Universal Precautions

Audience
All personnel in the Pulmonary Laboratories: Pulmonary Function Clinic, Bronchoscopy Servicer, Sleep Disorder Center and Center for Pulmonary Rehabilitation.

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

Policy
Universal Precautions is a program 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). Universal Precautions requires that barrier precautions 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. Universal Precautions does 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. Universal Precautions focuses on the use of barriers to prevent contact with blood and other body fluids.

Exposure Control Plan
This Exposure Control Plan is based on Universal Precautions and OSHA regulations (29 CFR Part 190.1030). It will focus on engineering controls, changes in work practices and personal protective equipment (PPE) for the protection of HCW’s. It will be reviewed and revised as indicated.

General Precautions
These general precautions apply to all HCW’s and students who have any risk for exposure to blood or other body fluids.

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

Barriers to protect HCW’s and students from contamination by blood and other body fluids shall be found at a clearly marked location on each unit.

- HCW’s and students shall wash hands before and after each patient contact, and anytime 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 HCW 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 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. Gowns must be removed after each use. 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 and sent to UTMB 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. All personal protective equipment shall be removed prior to leaving the work area and placed in the designated receptacle.

**Barriers: Mask & 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 anytime there is a potential for blood or body fluids to contaminate mucous membranes.

**Barriers: Surgical Caps or Hoods & Shoe Covers/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 changed when soiled.

**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 bag shall be placed in a plastic bag and returned to sterile processing for cleaning and sterilization.

**Cleaning Up Spills**

Cleaning up spills of blood and other body fluids:

- 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 are 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.
- A hospital-grade disinfectant shall then be applied to the area of the spill.

**Contaminated Instruments**

Cleaning up contaminated instruments:
- 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 HCW’s certain safety products designed to prevent sharp object injuries. For their protection, HCW’s 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 Injury Protection & Needleless Systems**

Needleless systems including intravenous administration sets and devices to withdraw medications from vials will be used throughout UTMB hospitals.

**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 shall routinely be used for venipuncture.
- In the extraordinary circumstance where blood cannot be obtained using a vacutainer, a needle and syringe 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.
- Needles shall not be recapped, bent, broken, sheared or cut after use.

**Needle Removal**
Needles shall never be removed from syringe or vacutainer holder, and they shall be disposed of as a unit in a puncture-resistant leak proof 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. HCW’s on each unit shall be assigned to replace needle disposal containers when they are ¾ full.
- Needles and sharp objects shall be discarded as quickly as possible after use in a puncture-resistant leak proof (sharps) container.
- Sharps containers should be located as close to treatment areas as possible, but not mounted too low which might allow access to children.

**Blood and Body Fluid Exposure**

Exposed HCW’s need to report to the Employee Health Center (EHC) and exposed students to Student Wellness 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 or other infectious body fluids.
- Contamination of intact skin by blood, blood-tinged fluids, or other potentially infectious body fluids that is prolonged or involves an extensive area.
- Should a needlestick or injury with another sharp instrument occur, the wound should be cleansed immediately with providone-iodine, chlorhexidine or 70% isopropyl alcohol and washed off. All sharp injuries or other exposures to blood and body fluids shall be reported to the EHC or Student Wellness.
- For further information see Infection Control Policy: Bloodborne Pathogens (BBP) Occupational Post-Exposure Chemoprophylaxis.

**Laboratory Specimens**
All laboratory specimens shall be placed in leakproof containers (i.e., 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. 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 capsules 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 hospital-grade disinfectant. Call the physical plant dispatcher and notify them to the contamination of the tube system.

**Arterial Punctures**

Arterial punctures shall be carried out with great care.

- Gloves shall be worn.
- After obtaining the arterial sample, great care shall be exercised when removing the needle from the syringe. The needle shall be placed into the needle protection device. The one-handed technique shall be used (never use both hands). The capped needle shall be removed from the syringe and the hub of the syringe 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. After removal from the artery, the scalp vein needle shall be immediately (but carefully) stuck into a cork using the one-handed technique and then transported to the laboratory.
- Blood spills shall be cleaned up with an EPA-registered tuberculocidal disinfectant.

