

Exposure Control Plan Department- Specific Information Definitions, Regulations and Procedures

1. Definitions:

Engineering controls are devices used to reduce exposure, examples: biological safety cabinets (Biohazard hoods), fixed or movable shields and Hemaguard specimen caps.

Work-practice controls are practices employed to reduce exposure, examples: gauze method of tube opening, not recapping and using sharps containers.

Personal protective equipment is equipment that you personally use and includes gloves, protective clothing, aprons, goggles, masks or face shields.

2. Task-specific requirements:

All work-stations in the department have been reviewed with regard to the risk of exposure. The table that follows this text summarizes all engineering controls, work practices and personal protective equipment required for each work-station. The devices protect employees from exposures that are reasonably anticipated by an evaluation process which considers the volume of blood or body substance that could cause an exposure and the complexity of the task (including the past history of accidents and spills). After the initial assignment of protective equipment, the designations are reviewed in an ongoing process in the incident review procedure. The table is reviewed annually as part of the review of the safety program and manual. (last revision 2002)

3. Department-specific regulations, practices and procedures:

a. **Biohazard zones, buffer zones and clean zones** help to isolate hazards, facilitate disinfection and preserve some areas for relaxation and conducting administrative business. All rooms of the department with main-corridor access are posted as to biohazard or clean zone. Main hallways and corridors within the department are considered buffer zones and protective clothing may be worn in the normal performance of laboratory duties (e.g. transporting specimens or analyses). The zone designation relates to the use of personal protective equipment with the guidelines listed below:



Clean Zones: All areas outside of the department and rest rooms, administrative offices, lounges and conference rooms within the department- Absolutely no protective clothing or gloves may be worn. These areas are designated by *clean zone* signs:



Biohazard Zones: All laboratory testing areas-- areas where specimen containers are opened: Protective clothing, gloves and other appropriate personal equipment (or engineering control) must be utilized on all work stations per the accompanying table. These areas are designated by *biohazard* signs.

b. Clean sink / dirty sink: Within the Biohazard zones, sinks are posted as "Clean Sink" or "Dirty Sink" according to it's designated use.

Clean Sink
Wash Here

Clean Sink: Used for hand washing. The disposal of biologicals and chemicals is prohibited.

Dirty Sink
*Don't Wash Your
Hands Here*

Dirty sink: Used for the disposal of biologicals and chemicals and for other laboratory functions (cleaning equipment, glassware, etc.). Hand-washing is prohibited. Disposal sinks are washed before being used for equipment cleaning.

c. Use of Protective equipment and hygiene practices:

GLOVES: Non-sterile disposable gloves **MUST** be worn when handling specimens in primary containers in the laboratory. These gloves must be changed when they become contaminated, torn or punctured. Disposable gloves are **NOT** to be washed or decontaminated and then reused. **Clean** gloves, free of any contamination (i.e. before contact with blood product) may be worn to answer the telephone, work on the computer or assist in any other laboratory task not involving blood borne pathogens. Prevent environmental contamination (of phones, computers, etc.) by glove changing and hand washing. Hands must be washed with soap on removing gloves and between glove changes.

Courier Glove rules

- * Couriers who pick-up specimens are to wear one protective glove while making rounds. The gloved hand is used for picking up the specimens. This is to prevent exposure should the specimen be leaking.
- * Should the glove become soiled, the glove must be removed per the approved procedure (see BBP Training), the hands immediately washed and a clean glove used to complete rounds.
- * To aid in public perception, use the bare hand to open doors and for elevator controls.

PROTECTIVE CLOTHING: Personal Protective Clothing are long-sleeved, knee length, cuffed, cotton/polyester lab gowns supplied and laundered by the hospital. These gowns are to be worn in designated Biohazard Zones. These zones include all laboratory testing sites and areas where specimen containers are handled or opened. Personal Protective Clothing are **NOT** to be worn in Clean Zones, areas outside the department nor restrooms, administrative offices, lounges and conference rooms inside the department. Clean zones are posted. Exception: Couriers and phlebotomist gowns are not contaminated and are worn in all areas of duty.

