

University of Tennessee Health Science Center

Exposure and Infection Control Plan

For Faculty, Staff, Students and Residents

Exposure and Infection Control Plan

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Acknowledgement

RIGHTS AND RESPONSIBILITIES

The Exposure and Infection Control Plan (EICP) was developed by the University of Tennessee Health Science Center (UTHSC) as a means to eliminate or minimize occupational exposure to blood and other potentially infectious materials (OPIM). In the EICP the word “employee” means all faculty, staff, students and residents.

It is necessary and essential that any employee whose duties involve any reasonably anticipated contact with or exposure to blood or other potentially infectious materials (OPIM) complete the following:

- Read and understand all applicable UTHSC Exposure and Infection Control Policies.
- Ask the designated Departmental Safety Officer any questions you might have regarding applicable policies and the EICP.
- Sign this acknowledgement, provided to you by the Department of Safety Affairs, stating that you have thoroughly read and understand all applicable Exposure and Infection Control Policies and will abide by the provisions of the EICP as long as you are an employee of UTHSC.
- Return the signed acknowledgement to your departmental safety officer.

CONFIRMATION

By signing this acknowledgement I am stating:

- I have read and understand all applicable UTHSC exposure and/or infection control policies and I understand that the full text of the UTHSC Exposure and Infection Control Plan (EICP) is available to me.
- I am working in the following areas (check all areas that apply). I have read and understand the Appendix section of the EICP specified for each area.
 - ☐ BSL1 or BSL2 – Appendix B
 - ☐ BSL3 – Appendix C
 - ☐ Animal Care – Appendix D
 - ☐ Clinical laboratory – Appendix E
 - ☐ Office/Administration – Appendix F
- I shall utilize my best efforts to abide by this Exposure and Infection Control Plan.

Employee signature

Date

Employee name - printed

Employee email:

Department:

Departmental Safety Officer:

TO FACULTY, STAFF, STUDENTS and RESIDENTS:

UTHSC is required by OSHA to have an Exposure and Infection Control Plan (EICP), which documents procedures at UTHSC that ensure protection of faculty, staff, students and residents against the transmission of infectious diseases within the educational, research, and healthcare environments. The UTHSC Exposure and Infection Control Plan is managed by the UTHSC Department of Safety Affairs and is in accordance with the following UTHSC Policies:

- Exposure Control Policy
- Infection Control Policy for Students
- Infection Control Policy for Residents
- Infection Control Policy for Employees
- CDC guidelines on handling of Bloodborne Pathogens (BBP)
- CDC Prophylaxis and Exposure Protocol (PEP)

The full Exposure and Infection Control Plan is available to you, upon request, during normal business hours from the Department of Safety Affairs and on the UTHSC Safety Affairs website: www.utmem.edu/safety. It is updated and reviewed annually to reflect changes in tasks or procedures that may result in occupational exposure.

1 Introduction

UTHSC is committed to providing a safe and healthy workplace for everyone. The EICP describes UTHSC's efforts to eliminate or minimize occupational exposure to bloodborne pathogens, infectious agents, and Other Potentially Infectious Materials (OPIM). It contains information concerning the regulations and procedures with regard to:

- Exposure Determination
- Methods of exposure control including:
 - Universal precautions
 - Engineering Controls
 - Standard Laboratory Precautions
 - Personnel Protective Equipment
 - Housekeeping
- Blood Borne Pathogen Communication
- Labeling/Hazard Communication
- Hepatitis B Virus (HBV) Vaccination
- Training
- Record Keeping
- Treatment for exposure incidents

Its purpose is to inform you, the faculty, staff, student, or resident, about the regulations and guidelines in place in your work environment. **In this plan the term “employee” means all faculty, staff, students and residents.** All employees who have the potential for occupational

exposure to blood, bodily fluids and Other Potentially Infectious Material (OPIM) must comply with the procedures and work practices outlined in the EICP.

2 EXPOSURE PREVENTION

2.1 EXPOSURE DETERMINATION

Supervisors are responsible for determining which employees have potential for occupational exposure to bloodborne pathogens, infectious agents or OPIM, and for providing these individuals with proper training.

2.2 ENGINEERING AND WORK PRACTICE CONTROLS

Engineering and work practice controls are used as a primary means of eliminating or reducing exposure to infectious agents. In the event that a risk of occupational exposure still exists after implementation of engineering and work practice controls, the employer must provide and ensure that employees utilize personal protective equipment as additional protection.

A. Biosafety Communication.

Laboratories at UTHSC are classified into 3 levels of biosafety. All laboratories with work conducted at one of the following biosafety levels must post the biosafety level on the door to the laboratory. All employees should be familiar with these signs and only enter laboratories if they have had training for that biosafety level or are accompanied by a person who has the required training.

- **Biosafety Level 1(BSL1)** BSL-1 is appropriate for working with microorganisms that are not known to cause disease in healthy human humans. Biosafety Level 1 represents a basic level of containment that relies on standard microbiological practices with no special primary or secondary barriers recommended, other than a sink for handwashing.
- **Biosafety Level 2(BSL2)** The facility, the containment devices, the administrative controls, and the practices and procedures that constitute BSL-2 are designed to maximize safe working conditions for laboratory technicians working with agents of moderate risk to people and the environment. Biosafety Level 2 is appropriate when work is done with any human-derived blood, body fluids, tissues, or primary human cell lines where the presence of an infectious agent may be unknown. Primary hazards to personnel working with these agents relate to accidental percutaneous or mucous membrane exposures, or ingestion of infectious materials. Extreme caution should be taken with contaminated needles or sharp instruments. Procedures with aerosol production or high splash potential may increase the risk of personnel exposure and therefore must be conducted in primary containment equipment, or in devices such as a BSC or safety centrifuge cups. Other primary barriers should be used as appropriate, such as splash shields, face protection, gowns, and gloves. Secondary barriers such as handwashing sinks and waste decontamination facilities must be available to reduce potential environmental contamination.
- **Biosafety Level 3(BSL3)** BSL-3 is suitable for work with infectious agents which may cause serious or potentially lethal diseases as a result of exposure by the inhalation route. At Biosafety Level 3, more emphasis is placed on primary and secondary barriers to

protect personnel in contiguous areas, the community, and the environment from exposure to potentially infectious aerosols. For example, all laboratory manipulations should be performed in a BSC or other enclosed equipment, such as a gas-tight aerosol generation chamber. Secondary barriers for this level include controlled access to the laboratory and ventilation requirements that minimize the release of infectious aerosols from the laboratory. The UTHSC BSL3 laboratory is located in a restricted access area and may only be entered after approval from the BSL3 Facility Manager.

- **BIOHAZARD SYMBOL**



The above symbol is typically referred to as the standard BIOHAZARD SYMBOL. The lettering and symbol are typically in black or dark print against an orange or red-orange background. This BIOHAZARD SYMBOL is a notification to personnel that the item or contents may present a possible occupational exposure, and that appropriate precautions should be observed.

This BIOHAZARD SYMBOL should be printed on, or affixed to the following:

- containers of regulated waste;
- refrigerators or freezers used to store blood or OPIM;
- containers used to store, dispose of, or transport blood or OPIM.

The BIOHAZARD SYMBOL label does not need to be placed on the following:

- blood and blood products labeled as to their contents that have been released for transfusion or clinical use;
- individual containers of blood or OPIM if placed in a larger labeled container;
- decontaminated REGULATED WASTE; or containers or bags which are red in color

B. Handwashing

- Employees will wash their hands and any exposed skin areas with soap and water immediately or as soon as feasible upon contact with blood, certain body fluids, or OPIM.
- Employee's mucous membranes that become exposed will be flushed thoroughly with water or equivalent substitute immediately or as soon as feasible.
- Upon removal of gloves or other Personal Protective Equipment, employees will use soap and water to wash their hands immediately or as soon as feasible.
- Should handwashing facilities be unavailable, the employee will use either an antiseptic cleanser or towelette; hands will be subsequently washed with soap and water as soon as possible.

C. Handling of Sharps

- Employees will use OSHA approved needle safety devices (retractable, blunted, safety guard, etc.) in accordance with OSHA regulation 29 CFR 1910.1030 and Tennessee Code 50-3-203(e).
- Contaminated needles and other contaminated sharps will not be removed or recapped unless the employer can verify and establish that no alternative method is practical or that the above guideline is required by a specific medical procedure. Needle recapping or removal deemed necessary by the employer must be performed by the employee utilizing mechanical means or a one-handed "scoop" technique.
- Employees will place contaminated sharps in appropriate, designated containers until properly processed. These containers must be puncture resistance, labeled or color coded, and leak-proof on the sides and bottom. If containing "reusable" sharps, such sharps containers should not be stored or processed in a manner which would require an employee to reach, by hand, into the container where these sharps have been placed.

D. Personal Hygiene

- Employees will not eat, drink, smoke, apply cosmetics or lip balm, or handle contact lenses in work environments where risk of exposure may occur.
- Employees will not store food or drinks in refrigerators, freezers, shelves, cabinets or on countertops or bench tops where blood or OPIM are present.

E. Exposure Minimization

- Employees will perform all procedures involving blood, body fluids, or OPIM in such a manner as to minimize splashing, spraying, spattering, and aerosolization by these substances.
- Employees will not utilize mouth pipetting.
- Employees will use biocontainment equipment whenever aerosolization may occur.

