Clinical Laboratory Safety

OSHA Requirements

- The agency that establishes safety standards for the workplace is OSHA (Occupational Safety and Health Administration).
- Some important mandates for clinical laboratories include:
  - Hazard Communication (Right to Know)
  - Occupational Exposure to Blood-borne Pathogens
  - Occupational Exposure to Hazardous Chemicals in Laboratories
  - Respiratory Protection

General Safety

- The EMPLOYER is ultimately responsible for safe-guarding the health of its employees.
- Safety Director has three primary responsibilities
  - Oversee safety program and provide guidance to safety manager
  - Provide leadership for an effective safety program
  - Resolve problems involving employee and/or environmental safety
General Safety

- Clinical Laboratory Safety Officer
  - Develop and maintain a laboratory safety training manual
  - Keep safety director updated on safety needs and safety conditions in the department
  - Conduct or coordinate safety conditions in the department
  - Develop safe work methods and determine safety equipment needs
  - Document and maintain departmental safety training and accident investigation records. Conduct inspections
  - Represent the laboratory's interest on the facility's safety committee and/or coordinate activities for the laboratory safety committee

- Clinical Laboratory Supervisor
  - Monitor the work habits of employees under his or her supervision
  - Assume responsibility for the safety of the work area and the equipment
  - Establish safe work practices for employees to follow
  - Attend safety-training programs conducted by the lab safety officer

- Clinical Laboratory Employees and Students
  - Adhere to safety policies and procedures
  - Read MSDS prior to using chemicals/agents
  - Follow standard precautions
  - Report injuries and safety hazards IMMEDIATELY
  - Read facility's blood born pathogen & chemical hygiene plans prior to working
  - Know location of the nearest fire safety equipment, eye wash station, and safety shower
  - Know the fire evacuation routes from your department
  - Use the required safety equipment as provided by employer
Biological Hazards – exposure to an infectious agent. (blood borne or present in tissue or body fluids) Wear PPE

Chemical Hazards (MSDS – keep all!)
- Flammable
- Corrosive
- Toxic
- Carcinogenic
- Reactive/explosive

Types of Hazards in Clinical Laboratory

Physical Hazards
- Fires, cuts, punctures, bruises, falls, trips, slips, etc.
- Report all accidents
- Eliminate clutter in the work area
- Clean up spills as they occur
- Compressed gas cylinders
- Be secured to wall

Fire Safety

Fire safety and fire extinguisher training are OSHA requirements

Two types of fire extinguishers are most common – Type ABC or Type BC
- Class A (water base) – for paper and wood
- Class B (foam or dry chemical) – flammable liquid or gases
- Class C (foam or dry chemical) – for electrical
- Class D (graphite or dry chemical) – metal fires
Types of Hazards in Clinical Laboratory

- Electrical Hazards – shocks, fires, burns
  - Use hospital grade electrical plugs
  - Outlets should be checked regularly
  - Unplug defective equipment

- Radioactive Hazards
  - When Radionuclides are used or stored
  - Containers must be labeled with the radiation symbol

Barrier Protection

- Engineering controls – First line of defense against biological and chemical agents
  - Good ventilation with hourly air exchanges
  - Biological safety cabinets
  - Fume hoods
  - PPE – personal protection equipment
    - Gloves, gowns, lab coats, masks, face shields
    - Should be provided by employer
As of June 1, 2015, the Hazard Communication Standard (HCS) will require pictograms:

- [https://www.osha.gov/Publications/OSHA3636.pdf](https://www.osha.gov/Publications/OSHA3636.pdf)

See next slide for examples.
Waste Disposal

› Biohazardous wastes should be segregated from noninfectious and chemical wastes
› Biohazard wastes – red/red-orange bags in leak proof containers with universal biohazardous symbol on them

Record Keeping

› The employer should maintain records of equipment monitoring, equipment repairs, and personnel monitoring results.
› Job related accidents or incidents should be thoroughly investigated and documented
Record Keeping

- Written records of all employee accidents and incidents must be maintained by the employer.
- Medical records must be kept by the employer during the employee’s tenure and for 30 years after the employee has left employment.
- Safety training and review records must be maintained during employee’s tenure and for 3 years after the employee has left employment.