Laboratory Safety Orientation and Training

Department of Pathology and Genomic Medicine

Created 5/25/2017, Version 1



Safety Officers





















Bazile.

Heather

Hendrickson.

Chair of Safety Committee

Safety Standard Operating Procedures



- Safety standard operating procedures to read
 - Sharepoint link: <u>safety procedures</u>

✓		Name		Last Modified	Modified By	Approval Status
		HMHLAB054 Bloodborne pathogen Policy	***	July 25, 2016	☐ Henry, Greg	Approved
	W	LAB 020 Emergency Preparedness Plan	***	March 21	□ Vega, Georgia A.	Approved
	W	LAB 021 Fire Plan	***	March 21	□ Vega, Georgia A.	Approved
	×	LAB 022 Attachment - Carcinogens, Reproductive Toxins and Acute Toxins	***	December 30, 2015	☐ Hinojosa, Manuel M.	Approved
	W	LAB 022 Hazardous Chemicals	***	March 21	□ Vega, Georgia A.	Approved
		LAB 050 Latex Allergy Policy	***	March 21	□ Vega, Georgia A.	Approved
		LAB_040_Ergonomics_and_Indoor_Air_Quality	***	March 21	□ Vega, Georgia A.	Approved
	W	Lab032 LAB ultraviolet policy	***	March 21	□ Vega, Georgia A.	Approved

HMH Environmental Health & Safety



Intranet link:

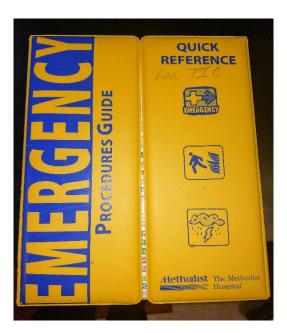
http://www.tmh.tmc.edu/dept/Safety/home.htm







- Link to access this guide on the intranet:
- http://www.tmh.tmc.edu/dept/S afety/Emergency_Guide_Index.h tm



- Why is this book useful?
 - Useful as a reference for many different scenarios.
 - Eg. Your co-worker Mary is complaining of heart pain and suddenly falls. What do you do? Refer to the cardiac arrest section of the yellow book.
- Location refer to your specific safety representative.





Emergency Code Name	Emergency Code Meaning			
Red	Fire			
Blue	Cardiac Arrest			
Pink	Infant/Child Abduction			
Orange	Bomb Threat			
Purple	Security Needed			
Yellow	Disaster Active Shooter Severe Weather			
Silver				
Grey				
Gold	Accreditation			

Emergency Disaster plan



- Procedure: <u>LABO20</u>
- Employee's role in the event of a disaster
 - Lab section specific
 - Refer to your manager for your role in the event of a disaster.
- What is Ride out versus Recovery?
 - Ride out team: According to each lab section's staffing needs, this team comes prepared to stay for the duration of the incident or until released.
 - Recovery team: Those not on the ride out team come to relieve the recovery team.
 - Periodically call into Employee Disaster Information line, 713-441-6733, for updates

Emergency Management



- Link to the HMH Emergency Management Plan
- Link to LABO20 Emergency Preparedness Plan
- Scenarios
 - Fire
 - Mass Casualty
 - Bomb threat
 - Active Shooter
 - Bioterrorism

Personal Protective Equipment



- Liquid impervious lab coats
- Nitrile gloves (latex free)
- Face shields
- Goggles/Safety glasses
- Gooseneck safety shield with magnetic base
- Fume hoods
- Biosafety cabinets
 - BSL2
 - BSL3 (microbiology only)
- Powered air purifying respirator (PAPR)

Why is PPE important?



- Protection from:
 - Exposures
 - Splashes
 - Cuts

- That can lead to:
 - Blood borne pathogen exposure
 - Infectious aerosols
 - Infectious pathogens
 - Skin, eye or face injury

Hand Washing & Hand Hygiene Policy



- Why is hand washing important?
 - It is one of the most important steps in prevention of spreading pathogens to other surfaces in the hospital, hospital acquired infections and food contamination. Proper hand washing technique removes infectious organisms present on the hands.