**Biohazard Waste**

Biohazardous waste includes:

- Microbiological waste.
- Pathological waste.
- Chemotherapy products
- 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.
- 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 hospital-grade disinfectant. All reusable waste containers shall be inspected and washed with soap and water weekly. Gloves shall be worn for washing out waste containers.

**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 UTMB 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 the disposable drainage receptacle 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 (see policy: Transportation of Patients with an Infection or Communicable Disease).

**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” and Article 26, Bloodborne Pathogen Control from the Texas Health and Safety Code 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 shall be worn by the operative team including student during vaginal delivery and caesarian sections. It is strongly recommended that the members of the operative team and students wear two pairs of gloves.

Circulating nurses shall wear non-sterile gowns and two pairs of gloves during all vaginal and caesarian deliveries.

**Anesthesiology**

See Infection Control Policy: Anesthesiology

**OR & PACU**

Members of the operative team including students, who have significant contact with blood or body fluids shall wear gowns made of impermeable material, gloves, masks and goggles or glasses with solid side shields or masks with eyeshields incorporated and protective booties. It is strongly recommended that members of the operative team and students wear two pairs of gloves. Circulating nurses shall wear non-sterile gowns and two pairs of gloves during the procedure.

Biopsy specimens shall be dropped directly into leak proof 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.

**Endoscopy**

See Infection Control Policy: Endoscopy

**Dental & 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. It is strongly recommended that personnel performing oral surgery wear two pairs of gloves. Gowns shall be worn when performing procedures with the potential for splatter of blood (use of rotary instruments, etc.). All linen shall be placed in impervious laundry bags.

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.

All surfaces contaminated with blood or other body fluids shall be cleaned up using disposable absorbent materials (i.e., paper towels) which shall be 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 surfaces shall then be disinfected with a hospital-grade disinfectant. Gloves shall be worn for cleaning and disinfection of contaminated surfaces.

Pathology: Lab 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 hospital-grade disinfectant.

- 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.
• Centrifuge shall be disinfected with a hospital-grade disinfectant and allowed to remain on surface for 15 minutes before cleaning.
• 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.
• All tubes, caps, etc, shall be disinfected with a hospital-grade disinfectant.
• Taking great care to avoid puncture from small pieces of glass or plastic, all other surfaces in the centrifuge chamber shall be wiped down with a hospital-grade disinfectant.

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.
• Laboratory work surfaces shall be decontaminated with a hospital-grade disinfectant when they become visibly soiled with blood or body fluids, prior to leaving a particular work surface for a period of time during a shift, and at the completion of each shift.
• 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 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.

**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.

**Laundry**

All soiled laundry shall be considered contaminated and shall be handled using Universal Precautions. Laundry workers shall wear gowns, utility gloves, masks and safety goggles or glasses with solid side shields or masks with eyeshields incorporated when handling all laundry.

Leakproof, puncture-resistant containers shall be appropriately located in the laundry for disposal of needles and other sharps.

When sharp objects are discovered in laundry, the sharp object shall be removed only with forceps and then placed in a leakproof puncture-resistant container.

**Compliance Monitoring**

It is the responsibility of all hospital HCW’s to comply with the Exposure Control Plan.

Non-compliance by UTMB employees shall be subject to appropriate disciplinary measures as outlined by the Human Resources Department.

Disciplinary measures for non-compliance by housestaff and faculty shall be governed by the Medical Staff Executive Committee.

Personnel from the Department of Healthcare Epidemiology shall randomly monitor compliance with this protocol.

For most UTMB HCW’s, non-compliant incident reports shall be sent to the appropriate Manager or Director.

For physicians, the non-compliant incident reports will be sent to the appropriate Service Chief at UTMB.

**References**


Section 81.301 through 81.307 House 6.4 2085, Article 26, amended chapter 81.

This form documents the approval and history of the policies and procedures for the Pulmonary Function Laboratory. The Medical Director signs all policies verifying initial approval. Annually thereafter, the Director and/or designee may approve reviews and revisions.
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