# Safety in the Laboratory

Safety is everyone's responsibility. Working together we can make a safe environment.

# Safety in the Laboratory

Safety training takes place during new employee orientation, when required by the medical center, and annually by the lab.

# Regulatory Agencies

In order to minimize the risk of PLMS personnel handling and performing testing on specimens, which are potentially infectious, certain guidelines shall be observed.

These guidelines have been established in accordance with the regulations of:

**OSHA** - **Occupational Safety and Health Administration.**

- Enforces standards and recommendations of National Institute of Occupational Safety & Health.
- Concerned with worker safety.

# Regulatory Agencies

- Fines employers for not complying with set forth standards and regulations.

  **OSHA Code of Federal Regulations. Occupational exposure to hazardous chemicals in laboratories; Title 29, 1910.1450. The above link to the OSHA Laboratory Standard is incorporated into the "Chemical Hygiene Plan".**

## CAP – College of American Pathologists.

- Set forth rules on Administration, Computer Services, safety & individual Lab section's policies, procedures and quality control.

## TJC – The Joint Commission.

- Safety, Education, Training of employees.
- Patient care.
- Quality assurance.

# Safety Policies

- Currently VISN and local safety policies and procedures can be found in Proquis (online document control system). A hard copy of Safety policies and procedures is located in a Safety binder in the Central Processing Area.

- It is each person's responsibility to know how to readily access the policies and procedures.

# Reporting of Quality/Safety Concerns

- Any health or safety concerns that are not addressed or that you may not want to report to your Supervisor may be reported to the College of American Pathologists (CAP) or to Hospital Safety (see Hazard Reporting Form on Quick Navigation Links on our Homepage).

# Prevention

**Hepatitis B vaccination program** is conducted in accordance with the Hospital/Medical Center Exposure Control Plan at each facility in the PLMS Service Line.

**A Tuberculosis screening program** is conducted in accordance with Hospital/Medical Center Employee Health Policies & Procedures for employees identified in the facility Tuberculosis Exposure Control Plan.

**An Influenza vaccination program** is conducted annually through the Hospital/Medical Center Employee Health Section.

# Basic Safety Rules

## Food, Drink, Cosmetics:

- Eating, drinking, chewing gum, smoking, and application of cosmetics are forbidden in laboratory area. Such activities should be done only in well-defined, designated clean areas. Do not store food in the same refrigerator with chemical or biohazard materials.

# Basic Safety Rules

## Personal Items:

- Personal electronic devices are not to be used in the technical work areas.
- Do not store personal belongings, i.e. purse, backpack, coat, boots, coffee mugs, sweaters, prepackaged foods, medications, etc. in the technical work areas.  These items should be stored in staff lockers.

# Basic Safety Rules

- Unnecessary risks shall not be taken; questions concerning job safety should be referred to the appropriate supervisor.
- Sniffing of the reagents can cause injury to an employee's mucous membranes and is prohibited.
- Working alone with hazardous materials is strongly discouraged. In unavoidable circumstances it is advisable to notify someone of your intentions.
- Sharps must be placed into rigid, puncture resistant (biohazard labeled) plastic sharps containers. Do not cut, bend or recap needles.

# Basic Safety Rules

- NEVER try to retrieve anything that is placed in a sharps container.
- Mouth pipetting is strictly forbidden.
- Always add acids or alkali to water.
- Before leaving the work area, remove all protective equipment.
- Report accidents/injuries promptly (within 48 hours).
- Handwashing is the single most important procedure for preventing exposure to and transmission of infectious agents.

# Bloodborne Pathogens

**Bloodborne pathogens are pathogenic microorganisms that, when present in human blood, can cause disease. They include, but are not limited to, hepatitis B virus (HBV), hepatitis C virus (HCV), and human immunodeficiency virus (HIV).**

## HBV Infection

- Recognized by the Centers for CDC as a major occupational hazard for health care workers.
- Risk for HBV infection comes from needlesticks with contaminated needles.
- An important preventative measure to reduce the potential for HBV transmission is the use of gloves.

# Bloodborne Pathogens

- HBV is a vaccine-preventable disease.
- OSHA regulations require all health care personnel at risk for exposure to HBV receive a hepatitis B vaccination.
- HBV vaccination program is conducted in accordance with the Medical Center's Exposure Control Plan and administered through the Employee Health section. All at risk employees exposed to bloodborne pathogens must either consent or decline the HBV vaccination.

## HCV Infection

- Vaccine not available.
- Needlestick injuries and a lapse in the application of standard precautions may cause a higher prevalence of infection in health care professionals.

# Bloodborne Pathogens

**HIV Infection**

- Is the primary etiologic agent of the acquired immunodeficiency syndrome (AIDS) and AIDS related complex.
- Reported cases of transmission of HIV to health care professionals usually follows a needlestick injury with contaminated blood
- Vaccine has not been developed.
- Most exposures do not result in infection, factors effecting the risk of exposure include: the type of exposure, the amount of blood involved, the amount of virus in the patient's blood at the time, whether post exposure treatment was given.

# Bloodborne Pathogens

## CREUTZFELDT-JAKOB DISEASE (CJD)

- Degenerative brain disorder that leads to dementia and, ultimately, death.
- Creutzfeldt-Jakob disease captured public attention in the 1990s when some people in the United Kingdom developed a form of the disease — variant CJD (vCJD) — after eating meat from diseased cattle. However, "classic" Creutzfeldt-Jakob disease has not been linked to contaminated beef.
- Estimated one case of Creutzfeldt-Jakob disease diagnosed per million people each year, most commonly in older adults.
- The risk of CJD is low. The disease can't be transmitted through coughing or sneezing, touching, or sexual contact. The three ways it develops are:

# Bloodborne Pathogens

- **Sporadically.** Most people with classic CJD develop the disease for no apparent reason. CJD that occurs without explanation is termed spontaneous CJD or sporadic CJD and accounts for the majority of cases.
- **By inheritance.** In the United States, about 5 to 10 percent of people with CJD have a family history of the disease or test positive for a genetic mutation associated with CJD. This type is referred to as familial CJD.
- **By contamination.** A small number of people have developed CJD after being exposed to infected human tissue during a medical procedure, such as a cornea or skin transplant. Also, because standard sterilization methods do not destroy abnormal prions, a few people have developed CJD after undergoing brain surgery with contaminated instruments. Cases of CJD related to medical procedures are referred to as iatrogenic CJD. Variant CJD is linked primarily to eating beef infected with bovine spongiform encephalopathy (BSE), the medical term for mad cow disease.

# Bloodborne Pathogens

- **Tuberculosis** (TB) is a disease caused by germs that are spread from person to person through the air. TB usually affects the lungs, but it can also affect other parts of the body, such as the brain, the kidneys, or the spine.
- TB germs are exposed to the air when a person with TB disease of the lungs or throat coughs, sneezes, speaks, or sings. These germs can stay in the air for several hours, depending on the environment
- The general symptoms of TB disease include feelings of sickness or weakness, weight loss, fever, and night sweats. The symptoms of TB disease of the lungs also include coughing, chest pain, and the coughing up of blood. Symptoms of TB disease in other parts of the body depend on the area affected.
- The TB skin test (Mantoux **tuberculin skin test**) is offered annually to appropriate staff by the Medical Center Employee Health Clinic.