F. Specimens

- Specimens of blood, body fluids, or OPIM will be placed in a designated container that prevents leakage during collection, handling, processing, storage, transport, or shipping.
- This container will be labeled with the BIOHAZARD SYMBOL or color coded in red and closed prior to storage, transportation, or shipping.
- Should contamination of the primary container occur, it must be placed inside a second container that prevents leakage and is also labeled or color-coded according to standard requirements.

- If a specimen could puncture the primary container, the primary container must be placed within a second container that is puncture resistant and labeled or color-coded according to standard requirements.

G. Infectious Waste Disposal

- All contaminated materials to be collected and disposed of through the certified medical waste disposal company under contract with UTHSC, are placed in RED bags or red containers and labeled. Information regarding the current waste disposal company under contract can be obtained by contacting the UTHSC Safety Affairs Office at 448-4873.
- All contaminated materials to be autoclaved followed by disposal into the regular trash collection system are to be placed in ORANGE Bags labeled with the BIOHAZARD SYMBOL and a temperature sensitive label to indicate when it has been autoclaved.



H. Equipment

- Equipment may become contaminated with blood, body fluids, infectious agents or OPIM must be examined thoroughly before servicing or shipping.
- Such equipment, should be decontaminated unless the employer demonstrates that the procedure is not feasible for that equipment or portions of that equipment.
- Labels must be attached to the equipment stipulating which portion remains contaminated.
- This information must be communicated to all affected employees, service representatives, and manufacturers before handling, servicing or shipping.

I. Transport

All blood, infectious material or OPIM taken outside a laboratory must be transported in an approved container. For further information on approved containers, contact the Safety Affairs Office. Persons who ship infectious substances or diagnostic specimens are required by federal regulations to complete certification training. This training must be repeated every two years or whenever the regulations are revised. Contact the Safety Affairs Office at 448-4873 to receive the certification training materials.

3 STANDARD LABORATORY PRACTICES

3.1 GENERAL

The safe handling of infectious agents in research and clinical laboratories is described in the UT Health Science Center Campus Safety Manual. This manual outlines procedures for the safe handling of biologically hazardous agents according to CDC (BMBL) and NIH guidelines, to assure protection of laboratory, animal care, housekeeping, and emergency personnel. Chairs, principal investigators, and supervisors are responsible for assuring adherence to these guidelines by employees.

3.2 PERSONAL PROTECTIVE EQUIPMENT (PPE)

A. DEFINITION AND PROVISION

- PPE can be defined as ancillary body coverings designed to minimize or eliminate exposure to blood or OPIM.
- When the chance of occupational exposure exists, the University shall provide, at no cost to the employee, the appropriate PPE in assorted sizes for proper fit.

Examples: Gloves, gowns, laboratory coats, face shields or masks, eye protection, mouthpieces, resuscitation bags, N95 masks, or other ventilation devices.

B. APPROPRIATE PPE

PPE will be considered "appropriate" only if it does not permit blood or OPIM to pass through to or reach the employee's work clothes, street clothes, undergarments, skin, eyes, mouth, or other mucous membranes under normal conditions of use and for the duration of time which the protective equipment will be used. Appropriate PPE is determined by the supervisor and communicated to the employee during training.

C. ACCESSIBILITY and USE OF EQUIPMENT

The University shall ensure that appropriate PPE in a variety of sizes shall be readily accessible, at no cost, to employees including: hypoallergenic gloves, glove liners, powderless gloves, or other similar alternatives for those employees who are allergic to the gloves normally provided. Personnel must don appropriate PPE whenever working with blood, infectious materials or OPIM.

D. CLEANING, LAUNDERING, AND DISPOSAL OF PPE

PPE required by OSHA Standard shall be cleaned, laundered, and disposed of at no cost to the employee(s).

Contaminated Laundry:

- Shall be handled according to Standard Precautions.

- Shall be placed and transported in appropriately labeled color- coded bags or containers labeled with the BIOHAZARD SYMBOL.
- Employees who have contact with contaminated laundry must wear protective gloves or other appropriate personal protective equipment;
- Contaminated laundry includes PPE, but not clothing worn under PPE.
- All laundry services are handled by the University of Tennessee and employees are prohibited from removing soiled laundry from University property.

E. REPAIR, REPLACEMENT, REMOVAL

- PPE shall be repaired and/or replaced as needed, at no cost to the employee.
- If a garment is penetrated by blood or OPIM, the garment shall be removed immediately or as soon as feasible.
- All PPE shall be removed prior to leaving the work area.
- When PPE is removed it shall be placed in an appropriately designated area or container for storage, washing, decontamination, or disposal.

F. Types of PPE

• Gloves:

Gloves shall be worn:

- when it can be reasonably anticipated that the employee may have hand contact with blood or OPIM, mucous membranes, and non- intact skin.
- when performing vascular access procedures,
- when handling or touching contaminated items or surfaces.

Disposable (single use, exam) gloves such as surgical or examination gloves, shall be replaced as soon as practical when contaminated or as soon as feasible if they are torn, punctured, or when their ability to function as a barrier is compromised.

Disposable (single use, exam) gloves shall not be washed or decontaminated for re-use.

Utility gloves shall be discarded if cracked, peeling, torn, punctured, or otherwise exhibit signs of deterioration, or when their ability to function as a barrier is compromised.

Gloves must not be worn in public areas outside the laboratory, including hallways and offices.

• Masks, eye protection and face shields

Masks shall be worn alone or in combination with eye protection devices such as goggles or glasses, side shields, face shields, etc. whenever splashes, spray, splatter or droplets of blood or OPIM may be generated and eye, nose, or mouth contamination can be reasonably anticipated.

- **Gowns and other protective body clothing**

Appropriate protective clothing such as, but not limited to, long-sleeved gowns, aprons, long-sleeved lab coats, long-sleeved clinical jackets, or similar outer garments shall be worn when occupational exposure may occur. The type and characteristics of such protective clothing must be appropriate to the task and degree of exposure anticipated.

The supervisor is responsible for designating the appropriate PPE that employees should wear during specific treatments or tasks depending on the degree of exposure anticipated.

Surgical caps, hoods and/or covers or boots shall be worn in instances when gross contamination can reasonably be anticipated. (ex. autopsies, orthopedic surgery, etc.)

3.3 WORK SURFACE/WASTE CONTAINER CLEANING AND DISINFECTING

- A. An appropriate written schedule is required for cleaning and method of decontamination based upon the location and the facility, type of surface to be cleaned, type of contaminant present, and tasks or procedures being performed in the area.
- B. Contaminated work surfaces and equipment shall be decontaminated with an appropriate disinfectant:
 - After completion of each procedure
 - Immediately, or as soon as feasible, when surfaces are overtly contaminated
 - After any spill of blood or OPIM
 - At the end of each work-shift if the surface may have become contaminated
- C. Protective coverings such as plastic wrap, aluminum foil or imperviously backed absorbent paper used to cover equipment and environmental surfaces shall be removed and replaced as soon as feasible when they become overtly contaminated or at the end of a work shift or if they may have become contaminated during the shift.
- D. All bins, pails, cans and similar receptacles intended for reuse which have a reasonable likelihood of becoming contaminated with blood or OPIM shall be inspected and decontaminated on a regularly scheduled basis and decontaminated immediately or as soon as feasible upon visible contamination.
- E. For Medical Waste Disposal see section 2.2G

4 BASIC BLOODBORNE COMMUNICATION

UTHSC follows the CDC guidelines for handling of Bloodborne Pathogens. These guidelines are communicated to all employees who will have direct contact with blood and OPIM during the Bloodborne Pathogens Training Course. The full text for the CDC guidelines for handling of Bloodborne Pathogens can be found on the UTHSC Safety Affairs website: www.utmem.edu/safety. A brief synopsis is given here.

4.1 METHODS OF TRANSMISSION

A bloodborne pathogen is defined as a "pathogenic microorganism that is present in human blood and can cause disease in humans." These pathogens include, but are not limited to, Hepatitis B Virus (HBV), Hepatitis C Virus (HCV), and Human Immunodeficiency Virus (HIV).

Although malaria, syphilis and brucellosis are also examples of bloodborne diseases, OSHA's Final Rule focuses on exposure prevention to HBV, HCV and HIV.

Body Fluids/Substances Which May Contain Bloodborne Pathogens

- semen
- vaginal secretions
- cerebrospinal fluid
- synovial fluid
- pleural fluid
- pericardial fluid
- peritoneal fluid
- amniotic fluid
- saliva in dental procedures
- any body fluid visibly blood-contaminated
- any unfixed human tissue or organ
- HIV-containing cell or tissue cultures
- HIV-containing culture mediums
- blood or tissue from HIV or HBV infected research animal

4.2 EXPOSURE ROUTES

An exposure to blood and/or body fluids/substances requires very specific conditions.

- The fluid/substance must be directly introduced into the person's body. This means blood and/or body fluids substances must be introduced through the skin (percutaneous) or by contact with mucous membranes such as the eye, mouth, or nose.
- The primary potential risk for health care workers is a percutaneous or mucous membrane exposure to infected blood and body fluids/substances.
 - A percutaneous exposure occurs when body fluids substances are introduced through the skin. This can occur by being injured by a needlestick, sustaining a cut by a sharp object, or having blood and/or fluids/substances contaminate non-intact skin, that is, an existing wound, sore, broken cuticle, or chapped skin.
 - A mucous membrane exposure occurs when blood and/or body fluids/substances are splashed into the eye, mouth, or nose.
- There are no known cases of HIV developing after mouth-to-mouth resuscitation.

