## 01.32 - Exposure Control Plan

Purpose: To provide a plan for the prevention of exposure of hospital personnel and students to blood and body fluids.

Audience: All employees of UTMB hospitals, clinics, Victory Lakes outpatient specialty care and surgical center, contract workers, volunteers, and students

Standard Precautions Policy: This program is based on the assumption that blood and other body fluids from all patients may be infectious. This system will protect healthcare workers (HCW's) and students from bloodborne infectious agents such as Hepatitis B Virus (HBV), Hepatitis C Virus (HCV) and Human Immunodeficiency Virus (HIV) as well as many other infectious diseases encountered in hospitalized patients (including those that are undiagnosed). All procedures involving blood or other potentially infectious materials shall be performed in such a manner as to minimize splashing, spraying, spattering and generation of droplets of those substances. Barrier precautions should be used when contact with any potentially infectious body fluid, tissue or organ (blood, plasma, serum, semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, breast milk, saliva in dental procedures, any body fluid that is bloody and when the identity of the body fluid is uncertain and any unfixed tissues or organs) is anticipated. One should not rely on a diagnosis of infection to be made before precautions are instituted. Rather, by assuming that all blood, body fluids and tissues identified above are potentially infectious, measures are taken to safely handle these body substances. In addition, the consistent use of barriers, particularly gloves, by HCW's and students protect patients from the organisms that can be transmitted from patient to patient by personnel and students. This policy focuses on the use of barriers to prevent contact with blood, other body fluids, and unfixed tissues.

Exposure Control Plan: This Exposure Control Plan is based on OSHA regulations (29 CFR Part 190.1030) and Chapter 81, Health and Safety Code, Subchapter H. It will focus on engineering controls, changes in work practices and personal protective equipment (PPE) for the protection of HCW's and students. It will be reviewed annually and revised as indicated.

General Precautions: These general precautions apply to all HCW's and students who have any risk for exposure to blood, other body fluids, fluids that may be body fluids or unfixed tissues.

Exposure Determination: Employees who, during the course of their work, are potentially exposed to blood, body fluids, and unfixed tissues will be identified. This data on risk classification will be maintained in Human Resources.

Eating & Drinking: HCW's and students shall not eat, drink, apply cosmetics or lip balm or handle contact lenses in work areas including nursing units, areas where diagnostic procedures are performed, areas where treatments are administered, areas where equipment and material contaminated with blood and body fluids are processed and the clinical laboratories.

Storage of Food: Storage of food and drink in refrigerators, freezers, and cabinets or on shelves or countertops where blood and other potentially infectious materials are present is prohibited.

Barriers: Gloves & Handwashing Personal protective equipment (PPE) for protection of healthcare workers and students from contamination by blood and other body fluids shall be found at a clearly marked location on each unit. Employees must always use PPE unless an employee temporarily and briefly declines use of PPE when under rare and extraordinary circumstances, it was the employee's professional judgment that in the specific instance its use would have prevented the delivery of health care or public safety services or would have posed an increased hazard to the safety of the worker or co-worker. When the employee makes this judgment, the circumstances shall be investigated and documented in order to determine whether change can be instituted to prevent such occurrences in the future.

- HCW's and students shall wash hands before and after each patient contact, and any time they become accidentally contaminated with blood or other body fluids.
- Gloves shall be worn for phlebotomy, for inserting intravascular catheters, intubation, suctioning and for any other procedures where hands may become contaminated with blood or other body fluids. All sizes of gloves shall be available. Hands shall be washed after removing gloves. The following are guidelines for glove use:
  - Use sterile gloves for procedures involving contact with normally sterile areas of the body.
  - Use examination gloves for procedures involving contact with

mucous membranes, unless otherwise indicated, and for other patient care or diagnostic procedures that do not require use of sterile gloves.