**Absolutely no gowns are to be taken home and cleaned.
Gowns are to be kept separate from uncontaminated
clothing.
Do not mix on the same coat rack!**

Lab coats **MUST** be completely fastened (zipped or snapped) when handling any specimens in the laboratory. Barrier Clothing is described as a long-sleeved, knee length cuffed, coated fabric gown (impervious to liquids). Personal protective clothing is performance based (resistant to penetration). The degree of additional protection (e.g, shield or barrier clothing) must be appropriate for the task. Each lab supervisor and director performs a risk assessment of all tasks and assigns the engineering control and type of PPE necessary to provide appropriate protection. See the BBP Exposure Plan- Workstations/Risk and Personal Protective Equipment.

Other rules:

Mechanical pipetting devices must be used for all pipetting . Mouth pipetting is expressly forbidden.

Eating, drinking, smoking, applying cosmetics, lip balm, etc. and applying or manipulating contact lenses is forbidden in all biohazard zones.

Smoking is forbidden in the entire facility.

Food may be stored in a biohazard zone if stored in an approved food storage refrigerator (which is labeled as such). All specimen refrigerators are posted with biohazard symbols and must never be used for food storage.

Dirty sinks in biohazard zones are not to be used for drinking water.

Personal belongings are not to be placed on workstation benches.

Open-toe shoes are forbidden in Biohazard zones.

d. Specimen Handling

All specimens are received in a leak-proof, closed container. Inappropriate or leaky containers are rejected at the point of origin.

When processing specimens, care must be taken to prevent contamination of the outside of the container.

Any contamination of benches, equipment, floors, etc. must be cleaned immediately with a hospital approved disinfectant (see section H).

All specimen processing must be carried out in an area that can be washed and regularly disinfected.

Paperwork must never be stapled to specimens, containers or slips.

Any container for shipping or transport, that conceals the nature and condition of specimens (e.g. closed boxes) must be labeled on the outside with a biohazard label.

e. Centrifuges and aerosol control:

Specifications of new centrifuges will include power interlocking to prevent opening during operation and aerosol control features.

Centrifuges must not be opened until they have completely stopped.

All specimens must be spun in capped containers.

In the event of breakage the inside , head , trunions and carriers must be disinfected before being used again.

Supernatants must be discarded in a manner to prevent aerosol or splatter.

Specimens for filtration must be poured down the side of the funnel to prevent splashes.

f. Needles and blood collection:

Only disposable products are to be used to draw specimens (vacutainer barrels are the exception).

Hand recapping or cutting of used needles is forbidden.

The use of needles in procedures must be avoided if any alternative is possible.

All needles and other sharps must be disposed of in a puncture-proof, leak-proof sharps container.

Gloves must be changed between patients in an in-patient setting. Gloves in an out-patient setting must be changed when they are visibly soiled or when the patient requests changing. When in doubt, change your gloves.

g. Accidental Exposures:

All mucosal and percutaneous exposures and near-miss exposures to blood or other body substances must be reported to the supervisor and must be reported via the incident reporting mechanism. All exposures must be followed by medical treatment (accident room) and surveillance procedures in Employee Health. Mucosal exposure includes splatter or splash of aerosols into the eyes, nose or mouth. Percutaneous exposure includes contact of blood or body substances with non-intact skin. Near-misses do not require treatment or surveillance but must be recorded for analysis and corrective action.

Supervisors must follow the accident with an accident investigation form and take remedial action as appropriate to prevent future accidents.

h. Disinfection of work areas, spill sites and equipment:

Each worker is responsible to keep his or her work-area neat and orderly.

Work-station counter tops must be cleaned daily with any of the approved disinfectants. Wescodyne and Amphyl must be made fresh daily.

