Safety & Infection Prevention Training

Environmental Health and Safety
617-638-8830
www.bu.edu/ehs

Infection Prevention
617-414-7220
http://internal.bmc.org/infectioncontrol/
Introduction

This course serves as an annual refresher to policies and procedures you have already learned through programs like New Employee Orientation.

This course also helps BMC meet some of the annual requirements for mandatory education. Topics in this program are included as required by the Joint Commission, the Department of Public Health (DPH), and the Occupational Safety and Health Administration (OSHA).

Please read the content in the following screens carefully and then complete the post-test. You may want to reference other materials to answer questions. Some additional resources available to you are:

- Department specific policies
- Safety policies on the BMC Intranet: http://internal.bmc.org/policy/
- The Emergency Instructions Flip Charts

If you have questions regarding the topics covered in this course, please contact your Manager or Supervisor, Clinical Educator, Nurse Manager, Environmental Health and Safety (EHS) at 8-8830, BMC’s Safety Officer at 8-8830, or Infection Prevention at 4-4958.
Emergency Contact Numbers

BMC's **emergency contact numbers** can be found on the emergency instructions flip chart, and on the emergency red card ID badge. They can also be found under Safety Policies and Procedures on the BMC intranet: [http://internal.bmc.org/policy/](http://internal.bmc.org/policy/).

Know the following codes and numbers:

- **STAT** - Urgently page personnel- 4-6000
- **Code Red** - Fire and/or smoke - 4-6666
- **Code Green** - Workplace violence - 4-4444
- **Spill** - Chemical/chemotherapy spill - 4-6666
- **Public Safety** - Incidents requiring Public Safety assistance (suspicious person, altercation) – 4-4444

**Code Blue** is for cardiac or respiratory arrest for employees, patients, and visitors. Depending on the type of building you are in, the number to call can be different. If you are in a **clinical building**, call 4-7777. If you are in a **non-clinical building**, call 4-4444. For a specific listing of buildings and the correct Code Blue numbers, please look for the Code Blue policy in BMC Policies and Procedures on the intranet.

**Please do not wait for an emergency before reviewing the Code Blue policy.** When calling Code Blue:

- Identify yourself
- State if a child or adult needs assistance
- Describe what is happening
- Give an exact location and phone number.
Emergency Preparedness

Emergencies come in many forms. Some events such as a plane crash, bus accident, or terrorist activity may generate victims that need our care. Other events may involve an accident at our facilities such as a fire, bomb threat, chemical spill, utility disruption, missing infant or child, workplace violence, or severe weather.

BMC has four phases of emergency response.

- **Phase A** – Advisory that an event has occurred that is being monitored. The hospital remains at normal operations.
- **Phase B** – Localized response affecting some but not all departments. Requires the mobilization of hospital resources to manage the event. On-duty personnel and resources are sufficient to manage the event.
- **Phase C** - The event impacts most if not all of normal operations and requires the mobilization of all hospital resources to manage the emergency. The incident Command System is fully activated to rapidly mobilize or provide alternatives for facility and clinical operations. City and State resources are available and will most likely be needed.
- **Phase D** - City Wide Response. The event disrupts hospital operations and further disrupts city infrastructure and services. Response requires the mobilization of all hospital resources to manage the emergency and may require continuity of operations without external support for an extended period of time.
Emergency Preparedness

Incident Management

BMC uses an Incident Command System (ICS) staffed with trained personnel to manage emergencies and to ensure effective and comprehensive communication with city and state emergency response agencies.

More information is available on the Emergency/Disaster Webpage under Incident Command System.

Emergency Notification

BMC uses Send Word Now to notify administrators, supervisors, managers, and departments operating 24X7 that an emergency has been declared. Information is also made available through all staff emails, web postings, and voice broadcasts/messages. It is important that supervisors and managers communicate the directions provided in the notification and to ensure their staff understand the roles and expectations are during a disaster.

Once notified of a phase B or higher emergency, employees should return to their departments, report to their immediate supervisor, and follow directions.

The Command Center

The Command Center is located in the Power Plant and is opened and staffed at the discretion of the Incident Commander. The Command Center will typically be opened for a phase C or higher events to coordinate the mobilization of resources needed to manage the emergency.
Fire Safety

BMC's RACE Fire Plan is defined below. This plan also appears on the red emergency card issued with your employee ID.