# Bloodborne Pathogen Standard - OSHA

- OSHA's Bloodborne Pathogen Standard, 29 CFR 1910.1030 applies to employees who may “reasonably anticipate” contact with blood or other potentially infectious materials while working. The Standard incorporates the following topics:
  - Exposure Control Plan
  - Employee Education and Training
  - Control Measures/Methods of Compliance
  - HBV vaccinations
  - Post Exposure Evaluation and Follow Up
  - Waste Disposal
  - Hazard Communication
  - Housekeeping and Laundry Practices
  - Recordkeeping

# Standard Precautions vs Universal Precautions

**Standard Precautions** is an infection prevention process designed to reduce transmission of infectious agents between patients, hospital personnel and others.

In 1996, the CDC expanded the concept of Universal Precautions (defined in OSHA's Bloodborne Pathogen Standard 29 CFR 1910.10130) and changed the term to Standard Precautions, which integrated and expanded the elements of Universal Precautions to include contact with all body fluids (except sweat), regardless of whether blood is present. Standard Precautions includes the use of: hand washing, appropriate personal protective equipment such as gloves, gowns, masks, whenever touching or exposure to patients' body fluids is anticipated.

It is best practice to use Standard Precautions on all specimens in the laboratory.

# Body Fluids

- Body Fluids that can cause infection:
  - Human Blood
  - Semen
  - Vaginal secretions
  - Body fluids (cerebrospinal, synovial, pleural, peritoneal, pericardial fluid)
  - Amniotic fluid
  - Unfixed tissue or organs other than intact skin from living or dead humans.
  - Cell or tissue cultures that contain HIV or HBV
  - Organ cultures, culture media, or similar solutions.

# Routes of Exposure

- **Parenteral Exposure**: blood or other infectious materials come in contact with: non-intact skin (skin with scratches, cuts, rashes, etc.); mucus membranes (such as the eyes, nose or mouth); cuts or puncture wounds (needle sticks, scalpel, ).
- **Respiratory Exposure**: Inhalation of pathogen. The risk of infection depends on the type and concentration of pathogen and on the health status of the exposed individual. Within the laboratory, aerosols are the primary hazard for respiratory transmission.
- **Contact Exposure**: Direct or indirect exposure to a pathogen. Proper use of gloves and keeping benchtops, instruments, computers, telephones and other surfaces clean can reduce the chance of infection due to contact transmission.

# How to protect yourself

**There are five main elements of protection against exposure to bloodborne pathogens:**

1. Standard Precautions
2. Risk Task Assessment/Personal Protective Equipment (PPE)
3. Housekeeping
4. Engineering Controls
5. Work Practice Controls

# 1. Standard Precautions

**Standard Precautions**:

See definition from Slide 19 above.

Note: Specimens for CJD in the clinical pathology laboratory are treated the same as any other specimen.

# 2. Risk Task Assessment

**The VISN Risk Task Assessment is a guide that outlines PPE and Engineering Controls for various lab section areas. There are two documents found in Proquis for staff to reference, one is the "Minimum Required PPE/Controls" for an area and the other is the Risk Task Assessment (RTA).**

The RTA is evaluated on an annual basis and tasks are added or deleted based on changes in the department. Technical committees evaluate and assess processes and, based on their expertise and guidance, choose the appropriate PPE/Controls to minimize the risk of a hazard (splash).

An assessment "matrix" allows for consistency and incorporates probability and severity of a task.

# 2. Risk Task Assessment

**The assessment is broken down into:**

**Initial Risk –** Level of risk that is inherently there just by performing a task without any controls, and most often, results in a Moderate or High Risk.
**Mitigation (Controls) –** Proper PPE and engineering controls are in place to lower or eliminate risk.

**Residual Risk -** a risk that is reduced when utilizing mitigation processes (controls). Even though there is a hazard present, controls are used to mitigate the risk of exposure, thus, a “low risk” score should be obtained. If not, additional controls or a change in the process would have to take place to reduce the risk to ensure proper protection for the employee.

# 2. Personal Protective Equipment

**PPE** ( Personal Protective Equipment) - equipment that protects you from contact with potentially infectious materials may include gloves, masks, gowns, aprons, lab coats, face shields, safety glasses, goggles. Personal protective equipment must not allow potentially infectious materials to contact your street clothes, skin or mucous membranes. PPE is applied before you perform the tasks that require it, and never worn in clean areas such as hallways, elevators, offices etc.

**PPE must be appropriate for the task and shall be worn according to the Laboratory Task Assessment.**

# 2. PPE - Attire

## 1. **Attire:**

**a)** Cover legs (i.e. wear long pants; no shorts or skirts, blue jeans are not permitted);

**b)** Cover feet - **shoes should cover the entire foot. Shoes with closed toes/back and non-slip soles should be worn. Shoes that can absorb chemicals or infectious fluids are not to be worn;**

**c)** Hair – must be secured back and off the shoulders in such a manner as to prevent it from coming into contact with contaminated materials or surfaces and moving instrumentation.

# 2. PPE - Gloves

## 2. <u>Gloves</u>:

**a)** You must wear gloves when handling primary specimens. If you anticipate hand contact with blood, potentially infectious materials, mucous membranes, non-intact skin, or hazardous chemicals.

**b)** Mandatory when performing phlebotomy procedures.

Change gloves in between each patient. Wash hands between each patient.

**c)** Disposable gloves are for single use only, do not wash or disinfect gloves for reuse. Gloves shall be disposed of into regular trash unless visibly contaminated with blood and other body fluids.

**d)** An individual experiencing dermatitis problems should see the supervisor who will then be referred to the Employee Health Physician.

# 2. PPE - Gloves

**e)** Glove materials vary in their effectiveness at protecting against chemical hazards. We use **nitrile** gloves which are chemically resistant to most chemicals. Our gloves are 100% latex free and powder free. Glove thickness also plays a part in protecting against chemical hazards (some SDS will provide this info). Double-gloving is an option.

**f)** Glove removal: You must follow a safe procedure for glove removal being careful that no substances from the soiled gloves contact your hands.

**g)** Replace gloves immediately when torn or contaminated.

**h)** Note: Tourniquets are disposed of after each patient.

**j)** Proper size: Not too small which would result in tearing;

Not too large which would prevent proper gripping.

**k)** Staff should avoid using oil-based or petroleum based skin products on their hands; these products can cause the gloves to deteriorate.

# 2. PPE – Gloves (Latex allergy)

**Latex allergy or sensitivity** can be frightening and or disabling. People who are sensitized to natural rubber latex may experience symptoms ranging from sneezing, watery eyes and dermatitis to abdominal cramping, asthma and anaphylaxis. In an effort to avoid or minimize the risk of latex allergy or sensitivity, the appropriate personal protective equipment (PPE) should be used and effective work practices implemented.

Our facility is <u>not</u> 100% latex free, but the laboratory supplies are. You may come in contact with latex Chemo gloves when drawing blood. If there is a patient with a latex allergy there is a non-latex alternative.

# 2. PPE – Glove Donning/Doffing

**a) Donning (to put on) :**

Pull gloves onto hands and overlap onto the cuff of isolation gown/laboratory coat.