- Gloves shall be changed between patients.
- Gloves shall be replaced as soon as practical when they become contaminated or as soon as feasible if they are torn, punctured, or when their ability to function as a barrier is compromised.
- Gloves shall not be washed or disinfected for reuse.
- General purpose utility gloves (i.e., rubber household gloves) for non-patient contact (i.e., housekeeping, transportation, laboratories, etc.), where tasks involve potential blood and body fluid contact but where a high level of manual dexterity is not required, shall be used. Utility gloves may be decontaminated with an appropriate disinfectant and reused but shall be discarded if they are peeling, cracked or discolored, or if they have punctures, tears, or other evidence of deterioration.
- When a healthcare worker or student discovers that he or she is allergic to the gloves provided, this fact shall be reported to their supervisor. Gloves made from a material to which the employee or student is not allergic shall be made available.

Barriers: Gowns

Impervious gowns shall be worn when a particular task may result in contamination of clothing due to splashing or spattering of blood or other body fluids. Hands must be washed after gowns are removed. Disposable gowns shall be discarded as regular waste unless significantly contaminated with blood/bloody body fluids in which case they shall be discarded in a red bag as biohazardous waste. Reusable gowns shall be placed in an impervious laundry bag with a minimum of agitation, and sent to the Texas Medical Center laundry.

All garments which are penetrated by blood, or other body fluids, shall be removed immediately or as soon as feasible and placed in the appropriate container for disposal. All personal protective equipment shall be removed prior to leaving the work area and placed in the designated receptacle.

Barriers: Masks & Goggles

Masks and goggles or glasses with solid side shields or masks with eyeshields incorporated that provide side protection or chin length face shields shall be used any time there is a potential for blood or body fluids to contaminate mucous membranes. If mucous membranes become

contaminated with blood or other body fluids, flush immediately with water.

Barriers: Surgical Caps or Hoods, Shoe Covers or Boots

Surgical caps or hoods and fluid resistant knee-high booties shall be worn in instances when gross contamination can reasonably be anticipated. They should be removed when soiled followed by handwashing. New booties should be donned if there is a continuing risk of contamination with blood or body fluids during the procedure.

Barriers: CPR

Disposable mouth barriers or reusable resuscitation bags for cardiopulmonary resuscitation (CPR) shall be provided on patient units and in treatment areas. After use, reusable resuscitation bags shall be placed in a plastic bag and returned to sterile processing for cleaning and sterilization.

Cleaning Up Spills:

Cleaning up spills of blood, other body fluids, and unfixed tissues:

- Gloves shall be worn.
- Forceps shall be used to pick up any sharp objects such as broken glass or plastic before the fluid is wiped up. Heavy general purpose utility gloves shall be worn to clean up spills if glass or plastic is present.
- The spilled substance shall be thoroughly wiped up using disposable absorbent material (i.e., paper towels) which are then discarded as regular waste. If the absorbent material is saturated (dripping) with blood/bloody body fluids, then the absorbent material shall be discarded as biohazardous waste.
- The area of the spill will then be convered with a 1:10 dilution of sodium hypochlorite*. After 5 minutes, the sodium hypochlorite can be removed with absorbant material and the latter discarded as regular waste.

Contaminated Equipment:

- Gloves shall be worn when handling contaminated instruments or equipment.
- All instruments to be returned to sterile processing shall be bagged in a non-red plastic bag and secured with tape. Sharp objects shall be placed in a hard container prior to bagging.
- All equipment contaminated with blood or other body fluids shall be decontaminated by appropriate means prior to servicing (i.e., in the dirty utility room of the patient care area).

- Gloves shall be worn by the person who decontaminates the equipment.
- When equipment cannot be decontaminated prior to servicing, a sticker displaying the biohazard symbol shall be attached.
- The area(s) contaminated shall be written on the front of the sticker.

- UTMB will provide to healthcare workers certain safety products designed to prevent sharp object injuries. Healthcare workers will be engaged in the selection of these safety products. For their protection, healthcare workers are required to use these products. These products include but are not limited to safety needles for: venipuncture, intravenous lines, finger/heel sticks, intramuscular injections and general needle/syringe usage. The requirement to use these products does not apply to those devices that are not available with a safety feature or that must be modified for certain procedures and the modification precludes the use of the safety feature.

