear such PPE include:
  • Suctioning
  • Cleaning contaminated equipment
  • Handling waste
  • Plumbing repairs
  • Irrigating wounds
  • Endoscopy

• Place disposable PPE into general waste container after each use.
PPE - Gowns:

- Fluid-resistant gowns prevent blood and body fluids that splash or spray from soaking through your clothes to your skin.

- Some situations that require wearing a gown include:
  - Emergency department trauma cases
  - Central Services decontamination area
  - Any time blood or body fluid contamination to your clothes or skin is likely

- Disposable lab coats are another type of PPE used in the lab when light spattering of blood or body fluids might contaminate clothing.

- Dispose gowns after use in general waste container, **NOT** in medical waste biohazard container.
Blood and Body Fluid Spills:

• Small spills that can be contained by a paper towel will be cleaned and disinfected by the department. The small spill procedure is:
  • Put on PPE
  • Contain and absorb spill with paper towels
  • Dispose of the paper towels
  • Add approved disinfectant to the spill site
  • Dispose of used supplies in general waste container
  • Remove gloves and perform hand hygiene

• Large spills will be contained by the department with a barrier pad and then disinfected by Environmental Services.
What does the Hospital do to Protect YOU?

• Federal law and MI/OSHA requires that health care facilities actively evaluate and implement safer sharps devices.

• The Hospital Sharps committee is a multidisciplinary group that meets to:
  • Review employee injury data
  • Search for new, safer sharps devices
  • Coordinate trials and implementation of new safety devices
  • Develop safe work practices for work settings
  • Train HCWs about sharps safety
  • Monitor injury data after implementation of new devices
Common Causes of Sharps & Splash Exposure:

- Failure to activate safety device.
- Patient movement.
- Unnecessary manipulation of sharp device by hand.
- Improper disposal into sharps container.
- Mislaid sharp in the environment (i.e., bed, table, trash).
- Performing procedure too quickly.
- Not wearing appropriate PPE during procedures.
- Passing sharps to others.
- Not familiar with the device or procedure (Speak to your manager/supervisor before attempting to use device).
Bloodborne Pathogen Standard – Safe Sharps Disposal:

- Locate sharps container closest to point of use.
- After use, *immediately* activate safety feature, if appropriate, then dispose sharp into an approved puncture-resistant container.
- **NEVER** leave sharps for someone else to clean up.
- Observe container opening. If sharps are protruding, **DO NOT** put your hands near it.
- Replace sharps containers when they are $\frac{3}{4}$ full; **never** overfill sharps containers.
- Lock sharps containers *before* moving or replacing them.
Regulated Medical Waste:

- Regulated Medical Waste is waste that may contain disease causing organisms.

- Michigan law requires health care facilities to identify and separate Regulated from general waste.

- Regulated Medical Waste must be placed into closeable, leak-proof containers or bags that are color coded red and/or labeled with the biohazard symbol.
What is Regulated Medical Waste?

REGULATED MEDICAL WASTE includes:

- Tissue and other pathology lab waste
- Lab specimens
- Bulk blood and body fluids
- All sharps (use puncture-proof container)
- Blood and blood-product bags
- Dressings soaked with blood
- PPE soaked with blood

GENERAL WASTE includes:

- Urinary catheters
- Empty drainage containers
- Dressings stained with blood
- PPE stained with blood
- Diapers
- Sanitary napkins
- Soiled linen (place in soiled linen hamper)
Isolation:

• Good hand hygiene and Standard Precautions help prevent the spread of organisms in the hospital.

• Isolation Precautions are added when needed--there are four isolation Precaution categories:
  1 - AFB Isolation
  2 - Airborne Precautions
  3 - Contact Precautions
  4 - Droplet Precautions

• There are two additional precautionary measures:
  1 - Protective Environment
  2 - Respiratory/Cough Etiquette
AFB Isolation:

AFB is required for all patients with suspected or confirmed tuberculosis (TB). TB is spread by the airborne route.