- HIV (and HBV) are not transmitted by casual contact or through intact skin.

4.3 STANDARD PRECAUTIONS

- The term ‘Standard Precautions’ represents a concept of exposure/infection control.
- **All blood and certain body fluids must be considered as potentially contaminated with bloodborne pathogens.**
- This concept is to be followed regardless of whether the health care worker knows the HBV, HIV or HCV status of the patient.
- Utilizing Standard Precautions is also beneficial in reducing the health care worker's exposure to other types of infection.

4.4 FACTORS INFLUENCING POTENTIAL INFECTION

The likelihood of infection after exposure to HIV, HBV or HCV depends on:

- the concentration of the virus (higher viral load =greater transmissibility of virus)
- the duration of the contact
- the presence of skin lesions on the hands of health care workers
- the immune status of the health care worker (for HBV)

Therefore, the employee needs to immediately and thoroughly wash hands and skin surfaces that are contaminated with:

- blood
- body fluids/substances containing visible blood
- other body fluids to which Standard Precautions apply

* Remember to wear protective barriers for any anticipated contact with any of these materials.

4.5 HEPATITIS B VACCINATION

Vaccination for the Hepatitis B virus (HBV) is available, at no cost to the individual, for all employees who have the potential for occupational exposure. The vaccine is administered through the UTHSC Occupational Health Service. Information addressing the safety, benefits, efficacy, and methods of administration are available from OHS. If a person decides to decline the Hepatitis B vaccination, they must sign the Hepatitis B Vaccine Declination form. The vaccination requirement is waived if the employee provides documentation that he or she has previously received the complete HBV vaccination series, or if antibody testing reveals that the employee is immune, or if the vaccine is contraindicated for medical reasons.

5 TRAINING

Employees shall be provided with a training program at the time of initial employment and periodic refresher training thereafter. Additional training will be provided when any modification in tasks or procedures occurs or following the institution of new tasks or procedures.

Training is the responsibility of the Chair, PI or supervisor. Training records must be documented and retained for 3 years.

The training program includes:

- An accessible copy of the regulatory texts appropriate for the occupational tasks involved including a current copy of the BMBL, NIH guidelines, any applicable CFRs and an explanation of all applicable regulations regarding exposure to occupational bloodborne disease.
- Explanation of, and access to, copies of the appropriate Laboratory Safety Manuals, Exposure Control Policies and the necessary Appendices.
- A general explanation of the epidemiology and symptoms of bloodborne disease and any other infectious materials to which the individual may have exposure.
- An explanation of the mode of transmission of bloodborne pathogens and other common microbial pathogens.
- An explanation of the appropriate methods for recognizing tasks with risk of exposure.
- An explanation of the use and limitations of practices that will prevent or reduce exposure including, appropriate engineering controls, work practices, and personal protective equipment.
- Information on the types, proper use, location, removal, handling, decontamination and/or disposal of personal protective equipment;
- An explanation of the signs and labels and/or color-coding that is required by applicable regulations.
- Posting and availability of emergency phone numbers and emergency response procedures.
- A detailed explanation of spill containment and spill decontamination procedures.
- An explanation of the methods of waste decontamination and disposal specific to the tasks involved in the laboratory in which the individual will be working.
- Information on the hepatitis B vaccine, including information on its efficacy, safety, and the benefits of being vaccinated.
- An explanation on the medical and notification procedures to follow if an exposure incident occurs, including the method of reporting the incident and the medical follow-up and counseling that will be made available.
- An opportunity for interactive questions and answers with the person responsible for the training session.

If you feel you are not receiving the appropriate safety training for your duties, contact the UTHSC Safety Affairs Office at: 448-4873.

6 RECORD-KEEPING AND DOCUMENTATION

The University will establish and maintain an accurate record for each employee in accordance with current regulatory requirements. (As of July 1st, 2004 the current regulatory requirements are 3 years.) The following records pertain to this statement:

- The name and social security number of each employee
- Medical Records
- Training Records
- Transfer Records

Record Availability:

Employee medical records and training records are confidential and are maintained in accordance with 29 CFR 1910.1020. Medical and training records will only be provided upon request for examination and copying to the subject employee, to anyone having written consent of the subject employee, and to the Assistant Secretary of OSHA.

7 ABBREVIATIONS

BBP	Blood Borne Pathogen
BMBL	CDC publication: Biosafety in Microbiological and Biomedical Laboratories
BSL	Biosafety Level
BSO	Biosafety Officer
CDC	Centers for Disease Control
CLIA	Clinical Laboratory Improvement Amendments
HBV	Hepatitis B Virus
HCV	Hepatitis C Virus
HIV	Human Immunodeficiency Virus
OHS	Occupational Health Service (University of Tennessee, HSC)
OHSP	Occupational Health and Safety Program (University of Tennessee, HSC)
OPIM	Other Potentially Infectious Materials
OSHA	Occupational Health and Safety Administration (US Government)
PAPR	Positive Air Pressure Respirators
PEP	Prophylaxis and Exposure Protocol
PI	Principal Investigator
PPD	Purified Protein Derivative (Tuberculosis skin test)
PPE	Personal Protective Equipment
SOP	Standard Operating Procedure
TB	Tuberculosis

UTHSC University of Tennessee Health Science Center
IACUC Institutional Animal Care and Use Committee

8 TREATMENT FOR EXPOSURE

- Employees of UTHSC work in a variety of environments on several different sites throughout the medical community. It is important that **ALL** employees know what to do and who to contact in the event of an exposure occurs. This information should be communicated during initial and annual training. Supervisors will facilitate all post-exposure treatment protocols detailed in laboratory safety manuals and the CDC guidelines for handling Bloodborne Pathogens.
- Following the initial first aid (clean the wound, flush eyes or other mucous membrane, etc.) immediately inform your supervisor and follow the exposure protocol for the site where the exposure occurred. Contact information for reporting and occupational exposure at each site is provided below.**
- If the exposure occurred off UTHSC campus, after treatment has occurred you must report the exposure to UTHSC Occupational Health Services at 448-5630. On holidays and weekends contact OHS on the following business day. (For treatment of an exposure that has occurred on UTHSC campus call the number below at any time).

TREATMENT SITES

Treatment Site	Daytime	After Hours
UTHSC	University Health Services 448-5630	Pager: 533-5262 Barry Handy
BAPTIST HOSPITAL (East)	Employee Health (8am-4pm) 766-5100	Emergency Room 226-3028
LEBONHEUR HOSPITAL	Associate Health (8am-4pm) 572-3327	Emergency Room 572-3112
METHODIST UNIVERSITY HOSPITAL	Associate Health (7am-4pm) 726-7784	Emergency Room 726-7600 (operator)
REGIONAL MEDICAL CENTER (THE MED)	Occupational Health (7am-5pm) 545-7166	Emergency Room 545-7826
ST. FRANCIS HOSPITAL		Emergency Room 765-2180
ST. JUDE'S HOSPITAL	Stick beeper (8am-4pm) 418-0911	ID Attending on Call Operator: 495-3300
VA HOSPITAL	Employee Health (8am-5pm) 528-8990 ext 5538	Emergency Room 528-8990 ext 5454

APPENDIX A

Forms

HEPATITIS B VACCINE DECLINATION

I understand that due to my occupational exposure to blood and Other Potentially Infectious Material (OPIM) I may be at risk of acquiring Hepatitis B Virus (HBV) infection.

I have been given the opportunity to be vaccinated with Hepatitis B vaccine, at no charge to myself. However, I decline Hepatitis B vaccination at this time. I understand that by declining this vaccine I continue to be at risk of acquiring Hepatitis B, a serious disease.

If in the future I continue to have occupational exposure to blood or OPIM and I want to be vaccinated with Hepatitis B vaccine, I can receive the vaccination series at no charge to me.

Employee Signature

Date

Employee Name (print)

Job Classification

Employee's Department

APPENDIX B

Biosafety Levels 1 and 2

1. Biosafety Communication

This section includes additional Exposure Control information that is specific to occupational or educational exposures that may be encountered in a Biosafety Level 1 (BSL1) or 2 (BSL2) facility. It is intended as a supplemental guideline to the general UTHSC Exposure Policy and employees working in a BSL 1 or 2 facility should be familiar with the content. In addition, before any employee begins to work in a BSL 1 or 2 facility, all UTHSC required pre-employment training, vaccinations, and other requirements must be met and documented.

Authority and responsibility for biosafety, for compliance with the UTHSC Employee Exposure Control Policy and laboratory specific policies, and for documentation lies with the director of the laboratory (i.e. course director or principal investigator). Each laboratory should maintain a Biosafety Manual which contains all applicable UTCHS and laboratory specific policies and procedures.

2. Exposure Determination

BSL 1 may apply to educational or biomedical research laboratory settings using organisms classified as BSL 1 agents in the CDC BMBL. Such agents are not known to consistently cause disease in healthy adults and pose minimal infection risk to individuals working in the laboratory if standard microbiological practices, particularly good hand hygiene, are routinely employed.