Link to Hand Hygiene Policy



Infection Prevention

- Why is it important to remove gloves before touching door handles?
 - To prevent the spread of infectious fluids or blood borne pathogens to colleagues, patients and visitors.
- Eating, drinking, smoking, handling contact lenses, applying cosmetics and storing food for human use are not permitted in the laboratory work areas.



Infection Prevention



- Do not dispose of empty cups or food trash in lab work areas.
 - This is a <u>HMH policy and best practice</u> that eliminates the question of whether or not our team is following the no eating or drinking in the work area policy.

 Dirty lab coats or other personal protective equipment may not be worn outside of the laboratory.

- Supplies must be stored at least 4" off the floor.
 - This is to allow adequate clearance for the floors underneath to be kept clean and free of pests.





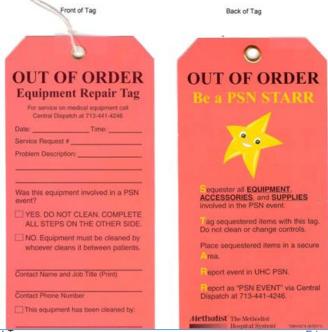
Department of Pathology and Genomic Medicine Laboratory Safety Orientation PC/PS104 and HMLAB002

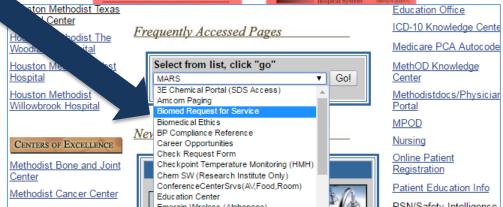


Equipment Problems

- Biomed is responsible for the maintenance and repair of all medical equipment.
- When there is a problem with medical equipment, biomed needs to be notified.
- A service request can be made on the intranet under "Frequently Accessed Pages" or call 713-441-4246 Central Dispatch.

PSN STARR TAG





Department of Pathology and Genomic Medicine Laboratory Safety Orientation PC/PS104 and HMLAB002



Equipment Problems

PSN STARR tag:

- Date and time of the request
- Service request number which will be provided by Central Dispatch or intranet request.
- A description of the problem.
- If the equipment was involved in a PSN.
- Name, title and contact number of the person making the request.
- Equipment has been cleaned and by whom.

PSN STARR TAG





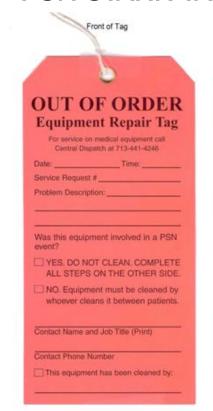
Department of Pathology and Genomic Medicine Laboratory Safety Orientation PC/PS104 and HMLAB002



Equipment Problems

 If the equipment has been involved in a PSN event, the equipment should not be cleaned and none of the controls or settings should be changed. Notify supervisor of PSN event.

PSN STARR TAG







Red Outlets



 These outlets provide emergency power by generator. It takes 15-30 seconds to switch to generator power.



• Fire Sprinkler 18-inch rule

-The purpose of the "18-inch rule" is to prevent storage or any other obstruction from interfering with the spray of water from a sprinkler head during a fire.

Hallway Clearance

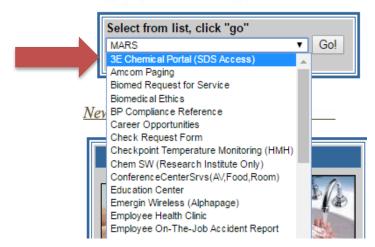
-Limited items located in the hallway, should be on one side and mobile.