ALL AFB cases require the following:

- A private, negative air pressure room where the air is exchanged 6-12 times per hour and exhausted to the outside of the hospital

- An “AFB Isolation Stop” sign is placed on the patient’s door; the patient’s door must remain closed at all times

- All healthcare workers must wear a N-95 particulate respirator (N95PR) to enter the room. **NOTE: This is a special mask that must be fitted to each health care worker**

- If the patient leaves the room for an exam, the patient must wear a surgical mask
AFB Isolation Sign:

AFB ISOLATION

STOP
CHECK WITH NURSE BEFORE ENTERING

NEGATIVE PRESSURE ROOM WITH DOOR CLOSED AT ALL TIMES
N-95 RESPIRATOR MUST BE WORN BY HEALTHCARE WORKERS
LIMIT PATIENT TRANSPORT
SURGICAL MASK ON:
- PATIENT BEFORE TRANSPORTATION
- VISITORS BEFORE ENTERING ROOM
HAND HYGIENE
MAINTAIN STANDARD PRECAUTIONS
Airborne Precautions:

- Airborne precautions prevent transmission of infectious agents that remain infectious over long distance when suspended in the air.

- It is important that the room is under negative pressure and the door is to be kept closed at all times.

- A surgical mask is to be worn by healthcare workers and visitors prior to room entry.

- Hand hygiene before and after patient contact.

- Examples of diseases that would require the patient to be placed in airborne precautions include:
  - Chickenpox
  - Disseminated herpes zoster (Shingles)
  - Measles (Rubeola)
Airborne Precautions Sign Example:

- Negative Pressure Room with door closed at all times.
- Surgical mask upon room entry and surgical mask on patient before transportation and visitors before entering room.
- Hand hygiene.
- Maintain standard precautions.
Contact Precautions:

- Contact Precautions is used to prevent transmission of infectious agents which are spread by direct or indirect contact with the patient or the patient's environment.

- A private room is required or a cohort procedure as directed by Epidemiology.

- Gowns and gloves are required when direct care will be provided. PPE must be discarded before exiting the room.

- Hand hygiene before and after patient contact.

- Examples for appropriate use of contact precautions:
  - Wound drainage that cannot be contained
  - Rotavirus
  - Scabies
  - Chickenpox (as well as airborne precautions)
Contact Precautions Sign Example:

CONTACT PRECAUTIONS

PRIVATE ROOM, KEEP DOOR OPEN.

GLOVES REQUIRED UPON ROOM ENTRY.

GOWN REQUIRED UPON ROOM ENTRY.

HAND HYGIENE.

OTHER INSTRUCTIONS AS INDICATED BY EPIDEMIOLOGY.

MAINTAIN STANDARD PRECAUTIONS
Droplet Precautions:

- Droplet precautions are used in the care of patients with suspected or confirmed infection with an agent transmitted primarily by the droplet route.
- A private room is required and or cohort measure.
- A surgical mask must be worn upon room entry.
- Hand hygiene before and after patient contact.
- Examples of appropriate use of droplet precautions:
  - Epiglottitis due to Haemophilus Type B
  - Influenza
  - Meningitis (Neisseria meningitides, Haemophilus influenzae Type B
  - Mumps
  - German Measles (Rubella)
Protective Environment:

- Protective environment is used in the care of patients undergoing an allogeneic hematopoietic stem cell transplant or an AML patient undergoing induction therapy.
- A private room is required with positive pressure air.
- Hand hygiene before and after patient contact.
- Patients should remain in their rooms for all but essential procedures.
- No potted plants, dried flowers or live flower arrangements should be in the room.
Respiratory Etiquette is for Everyone:

• To help prevent colds and flu in both patients and staff, please use tissues to contain secretions when coughing or sneezing and then throw the tissues in the trash.

• Perform hand hygiene after disposing of tissues.

• “Respiratory Etiquette” signs are posted in Emergency Departments and in clinic reception areas for patient information.