BSL 2 may also apply to both educational and research laboratory settings using organisms classified as BSL 2 agents in the CDC BMBL. Such agents pose infection hazards related to accidental percutaneous injury, mucous membrane splashes, or ingestion. Risks are minimized using work practice controls and workplace design features to prevent such exposures.

3. Methods of Compliance

A. Facilities

In general, BSL 1 laboratory facilities should have the following design features to ensure compliance with BSL 1 guidelines:

- Laboratories should have locking doors for access control.
- Each laboratory should have a readily accessible sink for handwashing.
- Walls and flooring must be easily cleaned and decontaminated as necessary (e.g. floors should be non-carpeted).
- Benchtops should be water impervious and moderately resistant to heat, organic solvents, acids, alkalis, and disinfecting chemicals.
- Laboratory furniture should support the intended use. Spaces between benches, cabinets, and equipment must be accessible for cleaning.
- Space should be adequate to ensure that there is no compromise to safety of employees working in the laboratory

BSL 2 laboratories must meet these requirements and in addition must have the following:

- Properly installed and at least annually inspected biological safety cabinets for use in procedures with a potential for creating aerosols or splashes.
- A properly maintained eyewash station.
- Adequate illumination to prevent visual impediments.
- Note that there are no specific ventilation requirements; however, new facilities should consider mechanical ventilation systems that provide an inward air flow without recirculation to spaces outside of the laboratory.
- Consideration should be given to locating laboratories away from public access areas.

B. Work practices

For BSL 1 laboratories, standard microbiological practices include the following:

- Access to the laboratory should be limited or restricted by the course director or the principal investigator when experiments or work with cultures or specimens is in progress.
- Employees must wash their hands after handling potentially viable materials, after removing soiled gloves, and before leaving the laboratory.
- Eating, drinking, smoking, handling contact lenses, applying cosmetics including lip balm, and storing food or food containers are not permitted in the laboratory.
- Mouth pipetting is strictly prohibited. Mechanical pipetting devices must be used.
- UTHSC policies for safe handling and disposal of sharps must be followed.
- Procedures must be performed to minimize the creation of splashes or aerosols (e.g. use of plastic shields where appropriate).
- A biohazard sign should be posted at the entrance of a BSL 1 laboratory using infectious materials.
- An integrated pest management service must be in place as described in BMBL to prevent inadvertent dissemination of viable materials by insects and other pests.

For BSL 2 laboratories, all standard microbiological practices pertaining to BSL 1 laboratories apply, but in addition:

- For persons who are at increased risk of acquiring infection by or who may have serious consequences of infection by the agent(s) used in the laboratory may have a determination made by a responsible director that disallows their entry into the laboratory.
- The director may set additional requirements for entry into the laboratory (e.g. hazard communication, training, immunization).
- The posted biohazard sign must contain agent specific information as defined in BMBL.
- A high degree of precaution must be taken with all sharps and potential sharps as defined in the UTHSC Exposure Control Policy (e.g. use of safety needles).

- Any type of potential exposure to infectious material must be reported to OHS in accordance with UTHSC policies.

4. Personal Protective Equipment

BSL 1 laboratories should adhere to the following general PPE guidelines:

- Laboratory coats, gowns, or uniforms should be worn over street clothes to prevent contamination and should be removed before exiting. All protective clothing must be disposed of in the laboratory or laundered by the institution and should never be taken home by personnel.
- Gloves should be worn if skin on the hands is broken or if a rash is present, and latex-free, non-powdered gloves should be available. Gloves should be removed and hands should be washed before exiting.
- Persons who wear contact lenses in the laboratory should wear protective eye covering (e.g. goggles, face shield), and protective eyewear should be worn if splashes of infectious materials are anticipated.

BSL 2 laboratories should adhere to all BSL 1 PPE guidelines and in addition:

- Gloves should be worn whenever hands may contact potentially infectious materials, contaminated surfaces, or equipment. Contaminated gloves should not come into contact with clean non-contaminated surfaces and should be removed and followed by handwashing before exiting.

5. Work surface, Waste, and Disinfection

For BSL 1 laboratories:

- Work surfaces must be decontaminated after each student laboratory session or at the conclusion of a work day in a research laboratory using 10% bleach or another approved disinfectant. Further, spills of potentially viable materials must be decontaminated and cleaned in accordance with UTCHS policies.
- Cultures, stocks, and other regulated infectious waste must be disposed of in accordance with UTCHS policies for handling of infectious waste.

For BSL 2 laboratories, all BSL 1 policies apply and in addition:

- Consideration should be given to having an on-site decontamination method available for disposal of culture amplified human pathogens.

6. Medical Surveillance

For BSL 1 laboratories, no special medical surveillance is necessary.

For BSL 2 laboratories, baseline and periodic serum samples may be acquired and maintained for use in assessing possible exposures as determined necessary by the laboratory director.

For both BSL 1 and 2 laboratories, any accidental exposure must be managed and documented in accordance with the UTHSC Employee Exposure Control Policy.

7. Training

Employees working in BSL 1 or 2 laboratories must receive initial biosafety training as defined in the UTHSC Employee Exposure Control Policy and receive periodic retraining thereafter. For BSL 2 laboratories, the director may set additional training requirements specific to the laboratory (e.g. agent specific information). Documentation of training must be maintained by the responsible director for the laboratory and be readily available to UTHSC upon request.

APPENDIX C

Biosafety Level 3

1. Biosafety Communication

This section includes additional Exposure Control information that is specific to occupational hazards encountered in a Biosafety Level 3 Facility. It is intended as a supplemental guideline to complement the general UT Exposure Policy and should be addressed with personnel working in the BSL3 facility. Before personnel are granted access to the BSL3 facility, they must be trained and certified by the BSL3 facility manager, complete the BSL3 medical consultation with OHS and have all vaccinations and background tests.

The BSL3 Laboratory Manual contains detailed information and Standard Operating Procedures that have been designed to minimize the potential for exposure of BSL3 personnel to infectious agents. The Facility itself has been designed to prevent the release of infectious agents in the event of an accident within the facility. Additionally the UTHSC facility has been designed to prevent unauthorized access to infectious agents, to further guard against a public exposure to infectious agents used in the facility. Any release of infectious agents from the facility is covered in the UTHSC BSL3 Emergency Incident Response Plan. This plan details the personnel roles, lines of responsibility and the coordination between local Fire, Police, Health and EMA services to access and minimize public exposure. All UTHSC BSL3 Plans are part of the UTHSC BSL3 Information Guide.

2. Exposure Determination

OSHA defines occupational exposure as reasonably anticipated skin, eye, mucous membrane, or parenteral contact with blood or OPIM that may result from the performance of an employee's duties. In the BSL3 facility exposure can occur via aerosolization of infectious organisms. Infections in the BSL3 laboratory are generally caused by the unintentional or unrecognized production of aerosols containing the microorganism. Some aerosolized droplets are large ($>5\mu\text{m}$) and can settle rapidly to contaminate clothing, skin and bench tops, but the most dangerous aerosols are those that produce so called droplet nuclei. These are particles which are $<5\mu\text{m}$ in size and can remain suspended in the air almost indefinitely unless removed by controlled airflow. These infectious droplet nuclei are capable of entering a pulmonary alveolus and establishing a primary site of infection. Therefore, an occupational exposure will also include any situation where an aerosolization or spill has occurred outside the biological safety cabinet when personnel are present. If personnel are wearing personal HEPA filtered equipment then they will not be considered to be exposed and will not require treatment.

3. Methods of Compliance

BSL3 Standard Operating Procedures are clearly described in the BSL3 Laboratory Manual. These procedures include standard laboratory precautions, engineering, and work practice controls including: handwashing, personal hygiene, PPE, facility specifications, sharps, handling of infectious cultures or specimens, shipping and receiving, spill response, decontamination,

facility maintenance, medical emergencies, equipment operation and maintenance, select agent use and animal handling.

4. Personal Protective Equipment

Personal Protective Equipment (PPE) is an important part of BSL3 Safety. An SOP for proper PPE use is included in the BSL3 Laboratory Manual. Briefly, all BSL3 personnel don a full body Tyvek suit with feet and hood, an N95 mask, head covering and nitrile gloves fastened appropriately to overlap suit. When appropriate a HEPA filtered hood and respirator unit is worn. All protective clothing, including primary nitrile gloves, is to remain on while in the BSL3. During work with infectious agents in the Biological Safety Cabinet, a second pair of gloves is always worn and removed before hands are removed from the biological safety cabinet. Before exiting the facility personnel chemically decontaminate their primary gloves before entering the anteroom. Proper removal of PPE occurs in the anteroom and personnel wash their hands after exiting the anteroom. Mask fit tests are conducted annually for all personnel by OHS.

5. Work surface, Waste, and Disinfection

Work surface, Waste handling and disinfection procedures are described extensively in the BSL3 Laboratory Manual. All personnel must be trained and familiar with these SOPs before commencing work in the BSL3. Briefly, work surface decontamination is the responsibility of the individual users on a daily basis. Work surfaces are always decontaminated before exiting the facility. Additionally, floors, countertops, and equipment surfaces are chemically decontaminated monthly by the BSL3 Facility Manager. All waste is chemically decontaminated or autoclaved before it exits the facility. All items and equipment brought into the facility must be decontaminated before removal from the facility. A written log of all decontaminated waste is kept in the facility and monitored by the BSL3 Facility Manager. Decontamination procedures for a spill outside the biological safety cabinet are detailed in the BSL3 Laboratory Manual and are handled through the BSL3 Facility Manager.