At the first sign of smoke, immediately follow the RACE fire plan:

- **R** Rescue/Remove: Remove person(s) from the immediate fire scene or room.
- **A** Alert/Alarm: Activate the nearest fire alarm pull station, call out 'Code Red', and call the Control Center (4-6666) to explain details and exact location.
- **C** Confine/Close: Confine the fire area by closing all doors to rooms and areas.
- **E** Extinguish/Evacuate: Use a portable extinguisher to extinguish small fires or escape larger fires, if safe to do so. Listen for the Fire Alarm System evacuation messages or signal tone.

Be prepared if there is a fire in your area:

- Know where your nearest Fire Alarm Pull Station is located.
- Locate the nearest fire extinguisher.
- Keep entrance and exit paths as well as fire safety equipment clear and unobstructed.
- Make sure nothing is obstructing fire sprinklers - an 18 inch clearance is required below any sprinkler head.

For more information reference the fire plan found @: [http://internal.bmc.org/emergencypreparedness/](http://internal.bmc.org/emergencypreparedness/)
Fire Safety - Extinguishers

In the event of a fire, an appropriate fire extinguisher can be used to extinguish a small fire (about the size of a flaming wastebasket), but only after the RACE plan has been fully implemented and it is safe to do so.

Do not put yourself at risk and do not attempt to extinguish a fire until you know help is on the way.

Types of fires
- Class A - Ordinary combustables, wood, paper, rags, cloth or trash
- Class B - Involves gases or flammable liquids, oils, gasoline, paints, solvents, and/or grease
- Class C - Involves or surrounds electrical equipment
- Class D - Flammable metals
- Class K - Cooking media (commercial amounts of grease, fats, oils)

Extinguishers are designed to treat specific types of fires
- Class A - Water only
- Class BC - Carbon dioxide CO2
- Class ABC - Dry chemical
- Class D - Sand
- Class K - Wet chemical
Fire Safety - Extinguishers

How to use an extinguisher

Once you have determined the correct type of extinguisher, remember the acronym **PASS** to properly operate it.

- **P** - Pull the safety pin (ring) on the extinguisher
- **A** - Aim the hose/nozzle at the base of the fire
- **S** - Squeeze the extinguisher handles to discharge the extinguisher
- **S** - Sweep the hose/nozzle across the base of the fire
Bomb Threats

Bomb threats are received in many ways. Contact Public Safety (4-4444) if either suspicious packages or telephone calls are received.

If you notice a suspicious package or object...Do not move the item.

Do report any of these conditions immediately:
- Has an incorrect address
- Is delivered by a suspicious person
- Is leaking
- Has exposed wires, makes ticking noises, etc.

If you receive a telephone call...Keep the caller on the phone as long as possible to gather information.

Question the caller on the following:
- Where the bomb is located?
- When will it explode?
- What kind of bomb is it?

Note information about the caller:
- The sex of the caller
- Accents or speech impediments
- Apparent age
- Background noise
- Unusual phrases
- Anything that can help describe the caller
Bomb Search

Following a report of a bomb threat, **staff will be asked to search their areas.**

Only those working in the department will be able to identify objects that are 'out of place.' Never touch anything suspicious.

Upon completion of your search, call Public Safety (4-4444) whether or not you found anything suspicious.

Refer to the Bomb Threat Response plan on the BMC intranet for questions.
[http://internal.bmc.org/emergencypreparedness/PlansProcedures.html](http://internal.bmc.org/emergencypreparedness/PlansProcedures.html)
Code Pink – Infant Abduction

Many safeguards are in place to prevent infant/child abductions. In addition, a response plan has been developed in the event that an abduction does occur or a child is missing.

As part of this plan, the term **Code Pink** has been developed to alert BMC staff of an abduction in the following manner:

- **Announce** Code Pink
- **Involve staff**; response time is critical
- **Conduct a search** of your area
- When the search is complete, **call Public Safety** (4/8-4444)
- Report any suspicious person or object
- Public Safety will maintain a log of searched areas and will secure perimeter doors
- General Services personnel will search common areas/mechanical spaces
- The building where this incident occurred will be closed until the event is cleared

**Security Officers will question and search** individuals leaving the facility
Code Green – Workplace Violence

BMC is committed to providing a safe environment for its patients, visitors, and employees.