• Get your flu shot annually to protect your patients, your family and yourself.
In Addition To Isolation Signs, You May See A “NO Latex” Sign:

- Implement the following latex allergy precautions in patients identified as allergic or at risk of latex allergy:
  - Place an allergy band on the patient
  - Mark patient’s chart with “Latex Precautions”
  - Place a purple “No Latex” sign on the patient’s door
  - Use latex-free supplies on PAR Can be also obtained from Logistics.
What is TB?

• TB is a contagious disease caused by the bacteria *Mycobacterium tuberculosis*.
• TB primarily infects the lungs.

**Signs and symptoms of TB include:**

• Fever
• Weight loss
• Night sweats
• Fatigue, weakness
• Prolonged cough (cough > 3 weeks)
• Blood-tinged sputum

• TB is spread when infected people cough or sneeze the bacteria into the air and others inhale the bacteria.
Protecting Health Care Workers from TB:

MI/OSHA requires that all health care facilities have a TB Control Plan to protect health care workers from exposure to TB while on the job.

Proper AFB Isolation is a key part of the TB Control Plan. ALWAYS follow AFB Isolation.

Putting on the proper PPE and wearing it correctly is a very important part of the TB Control Plan.

- **NEVER** enter an AFB airborne infection isolation room if you have not been fit tested for the N-95 respirator

- **ALWAYS** fit-check your N-95 respirator *before* entering an AFB airborne infection isolation room
Exposures to (coming in contact with) Contagious Diseases or Infections that Occur Outside of Work May Affect Your Patients and Co-workers:

• Let your manager know if you acquire a contagious disease.

• Let your manager know if you have been exposed to a contagious disease.

• The following are some important contagious diseases you need to tell your manager about:
  • Chickenpox
  • Tuberculosis
  • Salmonella
  • Scabies
  • Strep throat

NOTE: Managers must allow immediate release of exposed employee(s) to OHS for follow-up.
Follow-up Management of Bloodborne Pathogen Exposures
When a Blood/Body Fluid Exposure Occurs:

- Clean the area with soap and water; flush eyes with water.
- Notify your supervisor immediately.
- Fill out an employee injury/illness report.
- Include the type and brand name of the device that caused your injury.
- **IMMEDIATELY** report to your designated site for care; managers **MUST** release employees to get immediate treatment.
- Treatment options will be discussed with you.
- Both the employee and the source patient will be tested for Hepatitis B, Hepatitis C and HIV, if indicated.
- Employee will be counseled about their risk of becoming infected with a bloodborne pathogen.
Consult your WSU-SOM HIPAA/Infection Control Certificate for the appropriate contact at each Training Site.
Hand Hygiene
Healthcare-Associated Infections
Are Preventable:

“Performing hand hygiene before and after contact with a patient is one of the most important measures for preventing the spread of bacteria in healthcare settings.”*

*U.S. Centers for Disease Control and Prevention (CDC)
Hand Hygiene – Is So Important That:

- The expectation is that HCWs cleanse their hands in front of the patient, so the patient can see that hand hygiene has been performed.
- Every HCW is empowered to *speak-up* and remind co-workers to cleanse hands appropriately.
- Patients and families are encouraged to *speak-up* and remind us to cleanse our hands.
- Hand hygiene is a Joint Commission National Patient Safety Goal.
**Hand Hygiene:**

- Healthcare workers’ hands frequently become contaminated during patient care activities.
- If hand hygiene is **NOT** performed, bacteria can be transferred from the hands of the HCW to the next patient.

*Culture plate showing growth of many bacteria 24 hours after a healthcare worker placed their hand on the plate.*
Hand Hygiene:

- Healthcare workers’ hands can also become contaminated by contact with the patient care environment.
- Hand hygiene should also be performed after touching surfaces in the room that are close to the patient.

In this study, each X shows where bacteria were cultured in a room that had been occupied by a patient with an infection.
Hand Hygiene:

Every year 5 to 10 percent of hospital patients develop infections resulting in 98,000 deaths nationally.