Product	Conc.	Tap Water	Dilution	Exposure Time	Comments:
Amphyl	5 cc. (1 tsp.)	1 qt.	1:200	10 min.	Clean surface first. Do not rinse off. Air dry.
	20cc (4 tsp.)	1 gal.	1:200		
Wescodyne	4.5 cc	1 qt.	1:200	5 min.	Double the concentration for porous or hard-to-clean surfaces.
	18 cc.	1 gal.	1:200		
Household Bleach	100cc	1 qt.	1:10	10 min.	Solution is active in an opaque, closed container or squeeze bottle for one month (1).
	400 cc.	1 gal.	1:10		

A disinfectant should not be mixed with any other product. Selection of one product for a particular use depends on the lab preference, staining and corrosion properties. Reduction of the exposure time will reduce the number of organisms destroyed. Adhere to concentrations and exposure times when disinfecting.

1. Established experimentally- 11/97- results on file.
 (confirmed findings of Smith-Kline and UNC at Chapel Hill)

Any spillage of blood or body substance must be cleaned up immediately. Use personal protective equipment (double-gloving is recommended) and impermeable clothing. Remove all visible material and dispose of in biohazard waste, then flood the area with 1:10 bleach solution and allow 10 min. for disinfection. Large spills, spills of cultured or concentrated infectious materials or spills containing broken glass may be flooded with disinfectant at the correct contact time before removal of the material. Do not remove broken glass with unprotected hands--use forceps (or dust pans after disinfection).

Note special procedures for spilled TB cultures - see TB exposure plan.

Disinfection (cont.)

Scientific equipment that has been contaminated with blood or body substances must be disinfected by contact with one of the approved disinfectants before servicing or shipping for service or repair.

Decommissioned equipment must be disinfected in a like manner before disposal or storage of the equipment. (Note: Most manufacturers will provide procedures and /or assistance for disinfection in the instrumentation manual or on request. Many instrument service engineers routinely perform this function on service calls.) If parts of equipment cannot be cleaned they must be labeled with a biohazard label before leaving the facility.



Contaminated, reusable glassware must be placed in a disinfectant solution immediately after use and allowed to be in contact for the appropriate time before washing.

i. Waste disposal:

Regular trash, such as paper, small boxes, and all material that has not come into contact with blood or body fluids is disposed of in regular garbage cans lined with clear plastic or beige bags. Boxes or items that are too large to fit into the cans are brought directly to the trash room on each floor.

Uncontaminated glass is placed in the labeled gray metal cans for glass disposal by housekeeping.

Contaminated non-sharp disposable and all biological samples (including: sera, clots, whole blood, urine containers, stools, cultures, reaction cuvettes and test tubes, bloody gauze, paper to clean spills, discarded gloves, and any other non-sharp items that have come into contact with blood or body substances) are disposed of in the biohazard cans / containers which are lined with red bags.

This material to be disposed of is brought to one of the designated Pathology Substations and is carefully placed in Biohazardous Red Container and then picked up daily by the waste vendor for incineration.

I. Waste (cont.)

Contaminated sharps which could puncture autoclave bags must be placed in the puncture-proof, leak-proof sharps containers. These include but are not limited to: all needles and blades, glass Pasteur pipettes, glass slides, broken contaminated glass and capillary tubes. All containers used in the facility are either provided by the vendor or are tested and approved by OHIC . The containers should be closed when they are three-fourths full. They are picked up by the vendor for treatment. Do not place non-sharps in the sharps containers.

Body parts are disposed of in opaque plastic bags, collected in the morgue and finally cremated through a contract with a local crematorium.

Liquid waste is disposed in dirty sinks which are not used for hand-washing nor drinking water.

Pick-up and handling of Biohazardous Waste-

The orange or red biohazardous bags in the Pathology Department are used for contaminated NON-SHARP disposable objects and biological sample waste. The biohazard cans located in all areas of the laboratory are lined with these autoclavable bags. These containers are not used for contaminated sharps which could easily puncture these bags. As described elsewhere, sharps are placed in puncture-proof, leak-proof sharps containers which are picked up by a private vendor and incinerated.