Any employee who witnesses an act of violence or thinks there is an immediate threat of an act of workplace violence should do the following:

- Immediately call Public Safety at 4-4444
- State Code Green
- Provide descriptions of the person or persons involved
- Give the location of the incident

If you feel unsafe in the area, immediately leave the area and then make the call.
Hazardous Chemicals and Materials

Hazardous materials are located throughout Boston Medical Center.

The OSHA Hazard Communication Standard requires that employees know the hazards associated with the chemicals with which they work.

All chemicals in your work area are required to be labeled. This standard requires the following information is communicated to you:

- The hazards of the chemicals you work with
- How to protect yourself
- Where to locate Material Safety Data Sheets (MSDS)

Material Safety Data Sheets (MSDS) are provided by the manufacturer to give information about the chemical's ingredients, properties, and permissible exposure limits. MSDS must be located in the work location where the chemicals exist. A list of common chemicals used at BMC can be found on BMC intranet under Environmental Health and Safety (under @ Work).

Prior to the disposal of any chemical, please check with your manager or Environmental Health and Safety. Chemical disposal decisions must be made by trained individuals.
Chemical Spills

In the event of a chemical spill, follow department specific procedures.

For large spills or spills beyond your control, call the Control Center immediately at 4-6666.

Before attempting to clean up a spill:

- **Identify** the chemical
- **Locate a MSDS** sheet for clean-up procedures
- Use Personal **Protective** Equipment (PPE)
- **Contain the spill** only if it can be done safely

**Do not clean up any mercury spills regardless of size.** Call the Control Center immediately to ensure proper disposal.
Disposal of Waste

Boston Medical Center recycles many waste products including paper, cardboard, batteries, and electronics. For more information about recycling programs here at BMC, visit; http://internal.bmc.org/green/ or contact Environmental Services.

All trash in your desk side wastebaskets is processed on site in large compactors and sent off-site for disposal. To help reduce the waste entering our environment please dispose of recyclable materials in their appropriate collection container.

Chemical waste must be managed by properly trained individuals. Chemical waste must not be put into trash or down the drain. Contact your manager or Environmental Health and Safety for information about disposal and training.
Radiation Safety

- BMC is committed to limiting radiation exposures of staff, patients, and visitors to levels that are **As Low As Reasonably Achievable** as required by the Nuclear Regulatory Commission and MA DPH RCP.

- The **Radiation Safety and Medical Physics (8-7052)** is responsible for inspections, maintaining records, and training personnel who uses radioactive materials and/or radiation generating equipment.

- **Anyone working directly with radioisotopes and radiation generating devices (including LASERS)** must complete radiation safety training and may be required to wear a monitoring device.

- BMC personnel who do not work in areas where radiation is used should stay out of those areas. Anyone who works where radiation is used, but doesn't work directly with it, should be aware of the posted area and should not spend unnecessary time in those areas.

- Use the following procedures to **protect yourself from radiation**:  
  - Observe postings
  - Do not go into a posted area if there is no need
  - Do not touch anything marked 'radioactive'
  - Do not put radioactive waste into regular trash
Employee Accidents

On the Job Injuries

Any accident or injury to an employee on the job, however minor, must be reported to your supervisor.

For medical attention:

- Go to Occupational and Environmental Medicine from 7:30am-4:00pm on weekdays
- Go to the Emergency Room at all other times
- You must also fill out an Accident Reporting and Treatment form (ART) with the help of your supervisor
- For serious injuries, call Public Safety (4-4444)

Any staff member who has an accident or exposure while working in a research lab shall contact Research Occupational Health Program (ROHP) at 4-7647. For more information on ROHP visit: http://www.bu.edu/rohp/
Clinical Engineering & Broken Medical Equipment

The **Department of Clinical Engineering** is responsible for the following equipment-related activities:

- Maintaining more than 9,100 medical devices
- Coordinating education and clinical trials
- Performing installations
- Investigating medical device incidents

Check equipment and connections before you use any electrical device.