98,000 deaths equal:

- More deaths than those caused by breast cancer, colon cancer, and stroke combined.
- Equivalent to a 747 plane crash killing all passengers and the crew every other day.
- One death every 6 minutes.
HCWs Should Perform Hand Hygiene:

- Before and after direct contact with patients
- Before donning and after removing gloves
- Before handling an invasive device used for patient care
- After contact with blood, body fluids or excretions, non intact skin mucous membranes, or wound dressings
- After contact with contaminated items such as medical equipment, medical waste and soiled linen
- After contact with objects in the immediate vicinity of the patient (i.e., bedside trays, bedrails, phone, call lights, etc.)
HCWs Should Perform Hand Hygiene:

- After sneezing, coughing, or disposing of tissues
- Before and after handling medication
- Before and after preparing or eating food
- Before and after using the restroom
- Before and after applying makeup or inserting contact lenses
Hand Hygiene – Using Alcohol-Based Hand Sanitizer:

Waterless alcohol hand rubs have been shown to:

• Be effective in reducing bacteria on hands
• Require less time to use
• Reduce hand irritation and dryness with repeated use

• **NOTE:** Before container disposal, remove container from holder and shake to assure it is empty. If container is NOT empty, replace in holder and continue to use.

<table>
<thead>
<tr>
<th>1. Remove jewelry. Apply enough product to open palms.**</th>
<th>2. Rub hands together palms to palms</th>
<th>3. Rub in between and around fingers</th>
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<tbody>
<tr>
<td><img src="image1.png" alt="Image" /></td>
<td><img src="image2.png" alt="Image" /></td>
<td><img src="image3.png" alt="Image" /></td>
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<tr>
<td>4. Cover all surfaces of the hands and fingers</td>
<td>5. Rub backs of hands and fingers. Rub each thumb.</td>
<td>6. Rub fingertips of each hand in opposite palm</td>
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<td><img src="image4.png" alt="Image" /></td>
<td><img src="image5.png" alt="Image" /></td>
<td><img src="image6.png" alt="Image" /></td>
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<tr>
<td>7. Keep rubbing until hands are dry.</td>
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</tbody>
</table>

**The volume required to be effective varies from product to product. Enough product to keep hands moist for 15 seconds should be applied. Do not use these products with water. Do not use paper towels to dry hands.

**Note:** Wash hands with soap and water if hands are visibly dirty or contaminated with blood or other body fluids. Certain manufacturers recommend washing hands with soap and water after 5-10 applications of gel.
Hand Hygiene - Using Soap And Water:

Required when hands are visibly dirty or visibly soiled with blood or other body fluids:

• Remove jewelry and wet hands with warm water

• Add soap to palms and rub hands together to create a lather, covering all surfaces of the hands and fingers

• Clean knuckles, back of hands, fingers, space between thumb and index finger

• Work the finger tips into the palms to clean under the nails

• Rinse well under warm running water and dry with a single-use towel and then use a dry towel to turn off the tap

• Minimum wash time = 15 seconds
Hand Hygiene

• Use **ONLY** approved hand soaps, alcohol rubs and lotions:
  • To assure that the products you use are effective in reducing bacteria on your hands
  • To assure that products **DO NOT** damage gloves and cause leaks
  • To reduce hand irritation and dryness
  • To assure that lotions **DO NOT** interfere with antiseptic products
Fingernails

- Artificial nails hide and can harbor bacteria and increase the risk of spreading bacteria to patients:

- Artificial nails (including gels and wraps) are **NOT** allowed in high-risk areas such as ICU, NICU, OR and other areas where invasive procedures are routinely performed

- All nails should be nicely trimmed and should **NOT** be more than ¼ inch long

- Jewels or ornaments should **NOT** be attached to the nails

- Nail polish should **NOT** be chipped
Got 15 seconds to save a life

HAND HYGIENE ... it's the RIGHT THING TO DO!
2014 National Patient Safety Goal:

NPSG.07.03.01

- Implement evidence-based practices to prevent health care–associated infections due to multidrug-resistant organisms in acute care hospitals.