6. Medical Surveillance

A medical surveillance program of BSL3 personnel is conducted by Occupational Health Services. The purpose of the program is to conduct initial and periodic health assessments of personnel, with attention devoted to factors or conditions associated with the biological agents in use in the UTHSC BSL3 Facility. All personnel working in the BSL3 are monitored for all agents in use in the facility, as there is the potential for accidental exposure even if the person is not directly working with the agent.

6.1 Initial Medical Consultation

All personnel working in the BSL3 must have an initial medical consultation with the OHS representative. At this time they must be advised of the infection and exposure risks associated with the infectious agents in use BSL3. Personnel will complete a medical history form, enroll in the TB surveillance program, provide a baseline serum sample and receive any required vaccinations. A copy of each person's medical history, vaccination records, PPD skin test records, exposure or incident response forms, and any other medical testing

records performed by OHS are maintained as described in the Record Keeping and Document Section of the UTHSC Exposure Control Policy.

6.2 TB surveillance

All employees working in the BSL3 must be enrolled in the TB surveillance program at Occupational Health Services. Employees working in BSL3 will be PPD tested before work commences in the BSL3 and every 6 months by an OHS representative. Employees that are skin test positive before commencing employment will require a chest x-ray in place of the skin test and will require a surveillance chest x-ray at the discretion of OHS. Additionally all personnel will be given the option to be tested for HIV, at no cost to the individual, because of the high morbidity and mortality associated with co-infection of TB and HIV.

6.3 Vaccinations

All personnel working in the BSL3 must be immunized with the Hepatitis B Vaccine and Tetanus Vaccine.

6.4 Baseline Serum Samples

A baseline serum sample will be collected and stored by OHS before work in the BSL3 can commence. Appropriate follow-up serum samples may be collected at periodic intervals to measure exposure-induced antibodies when indicated.

6.5 Medical Restrictions

Persons with immunosuppressive conditions or currently under drug therapy that suppresses the immune system are encouraged to inform OHS and the laboratory director.

Pregnancy: Exposure to certain infectious agents may result in adverse effects on the fetus if the mother becomes infected. Therefore women working in the BSL3 may have an increased risk for the fetus if they become pregnant. Women are encouraged to inform their supervisor and OHS if they are, intend to, or become pregnant.

Additionally all personnel will be given the option to be tested for HIV, at no cost to the individual, because of the high morbidity and mortality associated with co-infection of TB and HIV.

7. Training

BSL3 personnel receive initial training in BSL3 Laboratory Procedures, periodic refresher training, and any additional training that arises. Training requirements are detailed in the BSL3 Lab manual and Training Certification is recorded on form UT-BSL3-03. This form is maintained by the BSL3 Facility Manager, the Biosafety Officer and the Responsible Officer for the duration of the person's employment plus an additional 3 years post employment.

APPENDIX D

Animal Care

1. Biosafety Communication

Federal regulations require UTHSC to have an occupational health and safety program for all personnel that have exposure to research animals. All employees that have exposure to research animals should be included in this program. In addition, all service personnel should be included, who, by virtue of their work within animal facilities, come into contact with research animals or the facilities in which they are housed.

The Institutional Animal Care and Use Committee (IACUC) protocol form is the primary tool used to identify hazardous agents (biological, chemical, radiological) that are used in animal research projects. Hazards are identified and classified with respect to their degree and nature of risk. Potentials for exposure are considered for both the investigator's staff and the animal care staff. When hazardous agents are identified in a protocol, the IACUC requires detailed standard operating procedures to be prepared by the principal investigator (PI) and submitted to the Department of Comparative Medicine and the safety officer for approval before the protocol itself can be approved. The Safety Officer assists in assessing the potential risk of chemical and physical agents, and in outlining appropriate procedures to protect personnel from exposure. The PI has the primary responsibility for posting appropriate warnings and notifications, identifying cages or animals affected, and for informing the animal care supervisors and staff when hazardous agents are used in animals housed in the animal facilities.

For biological hazards, the biological safety officer reviews all protocols utilizing biological hazards and is present for discussion of pertinent protocols during IACUC meetings. The biological safety officer reviews Standard Operating Procedures (SOP) and guidelines and makes recommendations about appropriate procedures for handling biological agents. As with other hazards that are used in animals, the PI must provide detailed SOPs for handling infected animals and contaminated cages. When animals are ordered for an approved protocol in which a hazardous agent is used, an alert is placed on the cage card as additional notification to supervisors and animal care personnel that animals may have been exposed to hazards. The PI is responsible for ensuring that staff are familiar with SOPs and adhere to these policies.

2. Exposure Determination

All individuals with exposure to research animals must enroll in the Occupational Health and Safety Program (OHSP).

3. Methods of Compliance

Individuals may choose not to participate in the OHSP by so stating in writing. However, if any individual opts out of the OHSP or does not complete the OHSP questionnaire, that individual's access to research animals and the facilities in which they are housed will be denied. If an individual opts out and continues to work with animals, that action will be considered to be willful noncompliance and will result in suspension of animal use protocols associated with that work. Thus, it is the responsibility of the Principal Investigator of an animal use protocol to

ensure that all individuals that work with animals are enrolled in the OHSP. All Department of Comparative Medicine personnel must enroll in the OHSP as a condition of employment.

4. Personal Protective Equipment (PPE)

Personal protective equipment (PPE) is to be worn inside animal facilities to protect personnel from allergens and biological hazards, as well as to reduce the potential of introducing animal pathogens into the facility. Appropriate use of PPE is an important part of the University's Occupational Health and Safety Program as required by Federal regulations and accrediting agencies. PPE including gloves, shoe covers, gowns, lab coats, masks and head covers should be donned when entering the animal facility, changed when soiled or contaminated, and removed before leaving the animal care facilities. Once personal protective equipment (PPE) has been worn in animal facilities it not to be worn outside those facilities. Exiting or re-entering animal facilities while wearing PPE is a breach of occupational health policy and OSHA guidelines.

PPE should not be worn when transporting animals to and from the animal care facilities through public areas. When transporting animals between the animal facility and laboratories, transport containers should be decontaminated and covered appropriately.

5. Work surface, Waste and Disinfection

All animal biological waste generated from laboratories, animal surgery, animal necropsy, etc. is treated as regulated medical waste. This waste must be placed in red biohazard disposal bags and those bags placed into the covered medical waste cans in the necropsy coolers. Disposal of the medical waste cans is via the medical waste disposal company under contract with UTHSC. The facility supervisor is responsible for ensuring proper disposal of all regulated medical waste generated in that facility. In all animal facilities, standard operating procedures describe disinfection of work surfaces, animal procedure areas, and animal housing areas. In general quarternary ammonium disinfectants or chlorine dioxide products are used on all hard surfaces.

6. Medical Surveillance

Through a joint effort of the Office of Institutional Animal Care and Use and University Health Service, a web-based, comprehensive occupational health assessment program has been devised and implemented. This program elicits answers to detailed questions related to the extent and nature of exposure to animals and hazards, documents health histories, and forms risk assessments for participants. As implemented, individuals who are exposed to animals or animal facilities complete the detailed questionnaire. The program identifies risks and assigns personnel to risk categories. Records are generated for the Occupational Health Coordinator, summarizing the data obtained from the questionnaire. Following assessments, employees are asked to set an appointment with University Health Services for evaluation by the Occupational Health Coordinator, a nurse practitioner, or a physician. For new enrollees (e.g., new hires or newly enrolled employees) baseline assessments may included additional health histories; immunizations (e.g., for tetanus, rabies, hepatitis B, etc.); baseline diagnostic tests including CBC, UA, or blood chemistry; TB testing; or other diagnostic or preventive measures as deemed necessary by the assigned health care practitioner. Additional counseling regarding risk assessment, allergies, and disease prevention also may be ducted during appointments.

7. Training

The DCM provides in-service training seminars for all DCM employees on an annual basis. These in-service seminars cover primate safety; herpes B virus education and protection; allergy awareness; personal protective equipment; protection against hearing loss; appropriate methods for lifting; and chemical safety.

Special instruction and oversight is required for those employees working with nonhuman primates or hazardous agents. Personnel using nonhuman primates have been instructed about the most current procedure for dealing with bites, scratches, and exposure to bodily fluids as suggested by the CDC guidelines for these species, including current guidelines pertaining to herpes B virus.

APPENDIX E

Clinical Diagnostic Laboratories

1. Biosafety Communication

This section includes additional Exposure Control information that is specific to occupational hazards encountered in clinical diagnostic laboratories. A clinical diagnostic laboratory is one in which specimens from patients are analyzed and results are reported to an ordering physician or other authorized healthcare provider for use in diagnosis, prognosis or monitoring of disease. Clinical diagnostic laboratories operate at a minimum Biosafety 2 level and in select circumstances may operate at a Biosafety 3 level. Employees are expected to know the Biosafety Level for their workplace and to comply with all work practice requirements specific to that Biosafety level. In addition, clinical laboratories must comply with all safety and exposure control requirements for mandatory licensure by the State of Tennessee and certification by the Clinical Laboratory Improvement Amendments (CLIA) as well as voluntary accreditation by appropriate laboratory associations (e.g. College of American Pathologists (CAP), Joint Commission on the Accreditation of Health Care Organizations (JCAHCO)).