**Disconnect** any medical/electrical device that:

- Throws sparks
- Has blown a fuse
- Gives even the slightest shock
- Has a frayed/damaged cord or bent/missing prongs

Use the following procedure for **broken equipment**:

- **Remove** the device from service immediately if it is frayed, bent, or missing prongs
- **Contact** Clinical Engineering (8-6060 or 4-4692)
- **Attach** a Broken Equipment Tag provided by Clinical Engineering
- **Notify** others in the immediate area
- **Complete** an incident report
Electrical Safety & Other Information

Use the following guidelines when plugging in electrical devices:

- Electrical devices must be properly grounded: 3-prong or double insulated
- Never use 'cheaters' to convert 3-prong plugs to 2-prong plugs
- Never use extension cords

Utility Loss

In the event of a utility loss, call the Control Center immediately. Utilities at BMC include:

- Elevators
- HVAC
- Plumbing
- Water
- Medical gases

Make sure necessary medical devices are connected to the red electrical outlets in your area. The red outlets will remain powered in the event of a local power outage.
Wireless/Cell Phones

To minimize the potential for interference with medical devices, we ask that wireless/cell phones **not be used** inside **patient rooms, critical care, and/or telemetry areas**.

The **use of camera phones is strictly prohibited** anywhere on the premises.

We ask that all staff and visitors exhibit proper decorum when using phones.
Infection Prevention
Infection Prevention

Health care-associated infections contribute to the deaths of nearly 90,000 patients hospitalized in the US each year. 5% of patients in US hospitals contract care-associated infections each year.

Infection Control saves lives. **BMC's goal** is to have **zero deaths** from hospital care-associated infections. BMC is part of the national campaign to protect **5 million patients** from harm.

Every staff member, student and volunteer at Boston Medical Center **must know his or her role in the Infection Prevention and Control Program**
Break the Chain of Infection

For any infection to occur, **three factors** are always present. This is called the 'Chain of Infection.'

- Germ or pathogen (bacteria or virus)
- Route of transmission (how the germ spreads)
- Host (susceptible person)

It is everyone's job to **break this chain**, primarily **by using good hand hygiene practices**.

The Joint Commission has made **hand hygiene a National Patient Safety Goal**, and monitors whether healthcare workers clean their hands before and after patient contact.

Encourage patients and visitors to wash or use alcohol rub on their hands and to ask staff, "**Did you remember to wash your hands?**"

At BMC, there is a program called "Partners in Your Care" that encourages patients to ask about hand hygiene. Making patients part of the goal empowers them to be participants in their own care. This program has shown a 35-60% increase in health care worker hand hygiene.
Standard Precautions

The blood and body fluids of all patients are considered to be potentially infectious. Therefore, the following standard precautions are used whenever direct contact with blood or other potentially infectious material is likely.

Practice hand hygiene **before and after** direct patient contact and after removing gloves
- Wash with soap and water
- Use alcohol hand rub

Use appropriate Personal Protective Equipment (PPE) when there is exposure risk
- Gloves
- Masks
- Protective eyewear
- Gowns (if contamination is likely from splashing or soiling with body substances)

When working with Personal Protective Equipment (PPE), it is important to:
- Wear the **appropriate** equipment
- Wear **adequate sized** equipment
- Keep this equipment **readily available**
- Dispose of the used equipment properly

**Always use sharps with safety features**
Bloodborne Pathogens

There are many bloodborne pathogens we must be aware of, such as HIV, Hepatitis B, and Hepatitis C. Some symptoms of these diseases include liver disease and opportunistic infections caused by a suppressed immune system.

Bloodborne pathogens are transmitted from person to person in several ways:

- **Sexual transmission**
- **During or after birth** from mother to child
- **IV Drug** use by sharing needles

At BMC, we are concerned with the healthcare associated risks of accidentally being exposed to bloodborne pathogens.

The most common ways of being accidentally exposed are:

- **Percutaneous** (under the skin) - through cuts, needle sticks, other piercing of skin
- **Mucus membranes** - splashing of blood or body fluids on the eyes, nose, lips, tongue
- **Non-intact skin** - recent cuts or broken skin can be vulnerable
Bloodborne Pathogens & the Hepatitis B Virus

If you work with a person's blood or body fluids, you must be aware of the risk of exposure and understand how to minimize your risk.