**b) Doffing (to remove)** :

1. Grasp cuff of one glove and pull down toward finger tips, making sure that the inside now is on the outside.
2. Transfer rolled up glove to opposite hand which is still gloved.
3. Insert a finger into the inside of opposite gloved hand, grasp inside and proceed to pull glove down over finger tips.
4. Discard into appropriate waste container.
5. Wash hands using proper hand washing techniques.

# 2. PPE – Lab Coat

## 3. Lab Coat:

**a)** Must be worn buttoned at all times;

**b)** Only to be worn in the technical/analytical areas (are not to be worn outside of the lab i.e. lunch room, administrative offices, rest rooms, copy rooms).

**c)** Changed frequently when dirty/contaminated.

**Removal of Laboratory Coat for Reuse**

1. Remove gloves first using proper removal technique as previously described.
2. Unbutton coat, remove and hang in appropriate area.

**Removal of Laboratory Coat for Disposal**

1. Remove gloves first using proper removal technique as previously described.
2. Unbutton coat and remove. Check all pockets, turn garment inside out and roll.
3. Place rolled coat into the regular waste disposal container.

# 2. PPE – Isolation Gown

**Donning:**

1. Holding gown at neck opening, place over head, slide arms into sleeves.
2. Grasping sides of the gown at hip level, overlap gown in the back ensuring complete coverage of street clothing.
3. Holding the strings at the waist, crisscross in the rear of the garment, around to front and tie, if possible.

**Doffing:** Remove your gloves and disposable gown in such a way that all contaminated (outside surfaces) are not touched.

1. Pull/undo gown fasteners
2. Pull gown away from neck and shoulders
3. Remove one arm by scooping away gown and glove with opposite gloved hand.
4. Using finger of ungloved hand, scoop under inside of other glove to remove.
5. Roll inside out and toss in trash in patient's room.
6. Wash hands.

# 2. PPE - Aprons

**Donning:**

1. Don apron, tie if necessary.
2. Don gloves using proper gloving procedure previously described.

**Doffing:**

1. Remove gloves first, using proper degloving procedure previously described.
2. Remove apron by grasping apron on inside, and rolling it down with clean side out. Avoid exposure to the face and mucous membranes when degarbing.
3. Discard apron into regular trash. Aprons that are visibly contaminated with blood or other body fluids shall be discarded into biohazardous waste.
4. Wash hands using proper hand washing technique.

# 2. PPE – Eye Protection

## 4. <u>Eye protection:</u>

**a)** Safety glasses and face shields are available if the procedure requires eye protection or when working with open specimens.

**b) Chemical safety goggles must be worn when working when chemicals.**

**c)** Full-face shields must be worn in addition to eye protection when conducting a procedure that may result in a violent reaction or large quantities where there is greater risk of splash.

# 2. PPE – Respiratory Protection

## 5. Masks/Respiratory Protection:

**a)** Always work in a fume hood or other provided local exhaust ventilation when working with materials that produce hazardous vapors or fumes.

**b)** Masks that cover the mouth may be used in conjunction with safety glasses, instead of a face shield, if the task requires face protection.

**b)** Donning: Place mask over nose/mouth and position the band(s). Using fingers shape the nose piece.

**c)** Doffing: Remove other items of PPE prior to removing mask; Remove mask handling strings/bands only, discard, wash hands.

# 2. PPE - N95 Respirator

**5. N95 Respirator** is used on patient floors when entering Airborne Precaution rooms. Found in cabinet outside of patient room or in the Ante-Room. Before using one must be fit-tested through Employee Health on an annual basis. A fitted PAPR (Powered Air-Purifying Respirator) can also be used as an alternative.

**Donning:**

1. Select N95 mask that you have been fitted for.
2. Secure ties or elastic bands at middle of head and neck.
3. Fit flexible band to nose bridge.
4. Fit snug to face and below chin.
5. Fit-Check the mask: Place both hands completely over the respirator and exhale forcefully. A positive pressure should be felt under the respirator. If air escapes around the nose, readjust the nose clip. If air leaks at the respirator edges, adjust the straps to achieve a better fit.

   **NOTE:** If you are unable to achieve a proper fit, DO NOT enter the contaminated area.

**Doffing (removal):**

1. Remove N95 mask without touching front of mask pulling mask away from face, hair, and body; touch elastic strap or ties only.

# 2. PPE – from OSHA's Bloodborne Pathogen Standard

*Masks, Eye Protection, and Face Shields*:

Masks in combination with eye protection devices, such as goggles or glasses with solid side shields, or chin-length face shields, shall be worn whenever splashes, spray, spatter, or droplets of blood or other potentially infectious materials may be generated and eye, nose, or mouth contamination can be reasonably anticipated.

# 3. Housekeeping

- The work site shall be maintained in a clean and sanitary condition: to minimize exposure to blood and other potentially infectious material. Work surfaces shall be decontaminated at the beginning and the end of each tour of duty, or immediately, or as soon as feasible, upon visible contamination or after any spillage.
- Cleaning and decontaminating all infected surfaces: must be cleaned with 1:10 dilution of household bleach or other cleaning solution (3M Hospital Disinfectant). Bleach solution must be mixed fresh daily in order to maintain strength. PPE must be worn during cleanup operations to prevent contact with infectious substances.
- Disposing of Blood and Other Potentially Infectious Material (OPIM) properly: Regulated waste includes items with blood products in quantity that could drip, pour, be squeezed or flaked. Such waste is placed in biohazard or red-colored containers or plastic bags.

# 3. Housekeeping

## Regulated Waste:

**Sharps** – dispose all needles, knives, blades, slides, broken glass or anything resembling such. Never try to retrieve anything from these containers. Do not go above the over fill-line (2/3 full).

**Biohazard containers** – dispose items with blood products in quantity that could drip, pour, be squeezed or flaked. Do not dispose of gauze, paper, gloves, plastic containers that do not fit this description.

Do not remove red bags from the container, please use a biohazard container on wheels from Room 2629 and transport the container to the waste. Lifting the red bag out of the container and then hauling the red bag to the disposal area is not best practice.

**Sharps containers and biohazard waste are kept in a central location (Rm 2629) for daily pick up by EMS.**

# 3. Housekeeping – Dirty vs Clean

- Technical areas are considered “contaminated” or “dirty”. All surfaces may be touched with gloved hands. All telephones, doorknobs, computer terminals and other surfaces would be considered contaminated. Persons entering these areas with ungloved hands to use telephones, computer, or other equipment would be responsible for gloving. Before leaving area, individual would be responsible for washing their hands. Contaminated phones and keyboards have a biohazard sticker attached.
  - NOTE: There are a few offices in the main lab that are considered “clean” areas and have a sign posted on the door to inform staff.

# 3. Housekeeping – Dirty vs Clean

- Any area that has a “biohazard may be present” sign posted on the enterance (supply room) is considered a “dirty area”.
- Examples of “clean” areas in the laboratory:
  - offices (if noted with a “clean” area sign)
  - restrooms (exception - main restroom used for drug screen collections would be considered “dirty”)
  - conference room
  - mail/copy/locker room
  - break room

# 3. Housekeeping/Decontamination

**Decontamination** is the inactivation or removal of microorganisms from a surface or an item by the use of physical or chemical means. Decontamination can thus be accomplished by the application of a disinfectant material as dictated by a particular situation. The decontamination process renders an item or surface safe to handle. Disinfection is the chemical destruction of all vegetative cells, not spores of microorganisms.