Devices with Engineered Sharps Protection and Needleless Systems:

- Needleless systems including intravenous administration sets and devices to withdraw medications from vials will be used throughout UTMB hospitals.
- All sharps devices with sharps protection will be reviewed annually and compared with new sharps devices available commercially. New devices that have more effective sharps protection will be selected to replace sharps currently in use.
- New sharps devices will be assessed by personnel who use sharps devices in their daily work.
- Contaminated needles and other contaminated sharps shall not be bent, recapped, or removed except as described in the section on needle removal below. Shearing or breaking of contaminated needles is prohibited.

Venipuncture:

Venipuncture and insertion of steel needles or plastic catheters into any intravascular space shall be carried out with great care.

- Gloves shall be worn.
- Vacutainers with sharps protection shall routinely be used for venipuncture.
- In the extraordinary circumstance where blood cannot be obtained using a vacutainer, a needle and syringe with sharps protection shall be used. However, in transferring blood from syringes to vacutainers, NEVER FORCIBLY INJECT blood into the tubes. **Forcible injection of blood through the rubber stopper of tubes without a vacuum may cause the top to pop off and spray blood**

**on the operator. Tubes without a vacuum shall be discarded and replaced by tubes with a vacuum.**

Needle Removal:

Needles shall never be removed from a syringe or vacutainer holder, and they shall be disposed of as a unit in a puncture-resistant leakproof container. One exception to this rule is removal of needles from syringes used to obtain arterial blood, or recapping dental needles used for local anesthesia or needles used for titrating IV sedation.

- Needles shall never be placed on the patient's bed, on environmental surfaces in the patient's room, or left attached to the administration set and hung over the IV pole.
- The top of a puncture-resistant leak proof (sharps) container should always be viewed prior to approaching it with a sharp for disposal to avoid puncture injury from a needle sticking out of the opening. Never try to "stuff" needles into a full box.
- When sharps containers are ¾ full, they shall be carefully sealed and packaged for disposal. During removal and packaging, needle disposal containers shall be held in the upright position to avoid leakage of blood or other body fluids.
- Needles and sharp objects shall be discarded as quickly as possible after use in a puncture-resistant leakproof (sharps) container.
- Sharps containers will be located as close to treatment areas as possible, but not mounted too low which might allow access by children.

Blood and Body Fluid Exposure:

Exposed HCW's should report to the Employee Health Center (EHC) and exposed students to Student Health as soon as possible. Exposure of a healthcare worker or student is defined as follows:

- Puncture of skin or laceration by a sharp object contaminated with blood, blood-tinged fluids or other potentially infectious body fluids.
- Contamination of mucous membranes (eyes, nose, mouth) by blood, blood-tinged fluids or other potentially infectious body fluids.
- Contamination of non-intact skin (cuts, scratches, abrasions, dermatitis, etc.) by blood, blood-tinged fluids, other potentially infectious body fluids or unfixed tissues.
- Contamination of intact skin by blood, blood-tinged fluids, or other potentially infectious body fluids that is prolonged or involves an extensive area.
- When a needlestick or injury with other types of sharps occur, the wound should be cleansed immediately with povidone-iodine, chlorhexidine, or 70% isopropyl alcohol and washed off. The sharps injury should be reported immediately to the employee's or student's

supervisor. The employee will be sent to Employee Health and a student shall be sent to Student Health immediately. After hours or on weekends or holidays, the employee or student will be sent to the Emergency Department.

- Employees and students with sharps injuries will be cared for based on Infection Control Policy: 01.02 Bloodborne Pathogens (BBP) Occupational Post-Exposure Prophylaxis.