3E SDS Online SDS



- What is 3E SDS Online?
 - Online chemical search portal
 - Where the workplace chemical list is located

- How do I access 3E SDS Online or SDS sheets?
 - HM intranet home page frequently accessed pages menu <u>Frequently Accessed Pages</u>



- Call 1-800-451-8346.
 - All lab phones should have a sticker with this phone number.

Spills



Prevention

Prevention is the key to ensure a healthy and safe work environment. The following tips can help in prevention of spills.

- Do not over fill the containers
- Secure lid at all times
- Chemicals are to be kept in the biohazard safety cabinet and <u>never</u> stored on the floor.
- Hazardous chemicals outside of flammable or chemical cabinets must be stored in a secondary container.





Cleaning Up Spills

- Contain and absorb <u>small spills</u> with appropriate absorbent. Discard in red biohazard bag.
- For <u>large spills</u> that you can't clean yourself, isolate and notify the Call Center at 713.441.4246 or ext.14246
- Please refer to Yellow Book for any additional questions.

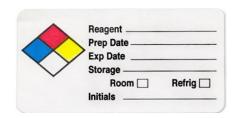




Hazards Communication



NFPA labels



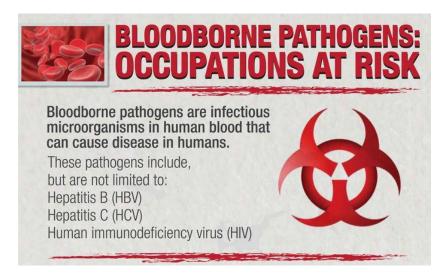
- Diamond shaped label used by the laboratory to quickly and easily identify the risks posed by hazardous materials. This helps determine what, if any, special equipment should be used, procedures followed or precautions taken during the initial stages of an emergency response.
- This information can also be found on the 3E Online on the hospital intranet page.

Exposures



- Link to policy tech IC40 Exposure control plan

 (http://hhvappdcsp01/dotNet/documents/
 ?docid=25181&LinkedFromInsertedLink=true)
- Infection control cell phone (713-441-1391)
- After 4:00 pm please contact Infection Control at 713-404-7106 pager or 713-306-7848 cell)



- During EHC hours
 - Employee goes directly to Clinic
- After hours
 - Employee notifies (TIC, Chief Tech, MGMT, Director or Medical Director)
 - Infection Control notified, Employee goes to ED
 - Blood is collected and tested
 - Employee follows up with EHC next business day
- Obtaining Source blood
 - During EHC hours; Clinic is responsible
 - After hours; Infection Control,
 Operations Admin or Nurse on floor collect blood
- How to remain Confidential during after hours
 - Refuse ED draw; Report to EHC next business day

Eye Wash Systems & Emergency Showers

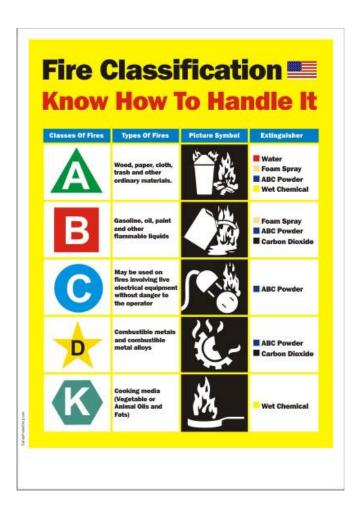


- Eye Wash systems
 - Weekly maintenance check required
 - Documented by each laboratory section

- Emergency Showers
 - Monthly maintenance check required
 - Documented by FMS

Fire Safety





Steps to dealing with a fire

- A. Is there visible smoke or fire?

 Activate (R-A-C-E) by pulling the nearest accessible fire pull station

 Alarm:
 - 1) Decide to Fight or Flee
 - 2) From a safe location call either the:
 - 1) Fire Operator (Code Red): 713-790-3300
 - 2) Or the Fire Department: 9-911 Contain: Close all the doors Extinguish or Evacuate: Choose the correct extinguisher (if fighting the fire).
- B. Burning Smell, but no smoke? Notify Security at 713-441-9511

Fire Safety





Know your evacuation routes and meeting points!