Employees of UTHSC may work in both UTHSC operated and UTHSC affiliated clinical diagnostic laboratories. In UTHSC operated clinical laboratories, employees are expected to comply fully with all policies defined in the UTHSC Exposure and Infection Control Plan as well as all policies applicable to clinical diagnostic laboratories defined in the UTHSC Safety Manual. In UTHSC affiliated clinical laboratories, employees are expected to familiar with the above UTHSC policies, but in addition, must be comply with the infection control, exposure control, and safety policies of the affiliated institution that are applicable to the clinical laboratory.

2. Exposure Determination

Occupational exposures to several types of hazardous materials may occur in the clinical diagnostic laboratory. Exposure determination and exposure management is defined in a number of specific laboratory safety policies:

- Exposure to chemicals: OSHA mandates that a Laboratory Chemical Hygiene Policy define actions for exposures to chemicals. In particular, the laboratory must maintain Materials Safety Data Sheets (MSDS) on each chemical, which contains relevant information on hazards and exposure management.
- Exposure to radiation: The Nuclear Regulatory Commission mandates that a Radiation Safety Plan be in place to monitor the workplace for contamination and employees for exposure to radioactive isotopes if used in laboratory assays.
- Exposure to bloodborne pathogens and other potentially infectious material: OSHA mandates that a system be in place to document exposure of employees to biological agents present in clinical diagnostic specimens or microbiologic cultures. Exposures may occur parenterally via a sharps injury; to skin, eye, or mucous membrane via a splash or

spill; or to the respiratory tract via aerosolization. Further, guidelines for management of employees based on exposure type must also be available.

All exposures must be documented and treated in accordance with institutional policies for the location where the exposure occurred. In UTHSC operated clinical laboratories, immediate reporting of exposures is required. All off campus exposures must be reported to UTHSC OHS the next business day for follow-up.

3. Methods of Compliance

Clinical diagnostic laboratories must comply with all regulatory and accreditation standards pertaining to infection control, exposure control and management, and laboratory safety. In addition, UTHSC operated clinical laboratories should comply with recommendations for BSL-2 or BSL-3 work practices, safety equipment (primary barriers), and facilities (secondary barriers) as appropriate to the laboratory setting. For UTHSC affiliated laboratories, UTHSC Departments having the affiliation must ensure and document compliance with such.

In particular, BSL-2 clinical diagnostic laboratories will:

- Employ standard laboratory practices (e.g. for hand hygiene, not performing non-lab related practices in the lab setting)
- Ensure limited access
- Post biohazard signs
- Use sharps precautions
- Use appropriate Personal Protective Equipment (PPE)
- Have an annually certified Biological Safety Cabinet for manipulations that may create splashes or aerosols, and for handling specimens or cultures with suspected BSL-3 pathogens
- Have a defined spill response plan for chemical and biological spills
- Manage the infectious waste stream in accordance with regulations and BMBL guidelines
- Have an autoclave available for disposal of BSL-3 agents and select agents identified incidentally from clinical specimens

BSL-3 clinical diagnostic laboratories will in addition to the above:

- Ensure controlled access
- Decontaminate all infectious waste onsite prior to disposal
- Decontaminate lab clothing before laundering
- Maintain a baseline serum sample on all employees for pre-event testing when post-event testing is required
- Ensure properly fit-tested respiratory protection is available (N-95 or equivalent) or ensure that proper training in use of Positive Air Pressure Respirators (PAPR) is documented

- Insure that facilities design is compliant with BMBL recommendations for BSL-3

4. Personal Protective Equipment

Personal protective equipment use in the clinical diagnostic laboratory is required as specified by OSHA Bloodborne Pathogens Standards, OSHA Tuberculosis Standards, CLIA safety standards, State of Tennessee Laboratory Facility licensure standards, accreditation guidelines, and BMBL recommendations. Each UTHSC operated clinical diagnostic laboratory must perform a risk assessment for all employee categories to define what types of PPE are required, and all required PPE will be provided at no cost to the employee. For UTHSC affiliated laboratories, each Department having the affiliation must ensure and document that a risk assessment has been performed and that each UTHSC employee working in the affiliated laboratory is aware of and is provided with the required PPE.

5. Work surface, Waste, and Disinfection

Work surfaces in a UTHSC operated clinical diagnostic laboratory must be maintained clean and free of clutter so as to not compromise quality or safety or work performed. All work surfaces are decontaminated at the end of each shift using 10% household bleach or other approved disinfectant. The infectious waste stream is segregated and managed in accordance with all local regulations and must be terminally decontaminated either off-site using a licensed waste management firm or preferably onsite, prior to being disposed of in a landfill. Select microbiological waste, in particular BSL-3 agents or select agents incidentally recovered from clinical samples, must be terminally decontaminated onsite prior to disposal or all subcultures must be shipped to an authorized public health laboratory for disposal. In a UTHSC affiliated laboratory, the Department with the affiliation must maintain documentation of compliance with work surface decontamination practices and waste management practices.

6. Medical Surveillance

Employees working in a UTHSC operated or affiliated BSL-2 clinical diagnostic laboratory must meet UTHSC immunization requirements for hiring, and annually thereafter, must obtain tuberculin skin test or other appropriate screening for tuberculosis exposure. Upon documented exposure to a specific specimen type or specific pathogen type, employees may undergo additional testing as necessary to screen for evidence of infection. Initial sample collection and testing may occur at the location where the exposure occurred, but follow-up by UTHSC OHS is required. Employees working in a BSL-3 clinical diagnostic laboratory must adhere to the medical surveillance policies for a BSL-3 laboratory (Appendix C).

7. Training

UTHSC employees working in a UTHSC operated or affiliated clinical diagnostic laboratory must receive initial training in all aspects of laboratory safety including training appropriate to the BSL for the laboratory location where they are engaged in laboratory functions, and must be re-trained annually thereafter. Documentation must be maintained by the laboratory facility

Safety Officer and be readily available to UTHSC upon request. For UTHSC affiliated laboratories, the Department having the affiliation is responsible for insuring that training is performed and training documentation is maintained as required.

APPENDIX F

Office Staff

1. Biosafety Communication

During the course of your administrative duties, you may have cause to enter into laboratories working with microorganisms classified as Biosafety Level 1 (BSL1) or 2 (BSL2) organisms. You should be aware of the use of these organisms and understand how exposure could occur and know how to prevent exposure when you are present in these labs. This section includes additional Exposure Control information that is specific to occupational exposures that may be encountered in a BSL1 or 2 BSL2 laboratory. It is intended as a supplemental guideline to the general UTHSC Exposure Control Policy.

2. Exposure Determination

BSL 1 may apply to educational or biomedical research laboratory settings using organisms classified as BSL 1 agents by the Centers for Disease Control in the BMBL handbook. Such agents are not known to consistently cause disease in healthy adults and pose minimal infection risk to individuals working in the laboratory if standard microbiological practices, particularly good hand hygiene, are routinely employed.

BSL 2 may also apply to both educational and research laboratory settings using organisms classified as BSL 2 agents in the BMBL handbook. Such agents pose infection hazards related to accidental percutaneous injury, mucous membrane splashes, or ingestion. Risks are minimized using work practice controls and workplace design features to prevent such exposures.

If you think you may have been exposed to an infectious organism, contact the director or PI for the laboratory where the exposure occurred and the UTHSC Safety Department (448-4873).

3. Methods of Compliance

A. Facilities

BSL 1 laboratory facilities should have the following design features to ensure compliance with BSL 1 guidelines:

- Laboratories should have locking doors for access control.
- Each laboratory should have a readily accessible sink for handwashing.
- Walls and flooring must be easily cleaned and decontaminated as necessary (e.g. floors should be non-carpeted).
- Benchtops should be water impervious and moderately resistant to heat, organic solvents, acids, alkalis, and disinfecting chemicals.
- Laboratory furniture should support the intended use. Spaces between benches, cabinets, and equipment must be accessible for cleaning.
- Space should be adequate to ensure that there is no compromise to safety of employees working in the laboratory

BSL 2 laboratories must meet BSL 1 requirements and in addition must have the following:

- Properly installed and at least annually inspected biological safety cabinets for use in procedures with a potential for creating aerosols or splashes.
- A properly maintained eyewash station.
- Adequate illumination to prevent visual impediments.
- Note that there are no specific ventilation requirements; however, new facilities should consider mechanical ventilation systems that provide an inward air flow without recirculation to spaces outside of the laboratory.
- Consideration should be given to locating laboratories away from public access areas.

B. Work practices

For BSL 1 laboratories, standard microbiological practices include the following:

- Access to the laboratory should be limited or restricted by the course director or the principal investigator when experiments or work with cultures or specimens is in progress.
- Employees must wash their hands after handling potentially viable materials, after removing soiled gloves, and before leaving the laboratory.
- Eating, drinking, smoking, handling contact lenses, applying cosmetics including lip balm, and storing food or food containers are not permitted in the laboratory. Food storage must be outside the work area in a separate cabinet or refrigerator.
- UTHSC policies for safe handling and disposal of sharps must be followed. Sharps, such as needles and razor blades must always be placed in labeled red sharps containers.
- Procedures must be performed to minimize the creation of splashes or aerosols (e.g. use of plastic shields where appropriate).
- A biohazard sign should be posted at the entrance of a BSL 1 laboratory using infectious materials.
- Current contact information for the Principle Investigator or Lab director should be posted on the door.