**SA-113-018 PROCEDURE FOR DECONTAMINATION**

**1.** Routine (work surfaces, specimen containers, floors, etc.)

**2.** Equipment (centrifuges, fume hoods, refrigerators, freezers, biosafety cabinets).

**3.** Instruments

**4.** Computer Equipment (CRT's, keyboards, printers, cables)

**5.** Autopsy Area and Equipment (tables, pans, trays, buckets, instruments, i.e. scalpels, blades, work surfaces, and floor surrounding autopsy tables).

# 4. Engineering Controls

**<u>Engineering Controls</u> - are items that reduce employee exposure either by eliminating or isolating the hazard. Examples of engineering controls include:**

- Hospital ventilation, air conditioning;
- Fume hoods, biological safety cabinets;
- Sharps disposal containers;
- Self-sheathing needles;
- Forceps;
- Hand washing facilities;
- Eye wash stations;

# 5. Work Practice Controls

**<u>Work Practice Controls</u> - are the actions that employees take to protect themselves. These include:**

- **Always use Standard Precautions;**
- **Avoiding aerosol formation** (some procedures at risk for aerosol generation include: centrifugation, pipetting, sonicating, vortexing, opening tubes, inserting a hot loop into a culture, resuspending packed cells/viruses);
- **Proper hand hygiene**
- **Proper handling of sharps** - Manual manipulation of needles is generally prohibited - do not recap, bend, break, or remove from syringes. Needles and other sharps must be discarded immediately into approved puncture-resistant containers. Do not overfill containers.

# 5. Work Practice Controls

- **Proper handling of specimens**
- **Proper housekeeping -** Disinfect work surfaces with a suitable disinfectant once per shift and immediately when visibly soiled. Absorbent bench covers should be changed daily or when visibly contaminated.
- **Proper laboratory etiquette -** No eating, drinking, smoking, applying cosmetics or lip balm or manipulating contact lenses. Avoid touching face (includes no pencils or pens in mouth). Restrain long hair (longer than shoulder length) and loose, flowing clothing or jewelry.

# 5. Work Practice Controls – Hand washing

**Hand washing is the single most important procedure for preventing exposure to and transmission of infectious agents.**

Hands should be washed frequently throughout the day:

- Whenever there is visible contamination with blood or body fluids,
- After completion of work,
- After glove removal and between glove changes,
- Before leaving the laboratory,
- Before and after eating, drinking, smoking or applying cosmetics, and using the restroom
- Before and after all other activities that entail hand contact with mucous membranes, eyes, or breaks in skin.

# 5. Hand washing Procedure

**Soap and water technique**

1. This method is always used if hands are visibly soiled
2. Wet hands wrists thoroughly under running water.
3. Apply germicidal soap and rub hands vigorously for at least 15 seconds, including between the fingers and around and over the fingernails.
4. Rinse hands thoroughly under running water in a downward flow from wrist to fingertips.
5. Dry hands with a paper towel. Use the paper towel to turn off the faucet handles.

.

**Waterless hand washing product**

1. When decontaminating hands with an alcohol based hand rub, apply product to palm of one hand and rub hands together, covering all surfaces of hands and fingers, until hands are dry. Hand sanitizers (gel, foam) are available throughout the lab (dispensers available at each phlebotomy station) .

Note: Do not use waterless hand washing procedure if exposure to *Bacilllus* or *Clostridium* is suspected or proven. The physical action of washing and rinsing hands under such circumstances is recommended because the agents in waterless hand washing products have poor activity against spores.

# Chemical Safety

## Chemical Hygiene Plan

Educates laboratory workers about the health hazards associated with hazardous chemicals. Ensures and promotes a safe work environment and protects employees, patients, and visitors from exposure to hazards associated with the use and storage of chemicals in the clinical laboratory areas.

The chemical hazards are determined from the SDS, labels, and other appropriate references.  SDS files are available to every employee.

Each year the staff will review the CHP and take a quiz.

# GHS & Hazard Communication

**The Hazard Communication Standard was updated in 2012 to align with the United Nations Globally Harmonized System .**

**OSHA has modified the Hazard Communication Standard (HCS) to adopt the GHS to improve safety and health of workers through more effective communications on chemical hazards.**

The **Globally Harmonized system (GHS)** is an international approach to hazard communication, providing agreed criteria for classification of chemical hazards, and a standardized approach to label elements and safety data sheets.

# Chemical Labeling

## Primary chemical containers

Must be affixed with a legible manufacturer label. Note that distributors may ship products labeled by manufacturers under the old system until December 1, 2015. *

The following is included on the label:

- Product identifier
- Signal word *
- Hazard statement(s)
- Pictogram(s) *
- Precautionary statement(s)
- Name, address and telephone number of the chemical manufacturer, importer or other responsible party.

# Chemical Labeling

When portions of chemicals are removed from the original bottles, or if new solutions are created in the laboratory, these containers must be labeled with **Secondary Labels**, or "workplace" labels.

Secondary labels are preferred to be in the GHS format to match the primary container, but not required.

Labels should include:

- the identity of the hazardous chemical
- the date filled
- precautionary/hazard warning label; a hazard rating system, i.e. GHS, NFPA, HMIS, etc.
- what to do if accidental contact occurs.

# NFPA (National Fire Protection Association)

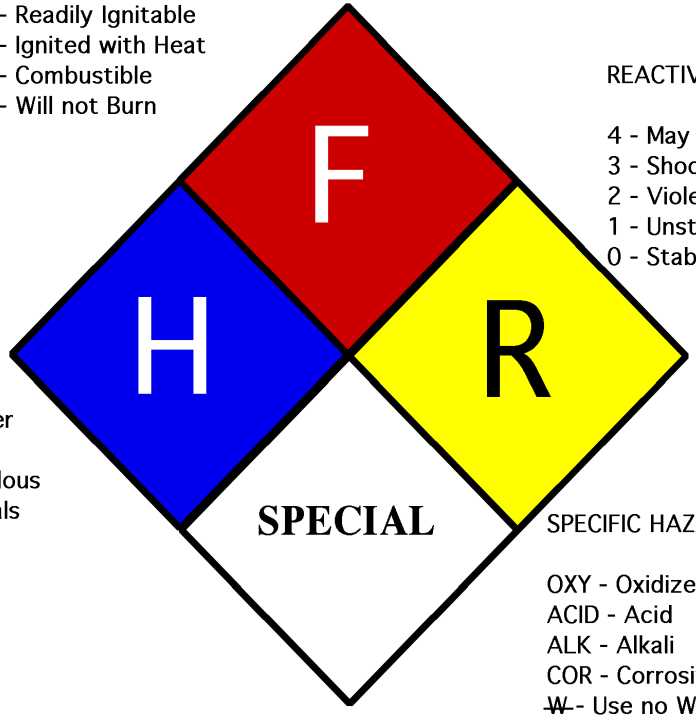
- The National Fire Protection Agency (NFPA) has developed a chemical hazard warning system to guide fire and rescue personnel in the even of an emergency.
  - **Left Quadrant – Health Hazard (Blue) –** Indicates that the material may, directly or indirectly , cause permanent or temporary injury as a result of acute exposure by physical contact, inhalation, or ingestion.
  - **Top Quadrant – Flammability (Red) –** assesses the relative susceptibility of materials to fireburst, based on the form or condition of the material and its surrounding environment.
  - **Right Quadrant – Reactivity, Instability (Yellow) –** Advises that the material may be susceptible to explosion, whether through self-reaction, polymerization, or exposure to certain conditions or substances.
  - **Bottom Quadrant – Special hazard (White) –** Covers special properties and other hazards associated with a particular material: Oxidizer, No water, Acid, Alkali, Corrosive, Radioactive.