- Core Laboratory The Tech-in-Charge, Chief Tech, Specialist and/or Manager is responsible for checking the hallways for fire and reporting the status to the staff in the laboratory. If evacuation is indicated, the staff will exit the lab at the nearest exit and meet at place of refuge (The Commons Waterfall on Bertner Street). The staff will remain at the place of refuge until notified of "all clear".
- HLA Laboratory The safety representative and/or designee is responsible for checking the hallways
 for fire and reporting the status to the staff in the laboratory. If evacuation is indicated, the staff will exit
 the lab at the nearest exit and meet at place of refuge (Crane Garden). The staff will remain at the
 place of refuge until notified of "all clear".
- Diagnostic Immunology and Flow Laboratory The safety representative and/or designee will check
 the area and notify the staff of the situation. If evacuation is indicated, the staff will exit the lab at the
 nearest exit and meet at place of refuge (Crane Garden). The staff will remain at the place of refuge
 until notified of "all clear".
- Cytology /Histology- The staff evacuate the area to the place of refuge (ground level between TMH and garage 1). The staff will remain at the place of refuge until notified of "all clear".
- LMIS and Administration The staff evacuate the area to the place of refuge (ground level between Fondren-Brown and Neurosensory Center). The staff will remain at the place of refuge until notified of "all clear".
- Smith 5 Out Patient Laboratory The staff and patients evacuate the area and meet by the stairwell (place of refuge) and wait for further instructions. A staff member checks all draw rooms, bathrooms and waiting area to make sure that all has been evacuated. The staff will remain at the place of refuge until notified of "all clear".
- Blood Bank The Manager or designee (coordinator or specialist) is responsible for checking the
 hallways for fire and reporting the status to the staff in the laboratory. If evacuation is indicated, the
 staff will exit the lab at the nearest exit and meet at place of refuge (The Commons Waterfall on Bertner
 Street). The staff will remain at the place of refuge until notified of "all clear".
- Microbiology The staff will evacuate the area and report to the place of refuge (The Patio on Fannin St.). The staff will remain at the place of refuge until notified of "all clear".
- Anatomical Pathology The staff will evacuate the area to the place of refuge (between Garage 1 and the main building). The staff will remain at the place of refuge until notified of "all clear".
- Main 9 If evacuation is necessary, the staff will proceed to the place of refuge (Crain Garden) until the "all clear" is given.
- Blood Donor Center and Lab Administration the staff will evacuate to the area north of the Brown
 Building and meet in the Neurosensory Building exterior crosswalk. The staff will remain at the place of
 refuge until notified of "all clear".
- OPC Rapid Response Lab and Frozen Lab Will leave the lab and wait by the stairwell for further
 instructions. If evacuation is necessary, then they will go down the stairs and meet at the corner of
 Main and Freeman on the walking trail.





 Medical gas cylinders should be kept in an appropriately secured containment, upright, dry and in a clean condition.

- Should the location of emergency oxygen shut off be identified and communicated to departmental staff?
 - In the event of an emergency, only trained staff within HMH can turn off the medical gases and only if it is safe to do so.

Electrical Safety



- Houston Methodist Hospital requires power strips that have a circuit breaker.
- List of approved power strips.
 - Tripp-Lite PS-602-HG
 - Tripp-Lite PS-606-HG
 - Tripp-Lite PS-615-HG
 - Leviton 5300-HTS (surge protected)
 - Leviton 5300-H15 (surge protected)
 - Leviton 5300-HT2 (surge protected)
- Extension cords shall not be substituted as permanent wiring.
- Power strips cannot be daisy chained.