  ***Off-site clinics refer to your agency specific policy for instructions***

Laboratory Specimens:

All laboratory specimens shall be placed in leakproof containers (e.g., specimen cups, culturettes, vacuum tubes) and then bagged in single, biohazard specimen bags. The requisition slip shall not be placed in the bag or stapled through the bag, but rather, placed in the outside pocket. When specimens are sent to other outside laboratories, the containers in which the specimens are placed must be labeled with a biohazard sign. If outside contamination of the primary container occurs, the primary container shall be placed within a second container which prevents leakage during handling, processing, storage, transport or shipping and is labeled or color-coded according to the requirements of this standard. If the specimen could puncture the primary container, the primary container shall be placed within a secondary container which is puncture-resistant in addition to the above characteristics. Laboratory specimens may be sent through the tube system. Place specimen in a biohazard bag with request slip in outside pocket into a Zip N' Fold pouch. The pouch should be sealed appropriately. If a pneumatic capsule is received that appears grossly wet or soiled, wear gloves before handling the capsule and removing the contents. Be aware that there may be broken glass or plastic inside! Remove sharp objects (broken glass or plastic) using forceps. Discard any wet or soiled padding as infectious waste. Clean the inside and outside surfaces of the pneumatic capsule with a **1:10 dilution of sodium hypochlorite**. Call the physical plant dispatcher and notify them of the contamination of the tube system.

Arterial Puncture:

Arterial puncture shall be carried out with great care.

- Gloves shall be worn.

- After obtaining the arterial sample, great care shall be exercised when replacing the cap on the needle of the syringe. The one-handed technique, with the cap lying on a flat surface, shall be used. The syringe shall be held in one hand and the needle inserted into the cap. The cap will be snapped into place by pushing the cap against a vertical surface. The capped needle shall then be removed from the syringe and immediately placed in a sharps container. The hub of the syringe will be plugged with the rubber cap from the kit.

- In the Infant Special Care Unit arterial blood for blood gas determinations shall be obtained with a scalp vein needle with engineered sharps protection. After removal from the artery, the scalp vein needle sharps protection device shall be immediately deployed.

Biohazard Waste Disposal in Hospitals and Clinics:

- Biohazardous waste includes:
  - Microbiological waste
  - Pathological waste
  - Human blood and blood products (disposable items saturated (dripping) with blood/bloody body fluids)
  - Bulk Blood (100cc or more)
  - Sharps Containers

- Reusable containers used for disposal of biohazardous waste shall be lined with red biohazard bags. These containers shall be labeled with the biohazard symbol (red containers may be substituted for labels). It is preferable that single-use biohazard boxes be used for disposal of biohazardous waste. If waste contains free liquids, a sufficient amount of LiquiLoc solidifier shall be added to the container to absorb 150% of the free liquids.
  - When reusable waste containers are found to be contaminated at the time red bags are removed, they shall be washed out with soap and water and disinfected with a **1:10 dilution of sodium hypochlorite.** All reusable waste containers shall be inspected and washed with soap and water weekly. Gloves shall be worn for washing out waste containers.

Needles and other sharp instruments must never be placed in trash bags.

Soiled Linen: Soiled linen shall not be sorted or rinsed in patient care areas but shall be bagged in an impervious laundry bag and sent to the Texas Medical Center laundry. Laundry from patients in isolation shall not be segregated. Medical instruments and sharps shall not be placed in the laundry bag.

Pinprick Testing: Pins or needles used for pinprick sensory testing shall be used on only one patient and then disposed of in a puncture-resistant leakproof (sharps) container.

Body Secretions Disposal: Secretions and body fluids from patients can be safely discarded in disposable drainage receptacles which are placed into a red bag (i.e., chest drainage (pleurovacs) suction canisters, etc.). If the drainage receptacle is not disposable, the fluid may be discarded in the sink. Pour the fluids carefully to avoid splashing and follow with copious amounts of water. Eye protection should be worn.

Patient Transport: Patients who are being transported require no special precautions other than precautions currently in effect on the unit.