# NFPA (National Fire Protection Association)

## NFPA 704M LABEL

FIRE HAZARD

4 - Very Flammable
3 - Readily Ignitable
2 - Ignited with Heat
1 - Combustible
0 - Will not Burn




REACTIVITY HAZARD

4 - May Detonate
3 - Shock & Heat May Detonate
2 - Violent Chemical Change
1 - Unstable if Heated
0 - Stable

HEALTH HAZARD

4 - Deadly
3 - Extreme Danger
2 - Hazardous
1 - Slightly Hazardous
0 - Normal Materials

SPECIFIC HAZARD

OXY - Oxidizer
ACID - Acid
ALK - Alkali
COR - Corrosive
~~W~~ - Use no Water

# HMIS (Hazard Material Information System) Label

**HMIS Label** – This labeling system is not intended for emergencies (NFPA), rather to inform users of a broader range of information regarding a chemical.

The four bars are color-coded indicating type of hazard:

Blue = Health

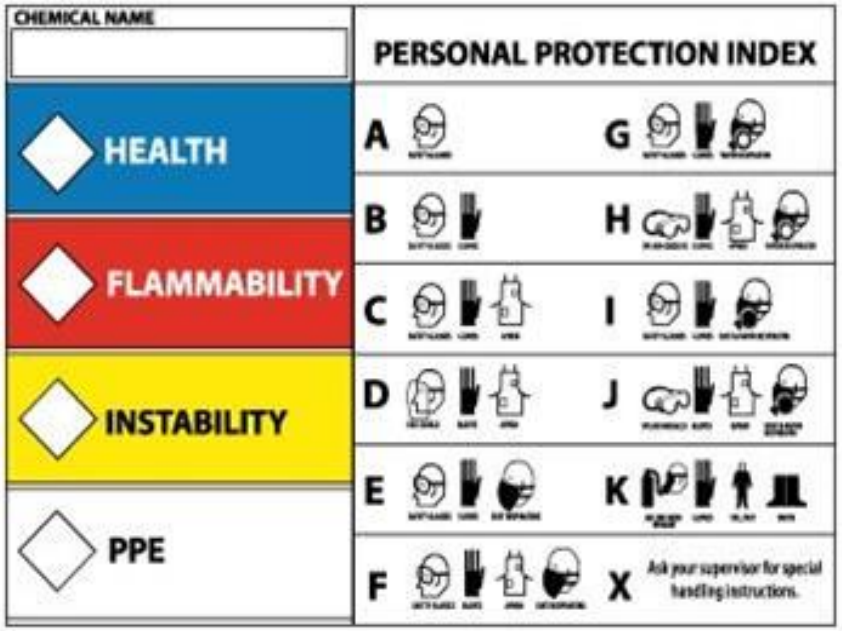
Red = Flammability

Yellow = Reactivity

White = PPE

Ratings on a scale of 0 to 4, with 4 being the most hazardous.

# HMIS (Hazard Material Information System) Label



# Labels Denoting Hazards




**ROUTE OF ENTRY**

- ☐ Eye Contact
- ☐ Inhalation
- ☐ Injection
- ☐ Skin Absorption
- ☐ Skin Contact

**CHRONIC HEALTH EFFECTS**

- ☐ No Chronic Health Hazard
- ☐ Carcinogen
- ☐ Dermatitis
- ☐ Irritant
- ☐ Mutagen
- ☐ Reproductive Toxin
- ☐ Sensitizer
- ☐ Teratogen

**PHYSICAL HAZARDS**

- ☐ No Physical Hazards
- ☐ Combustible
- ☐ Explosive
- ☐ Flammable
- ☐ Organic Peroxide
- ☐ Oxidizer
- ☐ Pressure Hazard
- ☐ Pyrophoric Liquid
- ☐ Radioactive
- ☐ Water Reactive

**TARGET ORGANS**

- ☐ Bladder
- ☐ Blood
- ☐ Bone Marrow
- ☐ Brain
- ☐ Cardiovascular System
- ☐ Eyes
- ☐ Gastrointestinal System
- ☐ Heart
- ☐ Kidneys
- ☐ Liver
- ☐ Lungs
- ☐ Mucous Membranes
- ☐ Musculo-Skeletal System
- ☐ Nervous System
- ☐ Reproductive System
- ☐ Respiratory System
- ☐ Skin
- ☐ Teeth

# Chemical Labeling- GHS

Following the GHS standard in addition to the chemical name, manufacturer's name, and contact information labels must contain the following elements for each hazard class associated with that chemical:

- **Pictogram** – a symbol to give a visual clue of the hazard class
- **Signal Word** (either 'Danger' or 'Warning')
- **Hazard Statement(s)**
- **Precautionary Statement(s)**

# Pictogram

**Pictograms** are symbols that convey health, physical and environmental hazard information.

**The pictograms on chemical containers must be a red diamond with a black GHS symbol inside. If the chemical has more than one hazard, multiple pictograms will be used.**

# Pictogram

- Flame (flammable or reactive)
- Flame over circle (oxidizers)
- Corrosion (corrosive to skin, eyes or metal)
- Gas Cylinder (pressurized gas)
- Exploding bomb (explosives)
- Exclamation Mark (health warnings)
- Skull & Crossbones (acutely toxic)
- Health Hazard (serious health hazards)
- Environment (environmental toxicity – not mandatory)

# Signal Words

In the **GHS**, two **signal words** are used to emphasize hazards and indicate the relative level of severity of the hazard.

**"Danger"** is used for more severe hazards.

**"Warning"** is used for less severe hazards.

# Hazard Statements

**Hazard Statements** are standard phrases that describe the nature of the physical, health, or environmental hazard. Hazard statements are also standardized and not subject to variation.

## Examples of GHS Hazard Statements

### Physical Hazard Statements

**H221: Flammable gas**
**H227: Combustible liquid**
**H271: May cause fire or explosion; strong oxidizer**
**H280: Contains gas under pressure; may explode if heated**
**H290: May be corrosive to metals**

### Health Hazard Statements

**H300: Fatal if swallowed**
**H302: Harmful if swallowed**
**H305: May be harmful if swallowed and enters airways**
**H312: Harmful in contact with skin**
**H317: May cause an allergic skin reaction**
**H320: Causes eye irritation**
**H330: Fatal if inhaled**
**H336: May cause drowsiness or dizziness**
**H340: May cause genetic defects** *(state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)*
**H350: May cause cancer** *(state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)*
**H360: May damage fertility or the unborn child** *(state specific effect if known) (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)*
**H362: May cause harm to breast-fed children**
**H370: Causes damage to organs** *(or state all organs affected, if known) (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)*

# Precautionary Statements

**Precautionary statements** are a set of standardized phrases that give advice on the correct handling of the chemical product.