Biohazard Bins



All Biohazardous containers must be properly labeled in accordance with HMH waste management procedures

Biohazard Bins

A. Place 2 red Bio-Check Incineration bags in a biohazard bin and pour one bottle of the adsorbent material Isolyser Iso-Quick into the bin







B. Medical Waste that **SHOULD** go in Biohazard Bins:

All used gloves All PPE

Saturated bandages Blood-saturated items

Saturated gauze Visibly bloody plastic tubing,

Saturated bandages Closed disposable sharps containers

C. <u>NEVER</u> put the following items in the red incineration bags:

Medication Garbage

Loose sharps Radioactive waste

Batteries Hazardous & chemical waste Compressed gas cylinders Fixatives & preservatives

- $\ensuremath{\mathsf{D}}.$ Never overfill the incineration bags. Only fill three quarters full.
 - *For specific workstations that discard heavy biohazardous waste, the fill line will be adjusted to a lower level (2/3 or 1/2 full).
- E. Tie off the top of Bio-Check Incineration bags when full.
- F. Close the gray biohazard bin.
- G. For the Core Lab, deliver the gray biohazard bin to room D214
- H. For other labs, call dispatch at 713-441-4246 to pick up biohazard bins.
- I. Phone dispatch at 713-441-4246 to request more gray biohazard bins or Bio-Check Incineration Bags.

Sharps



What is appropriate to discard in sharps containers?

- All supplies with needles
- Disposable scalpels
- Glass slides
- Broken glass tubes
- Plastic pipette tips





- Sharps containers are never to be overfilled
- All lab sections are on a weekly replacement schedule but if many sharps containers are full:
 - Call dispatch at 713-441-4246 to request sharps container replacement





Corridor Etiquette

- "Clear hallway is a safe hallway"
- -There is unobstructed egress of at least 4 feet from one end of the area to the other.
- -Equipment or other objects do not block life safety systems such as: fire extinguishers, pull stations, fire exits, fire doors, medical gas shut off valves.



Life Safety

Decoration Safety

- -Christmas tree are to be artificial and flame resistant.
- -No lit candles, open flames, or spark producing devices are to be used as decorations.
- -Electric lights or decorations are acceptable only if they are labeled with a U.L. or F.M. approval.
- -Do not install any decorations within 18 inches of the ceiling.

Accreditation



AABB Accreditation

- Facilities and Safety
 - The BB/TS shall have policies, processes, and procedures to ensure the provision of safe environmental conditions.
 - The facilities shall be suitable for the activities performed
 - Safety programs shall meet local, state, and federal regulations, where applicable.
- Safe Environment
 - The BB/TS shall have processes to minimize and respond to environmentally related risks to the health and safety of employees, donors, volunteers, patients, and visitors.
 - Suitable quarters, environment, and equipment shall be available to maintain safe operation

- Biological, Chemical, and Radiation Safety
 - The BB/TS shall have a process for monitoring adherence to biological, chemical, and radiation safety standards and regulations, where applicable
- Discard of Blood, Components, Tissue, and Derivatives
 - Blood, blood components, tissue, and derivatives shall be handled and discarded in a manner that minimizes the potential for human exposure to infectious agents



Accreditation



ASHI Accreditation

- According to OSHA, all of the US labs are required to have access to updated MSDS Manual.
 - There is a yellow sticker on every phone in the lab that contain the phone numbers of SDS. Whenever anyone have question on certain chemical, they can call the number and have the data, fax, e-mail, or read it over for you by the phone
 - The Data is also available on the Houston Methodist Hospital Intranet
- Training programs that review the safety requirements for "blood-borne pathogens" including use of personal protective equipment will be provided in the Safety orientation that given to all of the new employees and visitors.
 - It is very important to don the PPE while collecting, transport, storage, and handling of blood and tissue specimens
- All labs must have a policy that describes its plan to respond to an internal and external disaster's impact on laboratory operation
 - It is recommended the lab to develop one or more written agreements with outside laboratories capable of accepting transferred tests in the event of an internal or external disaster.