Pick-up procedure:

A. Removal of contaminated waste is performed daily. The wheeled biohazard secondary receptacle used for transporting contaminated bag MUST be present at each removal site. This is necessary to ensure proper immediate disposal of contaminated biohazardous waste.

NOTE: Dragging contaminated trash through the laboratory is
ABSOLUTELY PROHIBITED.

Reminder: Accidental exposure to blood or body fluids through broken skin MUST be immediately reported to the supervisor. Fill in an incident report, report to Employee Health Clinic (6:30am-3:30pm) or ER during other hours.

Remove the orange contaminated biohazardous bag from primary container as follows:

1. Personnel are to wear protective gown and gloves when handling orange or red biohazard bags. **Eating, drinking or smoking is forbidden while handling or transporting contaminated waste.**

2. The wheeled biohazard secondary receptacle is to be placed immediately adjacent to the laboratory biohazard can. Bags are to be handled by touching the outside, top (unsoiled) side of the bag and removal should be in a vertical (straight up) direction away from the body and other individuals near the removal site.)

3. Carefully inspect bags for visible signs of damage by protruding objects (ie, glass slides, glass pasture pipettes, or broken glass tubes). NOTE: these contaminated objects are not to be disposed of here but may inadvertently end up in this waste stream— be cautious. If there is visible breakage of the bag, place the entire bag inside a new bag.

WARNING: Any spillage of contents must be treated immediately. Remove all visible material and dispose of it in an intact biohazardous bag. FLOOD the area with 1:10 bleach solution and allow 10 minutes for disinfection. If broken glass is involved disinfection is performed before removal of this contaminated material—use forceps— no bare hands.

4. Twist bag to ensure confinement of all contaminated aerosols.
5. Bags are then immediately placed into the the wheeled biohazard secondary receptacle. This container is secured by a tight fitting cover and transported safely to the designated disposal site.

NOTE: The biohazardous collection container used for transporting contaminated material MUST be closed using a tight fitting cover to ensure confinement of the biohazardous substance until it can be properly disposed of.

- B. Transporting contaminated waste to a designated disposal area.
1. All contaminated biohazardous waste is transported via the wheeled covered biohazard secondary receptacle properly labeled with Biohazard labels.
 2. Contaminated waste should be brought to the nearest disposal substation area to prevent transporting Biohazardous material long distances.
- C. Removal of contaminated bags is done immediately after reaching substation disposal site. The cart containing the closed receptacle is placed close to Red Biohazardous Receptacle provided by Medical Waste Services of America to avoid any unnecessary spillage of contents.
1. The orange or red bag is carefully removed by handling the clean twisted portion of the bag and lifting in a vertical direction away from interfering objects— one at a time.
 2. The biohazardous red or orange bags are then immediately placed in the large Medical Waste Red Receptacles located at each substation disposal site.

3. The biohazardous material is then picked up daily by a representative from Medial Waste Services of America for disposal.

NOTE: All cans MUST be tightly sealed to ensure confinement of aerosols until waste reaches its destination.

j. Referring specimens for educational purposes:

Before used specimens may be referred to educational institutions for teaching purposes, the institution must submit biohazard disposal procedures for review and approval. The safety committee will approve on consultation with the Office of Hospital Infection Control. Currently, LSUMC- Department of Medical Technology and Delgado Community College—Medical Laboratory Technician programs are approved for these purposes.

4. Training:

Personnel encountering Blood Borne Pathogens will receive annual training via the Safety Meeting format with Safety Coordinators and Supervisors conducting the meeting per the published agenda (see attached). Attendance records are maintained by the department and by the Laboratory Supervisors. Meeting agendas are developed by the Safety Committee with review, oversight and input by the IC Department.