## Examples of GHS Precautionary Statements

### General Precautionary Statements

**P101:** If medical advice is needed, have product container or label at hand
**P102:** Keep out of reach of children
**P103:** Read label before use

### Prevention Precautionary Statements

**P201:** Obtain special instructions before use
**P222:** Do not allow contact with air
**P223:** Keep away from any possible contact with water, because of violent reaction and possible flash fire
**P232:** Protect from moisture
**P284:** Wear respiratory protection

### Response Precautionary Statements

**P302:** IF ON SKIN:
**P350:** Gently wash with soap and water
**P351:** Rinse cautiously with water for several minutes
**P302+334:** IF ON SKIN: Immerse in cool water/wrap in wet bandages
**P302+350:** IF ON SKIN: Gently wash with soap and water

### Storage Precautionary Statements

**P402:** Store in a dry place
**P410:** Protect from sunlight
**P411:** Store at temperatures not exceeding … °C/… °F
**P412:** Do not expose to temperatures exceeding 50 °C/122 °F
**P420:** Store away from other materials

### Disposal Precautionary Statements

**P501:** Dispose of contents/container to …

# Formaldehyde

**Formaldehyde** is a highly flammable gas or combustible liquid. It is a suspect carcinogen in humans. Formaldehyde has been linked to cancers of the lung, nose, and throat. It is also considered a possible mutagen and teratogen, meaning it has been shown to impair DNA in laboratory experiments and may contribute to congenital defects. Formaldehyde is a strong sensitizer, irritant and corrosive, so the liquid or vapor can cause eye and skin burns. The eyes are especially vulnerable to the corrosive effects of formaldehyde. An air concentration of 2 ppm is quickly irritating to the eyes, causing redness, pain and blurred vision, while 20 ppm can cause permanent clouding of the cornea or blindness after only one exposure.

Exposure to formaldehyde can cause acute or chronic health effects. The degree of impact is related to the level and duration of exposure. Persons with a history of skin, eye, liver, kidney or respiratory disorders may be at increased risk from exposure, even at lower levels. Formaldehyde is most often seen as formalin to preserve tissue and is a 10% solution.

# Safety Data Sheet (SDS)

- **Safety Data Sheets (SDS) (previously called Material Safety Data Sheets (MSDS)** are safety documents which provide detailed information about the physical and health hazards of chemicals.
- Manufacturers are required to create SDS' for every hazardous product and send one with the first shipment to the purchaser.
- A laboratory must obtain a SDS for all hazardous chemicals used in the laboratory. A hard copy or electronic version of the SDS must be accessible to the employee.

# Safety Data Sheet (SDS)

- Our "**Hazardous Chemical Inventory**" is a list of chemicals that includes an evaluation of the carcinogenic potential, reproductive, and acute toxicities. This document is updated annually to include new chemicals and changes with chemical use in all major departments of the lab. This document is in Proquis and an updated hard copy is stored in each major department (see blue folder) for easy access and reference.

# Safety Data Sheet (SDS)

**Safety Data Sheet**
**16-section Standard Format**

1. Product and Company Identification
2. Hazards Identification
3. Composition/information of Ingredients
4. First Aid Measures
5. Fire Fighting Measures
6. Accidental Release Measures
7. Handling and Storage
8. Exposure Controls and Personal Protective Equipment
9. Physical and Chemical Properties
10. Stability and Reactivity
11. Toxological Information
12. Ecological Information
13. Disposal Considerations
14. Transport Information
15. Regulatory Information
16. Other Information

# Fume Hoods

**Fume Hoods:** Ventilation devices used to prevent toxic, flammable, or carcinogenic vapors from entering the ambient air. They also provide a barrier which protects laboratory staff from hazardous chemical splashes, sprays, or fumes. Considered an engineering control for worker protection.

# Fume Hood Locations

- Rm 2640 (back Micro Room) – green hood on left
- Rm 2641 (morgue)
- Rm 2633 (Histology)
- Rm 2637 (Histology)
- Rm 2638 (gross room) – at grossing station, please wear goggles since this is an “open” fume bench.

  There is a small counter top “fume extractor” available as well.

# Fume Hood

# Fume Hood

# Biological Safety Cabinet (BSC)

**Biological Safety Cabinet** (BSC): a safety cabinet that serves as a primary containment device in laboratories working with infectious agents. These units are designed to protect the operator from biohazards and to protect the internal materials from external contamination. This is accomplished through the use of HEPA filters. The HEPA filtered air is exhausted either through the Medical Center Vacuum and Air Conditioning System (HVAC) or is discharged to the room.

# BSC Locations

- Rm 2653 (BSLIII Room)
- Rm 2640 (back Micro Room)
- Rm 2638 (gross room)
- Rm 2634 (Cytology)
- Rm 2600 (main lab)
- Rm 2655 (Micro)
- Rm 2618 (Flow)

# Hood Operation

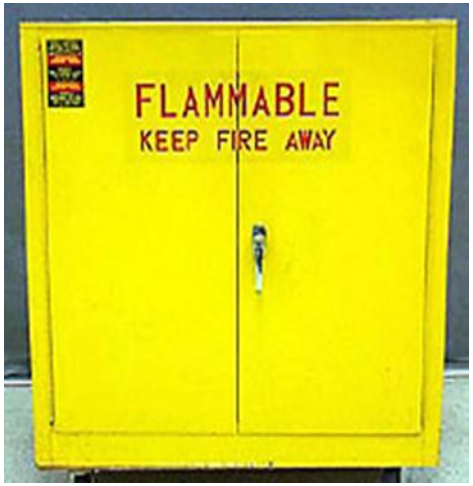
**Here are some tips for proper operation of a hood:**

- Ensure the exhaust blower is running at least 5 min before and after use to purge any contaminants.
- Keep the interior of the hood as uncluttered as possible
- Perform work as far back in the hood as possible, but always work back at least 6 inches from the front of the hood
- Keep the sash at the correct height while in use
- Avoid cross drafts or air disturbances in the hood
- Keep the vents free of obstruction
- Keep hood surfaces clean
- Ensure certifications are current.
- Air flow is within range if using a magnehelic gauge or vaneometer.

# Flammable Cabinet

**Proper storage of flammables and combustibles includes:**

- Store away from heat, light, and ignition sources
- Store away from incompatible materials (reactive substances and oxidizers)
- Store in approved flammable storage cabinets



# Acid and Base Cabinet

**Proper storage of acids and bases:**

- Store below eye level
- Can store acid chemicals in an acid cabinet, base chemicals in a base cabinet, or in a “corrosive” cabinet on a low shelf.
- Store away from incompatible materials.  DO NOT STORE ACIDS AND BASES TOGETHER.

# Compressed gas cylinders

Compressed gas tanks should be stored away from flammable materials, have safety covers on when pressure regulators are unattached and transported chained to a hand cart or dolly. Compressed gas cylinders should be secured upright to the wall or other stable source.

Note: Our only gas cylinder is in Micro. When empty, it is picked up by appropriate hospital staff.

# Chemical Definitions

**Irritants** cause pain or reddening at area of contact and may cause headache, itching, dryness or coughing. Common irritants are solvents, acetic acid and ammonia.

**Corrosives** cause immediate action to human tissue - blistering and burns on skin, and fumes can damage respiratory passages. Common corrosives are sulfuric and hydrochloric acid.