Note: This requirement applies to, but is not limited to, epidemiologically important organisms such as methicillin-resistant staphylococcus aureus (MRSA), clostridium difficile (CDI), vancomycin-resistant enterococci (VRE), and multidrug-resistant gram-negative bacteria.

Rationale for NPSG.07.03.01

- Patients continue to acquire health care–associated infections at an alarming rate. Risks and patient populations, however, differ between hospitals. Therefore, prevention and control strategies must be tailored to the specific needs of each hospital based on its risk assessment. The elements of performance for this requirement are designed to help reduce or prevent health care–associated infections from epidemiologically important multidrug-resistant organisms (MDROs).

- Note: Hand hygiene, contact precautions, as well as cleaning and disinfecting patient care equipment and the patient’s environment are essential strategies for preventing the spread of health care–associated infections. Hand hygiene is addressed in NPSG.07.01.01. Contact precautions for patients with epidemiologically significant multidrug-resistant organisms (MDROs) are covered in IC.02.01.01, EP 3. Cleaning and disinfecting patient care equipment are addressed in IC.02.02.01.
Risk Factors for Colonization and/or Infection with MDROs:

• Admission to an ICU.

• Recent surgery or increased # surgical procedures.

• Instrumentation, Invasive devices (trach, IV catheter).

• Prolonged or frequent hospitalization.

• Antibiotic exposure, especially to extended spectrum β-lactam antibiotics.

• Hemodialysis

• Close proximity to others infected or colonized with MDRO.
Spread of MDROs Can Be Controlled By:

- Good infection control practices.
- Meticulous hand hygiene for contact with patient and patient’s environment of Standard Precautions.
- Good environmental and cleaning practices.
- HCW knowledge regarding these organisms and how they are spread.
- Judicious use of antibiotics.
- Teaching patient and family.
2014 National Patient Safety Goal:

NPSG.07.04.01

- Implement evidence-based practices to prevent central line–associated bloodstream infections. Note: This requirement covers short- and long-term central venous catheters and peripherally inserted central catheter (PICC) lines.

1) Educate staff and licensed independent practitioners who are involved in managing central lines about central line–associated bloodstream infections and the importance of prevention.

2) Prior to insertion of a central venous catheter, educate patients and, as needed, their families about central line–associated bloodstream infection prevention.

3) Implement policies and practices aimed at reducing the risk of central line–associated bloodstream infections. These policies and practices meet regulatory requirements and are aligned with evidence-based standards (for example, the Centers for Disease Control and Prevention (CDC) and/or professional organization guidelines).

4) Conduct periodic risk assessments for central line–associated bloodstream infections, monitor compliance with evidence-based practices, and evaluate the effectiveness of prevention efforts. The risk assessments are conducted in time frames defined by the hospital, and this infection surveillance activity is hospital wide, not targeted.

5) Provide central line–associated bloodstream infection rate data and prevention outcome measures to key stakeholders, including leaders, licensed independent practitioners, nursing staff, and other clinicians.

Continued Next Slide
6) Use a catheter checklist and a standardized protocol for central venous catheter insertion.

7) Perform hand hygiene prior to catheter insertion or manipulation.

8) For adult patients, do not insert catheters into the femoral vein unless other sites are unavailable.

9) Use a standardized supply cart or kit that contains all necessary components for the insertion of central venous catheters.

10) Use a standardized protocol for sterile barrier precautions during central venous catheter insertion.

11) Use an antiseptic for skin preparation during central venous catheter insertion that is cited in scientific literature or endorsed by professional organizations.

12) Use a standardized protocol to disinfect catheter hubs and injection ports before accessing the ports.

13) Evaluate all central venous catheters routinely and remove nonessential catheters.
Thank You:

We hope this module has been both informative and helpful.

Please feel free to review this information until you are confident about your knowledge of the material presented.

Complete & Submit the Supplemental Infection Control Module.