Deceased Patients: Deceased patients shall be wrapped appropriately so that leakage does not occur. HCW's carrying out these procedures shall wear gloves and other barriers indicated by the physical condition of the patient and likelihood of contamination of clothes and mucous membranes.

Refrigerator Freezers: All refrigerators, freezers or other areas where blood and body fluids are stored shall be labeled with the biohazard symbol.

OSHA Document: Copies of OSHA regulations entitled "Occupational Exposure to Bloodborne Pathogens; Final Rule" are available in Healthcare Epidemiology.

ER & Trauma:

- Since the time available to don protective gear (i.e., gowns, gloves, goggles, masks and impermeable booties) prior to exposure to large amounts of blood may be very limited, HCW's and students assigned to the Trauma Center shall be prepared to don protective gear on short notice.
- With a large number of HCW's and students working in a very limited area around a trauma patient, great care should be exercised with needles and other sharp objects to prevent personnel from accidentally sticking each other.

Labor & Delivery:

- Gowns made of impermeable material, gloves, protective booties, masks and safety goggles or glasses with solid side shields or masks

with eyeshields incorporated shall be worn by the operative team including students during vaginal delivery and caesarian sections. It is strongly recommended that the members of the operative team and students wear two pairs of gloves.

OR and PACU:

- Members of the operative team including students, should wear goggles or glasses with solid side shields or masks with eyeshields incorporated. It is strongly recommended that members of the operative team and students wear two pairs of gloves.

Biopsy specimens shall be dropped directly into leakproof containers held by circulating nurses to avoid contamination of the outside of the containers. The specimens shall be dropped very carefully to avoid splashing solution. The caps shall be applied tightly and the specimens bagged in single, biohazard specimen bags. The requisition slips shall not be placed in the bags or stapled through the bags. Requisition slips shall be placed in the outside pocket.

Dentistry and Oral Surgery:

- All HCW's participating in a dental or oral surgery procedure on any patient shall wear gloves and goggles or glasses with solid side shields and masks or masks with eyeshield incorporated. All linen shall be placed in impervious laundry bags.
- All equipment contaminated with blood, other body fluids or unfixed tissues shall be decontaminated by appropriate means prior to servicing (i.e., in the dirty utility room of the patient care area).
  - Gloves shall be worn by the person who decontaminates the equipment.
  - When equipment cannot be decontaminated prior to servicing, a sticker displaying the biohazard symbol shall be attached. The area(s) contaminated shall be written on the front of the sticker.

Pathology: Laboratory Medicine

- Phlebotomy trays shall be red or will be labeled with the biohazard symbol.
- All non-disposable equipment that comes into contact with blood or body fluids shall be disinfected with a **1:10 dilution of sodium hypochlorite.**
- Mechanical pipetting devices shall be used for the manipulation of all liquids in the laboratory. Mouth pipetting is prohibited.
- Laboratory coats or aprons shall be worn while working with potentially infectious material. Soiled laboratory coats or aprons shall be removed prior to leaving the laboratory.
- Gloves shall be worn to avoid skin contact with blood and other body fluids as well as surfaces, materials and objects that may be contaminated by them. Gloves shall be worn when removing

specimen containers from Ziploc bags as specimens are received in the laboratory.