**Sensitizers** are chemicals that cause allergic reactions.

**Flammable liquid** any liquid having a flash point below 100ºF (37.8ºC). Considered Class I Flammables and are divided into Class IA, Class IB, and Class IC based on flash point and boiling point.

**Combustible liquid** any liquid having a flash point at or above 100ºF (37.8ºC). Divided into Class II and Class III based on flash point and boiling point.

**Acute Toxicity** adverse effects resulting from a single exposure to a substance (short-term)

**Chronic Toxicity** adverse effects resulting from multiple exposures to a substance over time (long-term).

**Reproductive Toxicity** adverse effects on sexual function and fertility in adult males and females, as well as adverse effects on development of the offspring per OSHA.

**Carcinogen** agents that can cause cancer per OSHA (formaldehyde).

# Spill Response

**Biohazardous spill -** an unplanned release of potentially infectious material into the work environment

(Refer to Procedure for Blood and Body Fluid Spill SA-113-019):

To clean up a biohazardous spill, follow this general procedure:

**a)** Wear appropriate PPE: gloves, lab coat, and eye protection.

**b)** Contain spill with absorbent materials.

**c)** Wet spill with disinfectant. To minimize aerosols, pour disinfectant around the perimeter of spill and work toward the center. Let sit for the required contact time.

**d)** Remove absorbent material and broken glassware using mechanical means – dustpan/broom. Deposit into a biohazard bag or sharps container.

**e)** If a second cleaning is necessary, apply disinfectant a second time and blot up after sufficient contact time.

**f)** Biohazard spill kits, if available, are kept close to the chemical spill kits.

# Spill Response

## Procedure for Chemical Spill:

(Refer to Chemical Hygiene Plan and local medical center policy)

Only specific amount of chemicals needed for a procedure should be used. Large containers should be stored in safety cabinets.

- **Minor spills** are considered an amount normally worked with and < 1 Liter. Minor spills may be cleaned up immediately by laboratory personnel wearing appropriate PPE. To clean up a small spill, go to nearest spill kit and follow stated procedures. Obtain SDS. Dispose of in bag from spill kit (not a biohazard bag) and place in flammable cabinet in Rm 2629. Please call Safety for pick-up @ x46490.
- **Large Spill** - considered significant and can result in use of emergency shower. Evacuate room and notify supervisor or Graphics (weekends/off hours). Obtain SDS for chemical. In general, spills of carcinogenic, reactive, toxic or reproductive hazard should be cleaned up by specially trained personnel. Formalin spills – evacuate, close door, and post sign “Danger, Formaldehyde, Irritant, & Potential Cancer Hazard. Authorized personnel only.” Call Industrial Hygienist or Graphics on weekends/off hours and notify supervisor as stated above.

# Waste Disposal

**General waste** – consists of paper, paper towels, gloves, cardboard, gauze, kimwipes, for example, which are not visibly contaminated with blood/body fluids. This is considered non-infectious waste and shall be disposed of in clear plastic bags which are housed in general waste containers or recycled.

**Chemical Waste -** waste characterization approval by GEMS/Industrial Hygienist to dispose in sewer system.

**Biohazard Waste –** approved by medical center to dispose in sewer system.

**Biohazard** - Contaminated items (specimen containers, blood collection tubes, sample cups) with blood and other potentially infectious material in quantity that could drip, pour, be squeezed or flaked should be disposed into a rigid biohazard container with biohazard bag, which will be disposed of as regulated medical waste.

Lids are placed on top of biohazard containers when not in active use.

# Waste Disposal

Note: When working with CJD specimens the waste generated should be collected, labeled and the medical center safety officer contacted for waste pick up guidance. It is recommended that the laboratory utilize disposable equipment (or designated equipment). In addition, a counter top liner with a plastic backing should be used to eliminate the need for using the special clean up procedure, longer timing requirements, in the event of a spill.

# Chemical Waste Disposal

**Hazardous chemical waste** – any material that poses a health or physical hazard. These are materials, which on intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical treatment is given. These chemicals pose a potential danger to one's health and safety because of the chemical(s) inherent properties. Any chemical that possesses one or more of the following characteristics: ignitability, corrosivity, reactivity, or toxicity is considered RCRA hazardous and should not be disposed of in the sewer system. RCRA stands for Resource Conservation and Recovery Act (1976) – Environmental Protection Agency's waste management regulations governing the disposal of solid and hazardous waste (Title 40 Code of Federal Regulations).

All waste streams have been evaluated by the GEMS Coordinator/Industrial Hygienist and proper waste collection implemented.

**Always consult SDS for proper waste disposal or address questions to the laboratory safety officer.**

# Ergonomics

**Ergonomics** is a discipline that involves arranging the environment to fit the employee. Following ergonomic principles helps reduce stress and eliminate many potential injuries and disorders associated with the overuse of muscle, bad posture, and repeated tasks. This is accomplished by designing tasks, work spaces, controls, displays, tools, lighting, and equipment to fit the employee's physical capabilities and limitations.

**Laboratory Ergonomic Stressors include:**

- routine laboratory activity (pipetting, use of Biological Safety Cabinets (BCS) and Fume Hoods , microscopy, microtomy, lifting, and materials handling)
- functionality of the workspace (including laboratory floor matting, bright lighting, and noise generation)
- equipment design (computer keyboards and displays, workstations and chairs).

# Ergonomics

Common problems in laboratories and offices involve hand exertions such as pipetting, opening and closing vials and using excess force when writing or typing. To reduce forceful exertion:

- Select equipment that requires less force to activate
- Use only the force necessary to activate or use an item
- Avoid holding objects for long periods
- Avoid pinch grips – use your whole hand when grasping something
- Use both hands to grasp an object
- Keep wrists straight when grasping, as grip strength decreases when wrists are bent

Lifting injuries are one of the most common RSI (Repetitive Stress Injuries). When possible, eliminate lifting by using mechanical assistance such as carts or slide objects instead of lifting them. For safer lifting:

- When lifting any object, correct posture should be applied: i.e. bend knees not back, no twisting, firm grasp, stand close to object. it is important to bend at the **knees and hips and lift with legs and buttocks.**
- Additional items that may include mechanical aids should be applied: clear pathways, getting help either mechanical or person to assist with overhead lifting, obtaining help with heavy or difficult items.

# Accident / Incident Exposure

If you have an accident/incident, report it immediately to your supervisor. Obtain an "Authorization for Medical Treatment" form signed by your supervisor and then go to Employee Health Clinic (days 08:00a.m. – 04:30p.m.) or the Emergency Department for evaluation and treatment if appropriate.

**If a Sharp Exposure/Splash/Bloodborne Pathogen Exposure** occurs you must be seen by Employee Health/ED within **2 hours** in case blood work is required/prophylaxis treatment given.

If your supervisor is unavailable, contact the nursing supervisor (4## 4102) or AOD (x 42038) to obtain signatures on the Authorization for Medical Treatment form before reporting to EHC or ED.