One way is to have the **Hepatitis B vaccination** which:

- Offers 95% immunity for acute and chronic Hepatitis B
- Is an injected vaccine
- Has very low risk of side effects (a sore arm being the most common)
- Is free of charge for all employees who may be exposed to blood or body fluid

The Hepatitis B vaccination or a formal statement that you decline it is required from all employees who work with blood or body fluids.
Infection Prevention & Accidental Exposures

Accidental Exposure to Body Fluids

Exposure accidents can happen in any of the following ways:

- Needle stick or puncture wound
- Mucous membrane exposure (splash to eyes, nose, or mouth)
- Open wound contact with blood or other potentially infectious material

If accidental exposure occurs, you must do the following:

- **Apply first aid.** Immediately wash exposed or punctured skin with soap and water
- **Report the incident** to your supervisor
- **Report immediately** to Occupational and Environmental Medicine (7AM-4PM) or to the Emergency Department (evenings, nights, weekends)

*Do not delay treatment.*
Infection Prevention & Sharps Policies

- **Don't recap** needles by hand.

- **Do place used needles and other sharps into approved sharps containers.**

- Make sure **sharps fit all the way into sharps containers.** If a sharp container is overloaded, contact Environmental Services.

- **Do use safety syringes.**

- Don't use needles to access IV tubing, **use a plastic access device.**
Infection Prevention – Waste & Clean Up

Proper Waste Segregation

Always segregate waste according to the following guidelines:

- Infectious lab waste and blood-saturated material must go into red bags
- Place sharp waste into sharps containers
- Non-bloody, non-sharp waste and trash must go into clear bags

Proper Cleaning of Patient Care Equipment

Disinfect all patient care equipment between uses with hospital approved disinfectant, which can be found in all patient care areas.

Body Fluid Spills Clean Up

- Wear medical gloves
- Wipe or absorb spill with paper towels
- Disinfect spill site with hospital approved disinfectant
- Remove gloves and wash hands

If you are unable to clean up a spill, notify the Control Center at 8-6666
Infection Prevention – Safe Lab Practices

If working in a medical laboratory, follow these safety practices:

- **Wear appropriate PPE** (Personal Protective Equipment)
- **Adhere to lab guidelines** and **standard precautions** for hand hygiene and disinfection
- **Do not** eat, smoke, drink, or apply cosmetics in the labs
Infection Prevention Droplet - Precautions

There are times when a patient's illness requires we take precautions, in addition to our standard precautions, to protect ourselves and our patients. The next slides contain signs you might see outside a patient's room. If you see one of these signs, follow the directions and take the additional steps required when working with the patient.

The Droplet Precautions sign (shown right) indicates the patient has a disease that could be transmitted by large droplets (for example, the patient coughing or sneezing). In this case:

- The patient must be placed either in a private room, or at a specified distance from other patients and visitors.
- Healthcare workers must wear a mask when working within 3 feet of the patient or when entering the room.
- Limit transport of the patient to essential purposes only. When transporting, place a surgical mask on the patient.
Infection Prevention – Airborne Precautions

The Airborne Precautions sign (shown right) indicates the patient has a disease that could be transmitted through very small particles in the air.

In this case:

- The patient must be placed either in a **private room** that is specially designed to filter and purify the air. Keep the door closed and the patient must remain in the room.
- Healthcare workers must wear an appropriate mask (such as an N95 respirator) when entering the room.
- **Limit transport of the patient to essential purposes only.** When transporting, place a surgical mask on the patient.
Infection Prevention – Contact Precautions

The Contact Precautions sign (shown right) indicates the patient has a disease that could be transmitted via physical contact.

In this case:

- The patient must be placed either in a **private room**, or at a specified distance from other patients and visitors.
- Healthcare workers must **wear gloves when entering** the room and change gloves after having contact with infective material (i.e. fecal material or wound drainage) Remove the gloves before leaving the room.
- Healthcare workers must **wash hands with anti-microbial soap or alcohol rub**.
- Healthcare workers must **wear a gown** when entering the room if there is a likely chance or clothing having substantial contact with the patient and/or infective material. Remove the gown before leaving the room.
- **Limit transport of the patient to essential purposes only**. When transporting, ensure that precautions are maintained to minimize the risk of exposure.
  - Either use patient care equipment dedicated to **that patient only**. If equipment is shared, clean and disinfect between patients.
Identify the Symptoms of Tuberculosis

Symptoms of tuberculosis (TB) are as follows:

- Productive, persistent cough, especially bloody
- Night sweats
- Unexplained, recent weight loss
- Positive TB skin test (should always be evaluated by Occupational and Environmental Medicine)

BMC's Tuberculosis Control Plan

The fundamentals of TB control are:

- **Identify patients** with active TB early
- Initiate airborne precautions promptly
- Initiate effective TB therapy promptly
- Use a properly fitted **N95 respirator** for room entry if patient is on airborne precautions, or for participation in cough inducing procedures
- **Annual TB screening** is required for all staff
- Employees, whose skin test is newly positive, may return to work only with clearance by Occupational and Environmental Medicine

* Employees who are unable to wear a N95 respirator may obtain a PAPR (Powered Air-Purifying Respirator) from Public Safety.
Infection Prevention – Influenza (The Flu)

Influenza or 'the flu' is a contagious respiratory illness.

Most people who catch the flu experience only the discomfort of this common illness and recover quickly. However, influenza kills about 36,000 people each year in the United States.

The flu is spread via droplets, either from coughing or sneezing. Also, it can be transmitted to patients and other individuals 24 hours before you begin to feel symptoms.

To protect patients, yourself, colleagues, and your family, the Center for Disease Control (CDC) recommends that healthcare workers receive an annual flu vaccination in the fall.

BMC offers free flu shots for employees during flu season.
Cough Etiquette

**Cough etiquette** is important for employees, patients, and visitors with cold symptoms.

Covering your cough properly helps stop the spread of germs that make you and others sick. These include serious respiratory illnesses like influenza, respiratory syncytial virus (RSV), whooping cough, and severe acute respiratory syndrome (SARS). These illnesses are all spread by coughing, sneezing, and/or unclean hands.

When you cough or sneeze, be sure to:
- Cover your mouth and nose **with a tissue**
- **Cough or sneeze into your upper sleeve**, not your hands
- **Wash** with soap and water or an alcohol based hand cleanser
- In addition, **wearing a surgical mask** can help protect others.
Infection Prevention – Key Points

- The following are the key things to remember about infection control
  - It's your job to break the chain of infection.
  - Sanitize your hands before and after patient contact.
  - Wear Personal Protective Equipment whenever there is a risk of body fluid exposure.
  - Use hospital approved germicides on shared equipment
Infection Prevention – Additional Resources for You

There are resources for you if you have questions about BMC's Infection Control programs.

The on-line Infection Control Clinical Manual is located in the Policies and Procedures area of the BMC intranet (under @Work).

In addition to all of BMC's infection control policies, it contains:
- The Exposure Control (OSHA compliance) Plan
- The TB Prevention Plan

Infection Prevention personnel are available to answer any questions about the Exposure Control Plan and other infection control topics. Their office is open from Monday through Friday from 8:00 a.m. - 4:00 p.m. The telephone number is 617-414-7220.
Corporate Compliance

Boston Medical Center is committed to maintaining an **ethical workplace** for its employees, agents, medical staff members and affiliates. It is the policy of BMC to **comply with state and federal laws and regulations** in all aspects throughout the organization.

As part of this commitment, BMC has an established, **formal corporate compliance program**. The Corporate Compliance Program seeks to communicate, monitor and enforce organizational standards and procedures.

**Compliance Hotline**

BMC has a special **telephone hotline** to be used for reporting any possible misconduct to the Corporate Compliance Officer. This toll free line may also be used to contact the compliance department for specific guidance on a compliance or ethical issue. All calls are confidential to the extent allowed by law.

**1-800-586-2627**

Reports may also be made in writing to the Corporate Compliance Office:

85 E Concord St., 7F

Boston, MA 02118
Conclusion

Thank you for taking the time to review our Safety and Infection Control online training module.

You must now proceed to the post-test. **To pass this test, you must score at least 90% correct.**

After you take the test, be sure to review the explanation of any answers you may have answered incorrectly. This information is essential to the safety of patients, staff, and visitors and is important that you understand it.

**If you have questions** regarding the topics covered in this course, please contact your Manager or Supervisor, Clinical Educator, Nurse Manager, Environmental Health and Safety (EHS) at 8-8830, BMC's Safety Officer at 8-8830, or Infection Prevention at 4-4958.

Please exit the course and proceed to the test.