For BSL 2 laboratories, all standard microbiological practices pertaining to BSL 1 laboratories apply, but in addition:

- For persons who are at increased risk of acquiring infection by or who may have serious consequences of infection by the agent(s) used in the laboratory may have a determination made by a responsible director that disallows their entry into the laboratory.
- The director may set additional requirements for entry into the laboratory (e.g. hazard communication, training, immunization).
- The posted biohazard sign must contain agent specific information as defined in BMBL.
- A high degree of precaution must be taken with all sharps and potential sharps as defined in the UTHSC Exposure Control Policy (e.g. use of safety needles).

- Any type of potential exposure to infectious material must be reported to OHS in accordance with UTHSC policies.

4. Personal Protective Equipment (PPE)

If you are required to spend any time in a BSL1 or BSL2 laboratory or touch any of the laboratory items in the course of your duties (such as recording inventory numbers on laboratory equipment), you should wear a labcoat, gloves, and safety glasses if appropriate. ASK the PI or lab employee to provide you with appropriate attire.

BSL 1 laboratories should adhere to the following general PPE guidelines:

- Laboratory coats, gowns, or uniforms should be worn over street clothes to prevent contamination and should be removed before exiting. All protective clothing must be disposed of in the laboratory or laundered by the institution and should never be taken home by personnel.
- Gloves should be worn if skin on the hands is broken or if a rash is present, and latex-free, non-powdered gloves should be available. Gloves should be removed and hands should be washed before exiting. Gloves should not be worn in hallways or offices
- Persons who wear contact lenses in the laboratory should wear protective eye covering (e.g. goggles, face shield), and protective eyewear should be worn if splashes of infectious materials are anticipated.

BSL 2 laboratories should adhere to all BSL 1 PPE guidelines and in addition:

- Gloves should be worn whenever hands may contact potentially infectious materials, contaminated surfaces, or equipment. Contaminated gloves should not come into contact with clean non-contaminated surfaces and should be removed and followed by handwashing before exiting.

APPENDIX G

Patient Care

Infection Control for Healthcare Workers in a Patient Care Setting

1. Biosafety Communication

The primary purpose of infection control in a laboratory setting is to prevent accidental exposure of an employee to infectious agents being handled. In contrast, the purpose of infection control in a patient care setting is to both prevent transmission of infectious agents to health care workers, but also, equally importantly, to reduce the risk of acquisition of infection by patients in healthcare facilities thereby protecting patients, healthcare workers, healthcare trainees, and visitors.

Guidelines for Infection Control in health care settings are developed by the Hospital Infection Control Practices Advisory Committee at the CDC and integrated into JCAHO standards. The most recent guidelines may be found at :

<http://wonder.cdc.gov/wonder/prevguide/p0000419/p0000419.asp>. Each healthcare facility with which UTHSC is affiliated has an internal Infection Control Department and Infection Control Committee which are responsible for developing policies and procedures to comply with guidelines and standards.

2. Exposure Determination

The CDC guidelines rely on a two-pronged approach to “isolation” (i.e. the segregation of potentially harmful organisms from a possible vehicle of transmission). The first approach is termed “standard precautions”. These precautions protect against exposure of employees to organisms found in blood and body fluids of patients and are applied to all patients in a health care facility. The second approach is termed “transmission-based precautions”. These precautions protect against exposure of employees and other individuals in contact with the patient to likely sources of organisms based on the clinical presentation of a specific suspected or documented infection type or to colonizing organisms shed by certain routes.

3. Methods of Compliance

Compliance with all policies of the UTHSC Infection Control and Exposure Control Plan is mandatory. In addition, compliance with all Infection Control policies and procedures of an individual healthcare facility in which activities are performed is also expected. Compliance with standard precautions is achieved primarily through use of appropriate personal protective equipment including eye protection, face shields, and N-95 masks; through compliance with hand hygiene policies; and through proper use and disposal of approved sharps devices. These approaches are described in detail in the Exposure Control Policy.

Compliance with transmission-based precautions will strictly adhere to the Infection Control policies and procedures of the individual healthcare facility. These precautions are described in general terms below. Transmission-based precautions are designed for patients documented or suspected to be infected with pathogens for which additional precautions beyond standard precautions are needed to interrupt transmission. The three types of transmission-based precautions are:

- (1) airborne precautions
- (2) droplet precautions

(3) contact precautions

They may be combined for diseases that have multiple routes of transmission. Transmission-based precautions are always used in addition to standard precautions.

Airborne Precautions:

Airborne precautions are indicated for all patients with documented or suspected pulmonary or laryngeal tuberculosis, measles, varicella, disseminated zoster, severe acute respiratory distress syndrome (SARS) or smallpox. They are also indicated for immunosuppressed patients with localized zoster. These infections are transmitted by droplet nuclei (<5 µm in diameter) that can remain suspended in the air and travel long distances. Airborne precautions include the following:

- Place the patient in a private room with monitored negative air pressure in relation to surrounding areas. The room air must undergo at least six exchanges per hour.
- Air from the patient's room should be exhausted directly to the outside, away from air intakes, and not recirculated. If outdoor exhaust is not possible, air must undergo high-efficiency filtration before returning to the general ventilation system.
- The door to the patient's room must remain closed.
- All persons entering the room must wear a personal respirator that filters 1 µm particles with an efficiency of at least 95%. The following caveats apply:
 - Health care workers must be individually fit-tested to determine the type and size of mask that will provide optimal fit with minimal leakage.
 - Healthcare workers that have documented immunity to varicella do not need to wear a respirator when entering the room of a patient with varicella or zoster.
 - Healthcare workers that have documented immunity to measles (i.e., rubeola virus infection) do not need to wear a respirator when entering the room of a patient with measles.
 - When entering rooms of patients with suspected or proven SARS, it is recommended that healthcare workers use personal air purification respirators (PAPR) or place a surgical mask over their respirator mask.
- The patient should not be transported from the room unless absolutely necessary. If transport elsewhere is necessary, the patient should wear a standard surgical mask (NOT a respirator mask) while out of the room.
- Gowns and gloves are not usually necessary unless otherwise indicated. However, patients with varicella, zoster, SARS or smallpox require contact precautions in addition to airborne precautions.
- A patient in airborne precautions because of suspected tuberculosis should remain so until tuberculosis can be ruled out.
- A patient with confirmed pulmonary or laryngeal tuberculosis should remain in airborne precautions until he/she is clinically improving while receiving effective antituberculous therapy and has 3 consecutive sputum smears on separate days with no detectable acid-fast bacilli.

Droplet Precautions:

Droplet precautions are used to prevent transmission of large-particle (droplet) aerosols, which are produced when the infected patient talks, coughs, or sneezes, and during some procedures (e.g., suctioning and bronchoscopy). Droplets are larger than droplet nuclei and do not remain suspended in the air or travel long distances. Infectious droplets may transmit disease if they land on the mucosal surfaces of the nose, mouth, or eye of a susceptible host. Examples of illnesses requiring droplet precautions are invasive *Haemophilus influenzae* type b and meningococcal infections, pertussis, influenza, mumps and rubella.

Droplet precautions include the following:

- Place the patient in a private room. No special air handling is necessary. The door to the room may remain open. If private rooms are not available, patients with the same disease can be placed in the same room.
- Health care workers should wear standard surgical masks when within 3 feet of the patient.
- If the patient requires transport out of the room, he/she should wear a standard surgical mask while out of the room.
- Gowns and gloves are not usually necessary unless otherwise indicated.

Contact Precautions

Contact precautions are intended to prevent the transmission of organisms from an infected or colonized patient through direct (touching the patient) or indirect (touching contaminated objects or surfaces in the patient's environment) contact. Contact precautions are indicated for all patients with *Clostridium difficile* enteritis and for diapered or incontinent patients with other acute infectious diarrheal diseases (e.g., infections with *Shigella* sp., *Salmonella* sp., rotavirus, hepatitis A virus, etc.) and other infections transmitted by the fecal-oral route. Some other indications for contact precautions include: respiratory syncytial virus infections in infants and young children; neonatal, disseminated, or severe primary mucocutaneous herpes simplex virus infections; infection or colonization with vancomycin-resistant *Enterococcus* sp.; and infestation with lice or scabies. Many institutions also require contact precautions for patients who are colonized with selected antibiotic-resistant organisms, such as methicillin-resistant *Staphylococcus aureus* or multidrug-resistant gram-negative bacteria. Patients with varicella or disseminated zoster require both contact and airborne precautions.