# ASISTS

**All accidents are reported in the facility computer system program entitled, "Automated Safety Incident Surveillance Tracking System (ASISTS).**

**Incidents should be entered within 48 hours of occurrence and the incident report (2162) should be filled out as complete and detailed as possible.**

An accident is an unanticipated occurrence, which has or could have caused personal injury. For both the prevention of similar accidents and for complete documentation of the employee injury, accidents (injurious or non-injurious (such as a clean needle stick) must be reported in accordance with OSHA regulations. Accident reports are filed to ensure employee protection, tracking to monitor problem areas, and for training purposes.

# Laboratory Accidents

**Eye (Blood/Body Fluid Splash):**

1. Proceed to eyewash.
2. Flush for 15 minutes.
3. Notify Supervisor & report to Employee Health/ED.
4. Complete Accident report.

**Needlestick/Cut = Bloodborne Pathogen Exposure:**

1. Proceed to sink.
2. Force bleeding.
3. Flush and cleanse.
4. Notify supervisor, report to Employee Health/ED.

# Laboratory Accidents

**Chemical Splash:**

1. Proceed to eyewash.
2. Flush for 15 minutes.
3. Consult SDS.
4. Notify supervisor, report to Employee Health/ED.
5. Complete accident report.
6. Contact lenses should be removed as soon as possible.

**Skin – Chemical Splash/Spill:**

1. Proceed to safety shower and remove contaminated clothing if possible.
2. Flush/dilute with copious amounts of water.
3. Consult SDS.
4. Notify supervisor and report to Employee Health/ED.

# Safety Shower / Eyewash Station

**REMEMBER YOUR VISION MAY BE IMPAIRED AND YOU MAY BE PANICKED WHEN YOU NEED THESE FACILITIES. KEEP THIS IN MIND WHEN LEARNING THE LOCATION AND USE OF THE SAFETY SHOWER AND EYEWASH STATION.**

**Instructions are posted at each station.**

**Time is of the essence and a few seconds may mean the difference between permanent injury and full recovery.**

# SDR – Safety Deviation Report

**Safety Deviation Report (SDR)** - A Safety Deviation Report can be initiated by any individual in Pathology and Laboratory Medicine Service who observes an instance in which established safety policies/ procedures are not being followed:

- Form should be completed by PLMS staff when they see that someone is not following safety guidelines.
- Form should be completed by PLMS staff when there is a safety problem in the laboratory.
- Submit  form to supervisor or Safety Coordinator.

# Fire Safety

**Based on fuel type there are four major classes of fires:**

Class A: Ordinary combustibles such as wood, cloth, paper, cardboard, many plastics, rubber, dust, etc. This is the most common type.

Class B: Flammable liquids such as oils, gasoline, solvents, paints or grease. Only the surface vapors burn because oxygen cannot penetrate the Depth of the fluid.

Class C: Energized electrical equipment such as wiring, fuse boxes and motors.

Class D: Combustible metals such as sodium, magnesium, aluminum or titanium.

**A multipurpose fire extinguisher (ABC) can be used on all 3 major types of fire. These are the most common extinguishers in our facility.**

# Fire Safety

**The Fire Alarm system consists of 4 main components:**

- Fire alarm pull station – located adjacent to every stairwell.
- Indicators such as voice announcements, bells and lights.
- Smoke detectors.
- Water flow devices (sprinklers).

# Fire Safety - RACE

**RESCUE:** Remove persons from area.

**ALARM:** Pull alarm and call 911 to reach VA police.

**CONFINE/CONTAIN:** Confine by closing all doors.

**EXTINGUISH/EVACUATE:** Extinguish small fire if Possible and Evacuate.

**Fire Alarm Pull Stations are located by any stairwell. The closest one is by Stairwell #2 across by Micro.**

# Fire Safety - PASS

**Extinguish:**

**P**ull the pin

**A**im the nozzle at the base of the fire

**S**queeze the handle

**S**weep the nozzle from the side to side

# Fire Safety - DRILL

- The drill will be announced as an “ALL HOUSE FIRE DRILL” by the police dispatcher
- All announcements made via the PA system will begin with “May I have your attention please” and then the “Code Red” will be announced along with the location.
- The “ALL HOUSE FIRE DRILL” announcement is your cue to participate in the fire drill.
- Always evacuate horizontally to the other side of the hospital, unless unsafe.  Never evacuate vertically unless the Fire Dept tells you to do so.
- Do not use elevators.

# Fire Evacuation Routes

Fire Drill/alarm for 2A or B:

When the drill/alarm is announced for 2A or B, you send one person to that area to offer assistance. The rest of the staff remains in place as A or B will be coming to C wing as their point of refuge.

Fire Drill/alarm 2C:

Evacuate to A wing.

Fire Drill/alarm 1C or 3C:

Send one representative to the area to offer assistance. The rest of staff remains in area.

Fire DRILL in any other area of the hospital:

When announced as an ALL HOUSE FIRE DRILL by VA Police, respond as though the fire is in your area and evacuate to A wing; 2A and B should also be evacuating to enact their fire plan and will come to C wing; so you will be crossing in the corridor.

Fire ALARM in any other area of the hospital:

Remain in your area and wait for further instruction. The VA Police should not be making any announcement and the alarm should continue until they address it.

# Electrical Safety

**New electrical items are inspected by Biomed for safety and a preventative maintenance sticker is placed on the appropriate equipment. Notify your supervisor if there is equipment in your area that appear to need servicing or repairs.**

**Ways to prevent Shock:**

- Do not remove the wall plug by pulling on the cord.
- Do not use loose/damaged connections or frayed power cords.
- All electrical equipment shall have 3-prong plugs – grounded.
- Electrical shock or leakage current-immediately take it out of service
- Use of extensions are prohibited.
- Use of portable heaters, toasters, hot plates are prohibited.

**First-Aid/Electrical Burns & Shock**

- Turn off the electrical circuit.
- If the circuit cannot be disconnected, disengage victim by using a piece of wood (i.e. broom handle) or another non-conductive object. Avoid contact with the victim or electrical source.
- If victim is unconscious begin CPR.

# Disaster preparedness

For information on Emergency or Disaster events please refer to our Hospital “Emergency Response Guide” posted on department bulletin boards and in various areas throughout the laboratory.

Another reference would be our “Emergency Response and Evacuation Plan” found in Proquis SA-695-001. A hard copy is kept in the Safety binder in the Central Processing area of the laboratory.

# Emergency Telephone Numbers

Posted on bulletin boards in main lab and on Microbiology, Anatomic Pathology, and Safety bulletin boards in hallway.

- 911 – transferred to Police Desk
- Graphics (Engineering/FM)– x41010
- EMS – x44367; x44517; 44518
- Hospital Safety Manager – x42934
- Industrial Hygienist – x42933
- Hazardous waste pick up – x46490; x42879
- Hospital Safety cell phone – 414-303-8615
- AOD – x42038
- Housekeeping – x42177; x42178

# References:

OSHA Laboratory Standards:

- **Bloodborne Pathogen Standard** 29 CFR 1910.1030
- **Occupational Exposure to Hazardous Chemicals in Laboratories Standard** 29 CFR 1910.1450
- **The Personal Protective Equipment (PPE) standard** 29 CFR 1910.132
- **The Eye and Face Protection standard** 29 CFR 1910.133
- **The Respiratory Protection standard** 29 CFR 1910.134

VISN Safety Documents- Proquis/Safety Binder

Zablocki VA Medical Center memorandums

CDC website www.cdc.gov; EPA website www.epa.gov