- When potentially infectious materials are processed, all procedures shall be carefully performed to minimize the creation of droplets and aerosols
- Biological safety cabinets (class II) and other primary containment devices (e.g., centrifuge safety caps) shall be used whenever procedures are conducted that have a high potential for creating aerosols or infectious droplets. These include centrifuging, blending, sonicating or vigorous mixing.
- If spill kits are used, the spill shall first be covered with absorbent powder, fluids carefully removed with the use of gloves, and the area disinfected (see kit directions).
- Fingers, pencils, instruments and other foreign objects shall not be placed in the mouth.
- Should a centrifuge accident occur and the inside of the centrifuge become contaminated with blood or body fluids, the centrifuge must be decontaminated using very careful technique. Report the incident to the laboratory supervisor immediately.
- Gloves shall be worn for the decontamination process.
- Broken fragments of glass or plastic shall be picked up with forceps and placed in a puncture-resistant leakproof (sharps) container for disposal. Heavy gloves shall be worn to clean spills if glass or plastic is present.
- Centrifuge shall be disinfected with a hospital-grade disinfectant that is allowed to remain on surfaces for 15 minutes before further cleaning.
- All tubes, caps, etc, shall be disinfected with a **1:10 dilution of sodium hypochlorite.**
- Transparent plastic shielding shall be used between the droplet-collecting area and the operator of fluorescent activated cell sorters.
- All blood and body fluids shall be discarded by carefully pouring them down the sink. Specimens that cannot be discarded in the sink shall be placed in fluid-tight containers and discarded in red plastic bags.
- All HCW's and students shall wash their hands with soap and water before leaving the laboratory.
- When specimens of blood, other body fluids or unfixed tissues are sent from the laboratory at UTMB to locations outside of UTMB, they

shall be placed in containers labeled with the biohazard symbol. These labels shall be fluorescent orange-red or predominantly so, with lettering or symbols in a contrasting color. Any specimens that are sent through the U.S. Mail shall meet the specifications of the U.S. Postal Service and/or Department of Transportation. HCW's shall be trained on proper handling of specimens for shipment.

- All equipment contaminated with blood, other body fluids, or unfixed tissues shall be decontaminated by appropriate means prior to servicing (i.e., in the dirty utility room of the patient care area).
  - Gloves shall be worn by the person who decontaminates the equipment.
- When equipment cannot be decontaminated prior to servicing, a sticker displaying the biohazard symbol shall be attached. The area(s) contaminated shall be written on the front of the sticker.

Surgical Pathology:

- HCW's and students shall wear gloves and plastic disposable aprons. Safety goggles or glasses with solid side shields and masks or masks with eyeshields incorporated shall be worn.
- All HCW's (e.g. laboratory technicians, residents, faculty) and students working with unfixed tissue shall wear gloves.
- Personnel shall be very careful with microtome knives when preparing histologic sections with the cryostat.

Autopsy Service:

- Barrier clothing shall be worn by those participating in and/or observing an autopsy.
  - Impermeable gown
  - Two pairs of gloves
  - Mask
  - Goggles or glasses with solid side shields
  - Impermeable booties
- Handling and disposal of sharps.
  - All sharps including needles, scalpel blades and saw blades shall be handled with great care.
  - All disposable sharps shall be placed in a puncture-resistant leakproof (sharps) container immediately after use.
  - Sharps containers shall be sealed and appropriately discarded when ¾ full.
- Steps shall be taken to minimize generation of aerosols by electric saws.
- Surfaces in the autopsy suite ordinarily touched by ungloved hands shall not be touched by the gloved hands of those performing

autopsies.

- A person not involved in the performance of the autopsy (circulator) shall be present in the room during each autopsy.
- This person provides assistance to the autopsy team (e.g., answers the phone, completes paperwork, obtains supplies, provides specimen containers, etc.).
- Specimens shall be carefully (to avoid splashing) dropped into specimen containers held by the circulating person to prevent contamination of the outside of the containers.
- Instruments, the autopsy table and all other surfaces contaminated with blood, other body fluids or tissue shall be cleaned and then disinfected using a **1:10 dilution of sodium hypochlorite.**
- All disposable materials contaminated with blood/bloody body fluids or tissues shall be discarded as biohazardous waste.
- All soiled laundry shall be considered contaminated and shall be handled using gown & gloves.

References:

1. Federal Register, December 6, 1991, Part II; Department of Labor, Occupational Safety and Health Administration: 29 CFR Part 1910.1030 Occupational Exposure to Bloodborne Pathogens; Final Rule.
2. Chapter 81, subchapter H of the Health and Safety Code. Title 25 Health Services, Chapter 96 Bloodborne Pathogen Control.