- During the natural disaster, all labs need to make sure the emergency power supplies are available for the essential testing equipment and freezers to keep the lab work going
- The laboratory's floor plan and traffic flow must ensure that amplified material cannot be return to a pre-amplification area
 - Everyone needs to use the **dedicated** lab coats, gloves and disposable supplies in the pre-amplification area.
 - It is also very important to know the PPE that were used in the pre-amplification area do not be taken to the post area and vise versa.
 - All of these are to ensure our own safety to the exposure to the specimens and avoiding cross contamination
- All of the laboratories are required to establish and follow a written policy to ensure the confidentiality of the patient record
- Test results must be released only to authorized persons and the individual for using the test results and/or to the laboratory that initially requested the test
 - This is a big part of patient safety that us the staff have to follow

Accreditation



CAP Accreditation

- Safety procedures have to be posted or available for all employees.
- All laboratories injuries and accidents need to be documented and report to Occupational Safety and Health (OSHA)
- Accredited labs must have automatic fire extinguishing system and fire doors closing when fire occur
- Visual alarm system must be available for the hearingimpaired staff
- Fire drills must be performed with all of the lab staff participating once a year
- All laboratory equipment and devices need to be grounded and checked before first time using, after modification and repair
- Every chemicals in the lab need to be listed and documented. Material Safety Data Sheet (MSDS) have to contain information for each chemical
- MSDS must be available to all of the laboratory staff at all times in any format
- Personal Protective Equipment (PPE) must be provided and worn whenever using the chemicals.

- Universal Precaution: OSHA requires all laboratory staff to be educated on the importance of wearing PPE while handling the patient specimens.
- The Environmental Protection Agency regulates and requires all of the bio hazardous waste must be either incinerated or disinfected appropriately before transported to the proper disposal place
- All sharp waste should be discarded in the sharp containers with the lid tightly seal around it
- Sets of guidelines and policies must be available in the event such as fire, electrical outage, or any other natural disaster
- In the policies and procedure, they are required to have a section that pointed the need of the laboratory as well as the evacuation plan for all of the laboratory staff, patients, visitors, and the people with disability.

Accreditation



DNV Accreditation

- The organization shall have a means for establishing clear expectations for identifying and detecting the prevalence and severity of incidents that impact or threaten patient safety. This shall include medical errors and adverse patient events
- Facilities, supplies, and equipment must be maintained to ensure an acceptable level of safety and quality.
- All supplies should be stored and maintain properly to ensure their safety (protection against theft or damage, contamination, or deterioration), as well as that the storage practices do not violate fire codes or otherwise endanger patients (storage of flammables, blocking passageways, storage of contaminated or dangerous materials, safe storage practices for poisons, etc.).

- All equipment must be inspected and tested for performance and safety before initial use and after major repairs or upgrades.
- All equipment must be inspected, tested, and maintained to ensure their safety, availability and reliability.



Document Control



- Why is document control important?
 - To ensure all procedures and posted documents are up to date and do not contribute to near misses, patient safety events or employee accidents.
- All procedures and policies are in:
 - Sharepoint for laboratory specific procedures and policies.
 - Policy tech for all other hospital department procedures and policies.
- Posted documents contain:
 - HMH document control sticker or
 - Six required DNV elements
 - · Hospital name or logo
 - Department name
 - Document title
 - Creation date
 - Version number
 - Page numbers (if 2+ pages long)

Department of Pathology and Genomic Medicine Laboratory Safety Orientation Culture of Safety





Our mission is to establish a safe and health conscious working environment by providing leadership and encouragement to make safety and health a top priority.



The best way to prevent an accident.



Department of Pathology and Genomic Medicine Laboratory Safety Orientation Culture of Safety



What can we do?

- Wear appropriate safety equipment
- Communication makes us a stronger team
- Participate in all safety training and drills
- Share safety suggestions with your supervisor, manager or director
- If you see something, say something