Contact precautions include the following:

- The patient should be placed in a private room. If a private room is not available, patients infected with the same organism may be placed in the same room (termed cohorting).
- Gloves should be worn when entering the patient's room and removed before leaving the patient's room.
- Gowns should be worn if:
 - The health care worker anticipates substantial contact of his or her clothing with the patient OR with surfaces in the patient's environment;
 - The patient is incontinent or has diarrhea, a colostomy, an ileostomy, or uncontrolled wound drainage;

- There is any other situation creating a increased risk of contact with potentially infective material.
- Gowns should be removed before leaving the room, taking care not to contaminate clothing while removing the gown.
- After gloves are removed, hand hygiene must be performed immediately using an alcohol-based hand rub OR by washing with antimicrobial soap and water. Care should be taken to prevent recontamination of the hands before leaving the room.
- In the setting of a known outbreak of C. difficile-associated diarrhea, washing of hands (to mechanically remove infectious spores) is preferred over use of alcohol-based hand rub (which does not kill spores).
- Non-critical patient care equipment (e.g., stethoscopes, blood pressure cuffs) should remain in the patient's room and not used for other patients.
- Transport of the patient from the room should be minimized.

4. Personal Protective Equipment

PPE used in direct patient care activities will be provided by healthcare facilities and includes: gloves (non-latex preferred), surgical masks, eye protection, face shields, fluid-resistant gowns, N-95 (or equivalent) masks, and other protective clothing appropriate to specific facility departments. Appropriate use of PPE is defined in the ECP. Fit-testing for N-95 masks is required and may be performed at UTHSC Employee Health Services. Personnel must be fit-tested for the exact brand and size mask used in daily occupational duties.

5. Work surface, Waste, and Disinfection

UTHSC employees are expected to follow specific healthcare facility policies for infectious waste disposal and for surface disinfection.

6. Medical Surveillance

Medical surveillance activities are conducted by UTHSC. If an employee elects to have surveillance activity performed at an affiliated healthcare facility (e.g. TB skin test, hepatitis titer), it is the employee's responsibility to forward official documentation of those procedures and results to UTHSC Employee Health Services.

7. Training

Training in basic healthcare facility infection control practices is the responsibility of each UTHSC Department. In addition, students, residents, fellows, faculty, and staff may be required to participate in annual training as required by JCAHO at individual health care facilities in which they perform clinical activities.

APPENDIX H**Policies**

The University of Tennessee Health Science Center

Memphis, TN

POLICY ON EXPOSURE CONTROL

Effective Date: January 2006

I. INTRODUCTION

UTHSC is committed to providing a safe and healthy workplace for everyone. This Exposure Control Policy summarizes UTHSC's efforts to eliminate or minimize occupational exposure to bloodborne pathogens, infectious agents, and Other Potentially Infectious Materials (OPIM). The full text of UTHSC's efforts can be found in the UTHSC Exposure and Infection Control Plan (EICP).

The EICP contains information concerning the policies and procedures with regard to:

- Exposure Determination
- Implementation of various methods of exposure control including;
 - Universal precautions
 - Engineering Controls
 - Standard Laboratory Precautions
 - Personnel Protective Equipment
 - Housekeeping
- Blood Borne Pathogen Communication
- Labeling/Hazard Communication
- HBV Vaccination
- Training
- Record Keeping
- Evaluating exposure incidents

The Department of Safety Affairs has been designated as the responsible party for the completion, implementation and maintenance of the Exposure and Infection Control Plan. As an employee or student of UTHSC, this Exposure Control Policy, Infection Control Policies and the entire Exposure and Infection Control Plan are available to you, upon request, during normal business hours, and on the UTHSC Safety Affairs website: www.utmem.edu/safety.

2 EXPOSURE DETERMINATION

Supervisors are responsible for determining which employees and students have potential for occupational exposure to bloodborne pathogens, infectious agents or OPIM, and for providing these individuals with proper training.

3 EXPOSURE CONTROL

Engineering and work practice controls are used as a primary means of eliminating or reducing exposure to infectious agents. In the event that a risk of occupational exposure still exists after implementation of engineering and work practice controls, the employer must provide and ensure that employees utilize personal protective equipment as additional protection.

The safe handling of infectious agents in research and clinical laboratories is described in the UT Health Science Center Safety Manual. This manual outlines procedures for the safe handling of biologically hazardous agents according to CDC (BMBL) and NIH guidelines, to assure protection of laboratory, animal care, housekeeping, and emergency personnel. Chairs, principal investigators, and supervisors are responsible for assuring adherence to these guidelines by employees and students

PPE can be defined as ancillary body coverings designed to minimize or eliminate exposure to blood or OPIM. When the chance of occupational exposure exists, the University shall provide, at no cost to the employee, the appropriate PPE in assorted sizes for proper fit. Examples: Gloves, gowns, laboratory coats, face shields or masks, eye protection, mouthpieces, resuscitation bags, N95 masks, or other ventilation devices.

PPE will be considered "appropriate" only if it does not permit blood or OPIM to pass through to or reach the employee's work clothes, street clothes, undergarments, skin, eyes, mouth, or other mucous membranes under normal conditions of use and for the duration of time which the protective equipment will be used. Appropriate PPE is determined by the supervisor and communicated to the employee during training.

An appropriate written schedule is required for cleaning and method of decontamination based upon the location and the facility, type of surface to be cleaned, type of contaminant present, and tasks or procedures being performed in the area. Cleaning and decontamination of laboratory work surfaces are the responsibility of occupants of the laboratory. UTHSC housekeeping staff will not clean bench top or cabinet surfaces.

BLOODBORNE PATHOGEN COMMUNICATION

All employees who have the potential to come into direct contact with blood and/or other bodily fluids must undergo documented periodical Blood borne Pathogens safety training. It is the responsibility of supervisors to ensure that their employees are in compliance with this

requirement. The full text on blood borne safety can be found in the Blood borne Pathogens Policy, located at www.utmem.edu/unheal.

LABELING/HAZARD COMMUNICATION

All employees whose job duties involve working with blood, bodily fluids, infectious agents, and/or OPIM must undergo documented periodical Hazard Communication training. It is the responsibility of supervisors to ensure that their employees are in compliance with this requirement. All storage vessels containing any of these items must be labeled to identify the contents of the vessel.

HEPATITIS B VACCINATION

Hepatitis B vaccination is available at no cost to all employees who have the potential for occupational exposure. The vaccine is administered through the UTHSC Occupational Health Service (OHS). Information addressing the safety, benefits, efficacy, and methods of administration are available from OHS. If a person decides to decline the hepatitis B vaccination, they must sign the Hepatitis B Vaccine Declination form. The vaccination requirement is waived if the employee provides documentation that he or she has previously received the complete HBV vaccination series, or if antibody testing reveals that the employee is immune, or if the vaccine is contraindicated for medical reasons.

TRAINING

Employees shall be provided with a training program at the time of initial employment and periodically thereafter. Additional training will be provided when any modification in tasks or procedures occurs or following the institution of new tasks or procedures. Training is the responsibility of the Chair, PI or supervisor. Training records must be documented and retained for 3 years. The Safety Affairs Department is to be used as a resource to accomplish this requirement.

RECORD KEEPING

Employee medical records are confidential and are maintained in accordance with 29 CFR 1910.1020. Medical records will only be provided upon request for examination and copying

to the subject employee, to anyone having written consent of the subject employee, and to the Assistant Secretary of OSHA.

EVALUATING EXPOSURE INCIDENTS

Employees and Students of UTHSC work in a variety of environments on several different sites throughout the medical community. It is important that all employees know what to do and whom to contact in the event of an occupational exposure. This information should be communicated during initial and annual training. Supervisors will facilitate all post-exposure treatment protocols detailed in laboratory safety manuals and the Blood borne Pathogen Policy.

The purpose of this policy is to inform you, the employee or student, about the policies and guidelines in place in your work environment. All employees and students who the potential for occupational exposure to blood, bodily fluids, infectious agents, and Other Potentially Infectious Material (OPIM) must comply with the procedures and work practices outline in the EICP. The plan is updated and reviewed annually to reflect changes in tasks or procedures that may result in occupational exposure.

The Department of Safety Affairs has been designated as the responsible party for the completion, implementation and maintenance of the Exposure and Infection Control Plan. As an employee or student of UTHSC, this Exposure Control Policy and the entire Exposure and Infection Control Plan are available to you, upon request, during normal business hours, and on the UTHSC Safety Affairs website: www.utmem.edu/safety.

The University of Tennessee Health Science Center
Memphis, TN

POLICY ON INFECTION CONTROL FOR EMPLOYEES

Effective Date: January 2005

I. INTRODUCTION

The University of Tennessee Health Science Center (UTHSC) is committed to providing a safe and healthy workplace for all employees. The Infection Control Policy summarizes UTHSC's efforts to eliminate or minimize occupational exposure to blood borne pathogens, infectious agents, and Other Potentially Infectious Materials (OPIM). The purpose of this policy is to inform you, the employee, about the guidelines in place in your work environment. All employees who have the potential for occupational exposure to blood, bodily fluids, infectious agents, and OPIM must comply with the procedures and work practices outlined in the UTHSC Exposure Control Plan (ECP).

The ECP contains information regarding procedures that address:

- Exposure Determination
- Exposure Control
- Blood Borne Pathogen Communication
- Labeling/Hazard Communication
- Hepatitis B Vaccination
- Training
- Record Keeping
- Evaluating exposure incidents

II. EXPOSURE DETERMINATION

Supervisors are responsible for determining which employees have potential for occupational exposure to blood borne pathogens, infectious agents, or OPIM, and for providing these individuals with proper training. The Safety Affairs Department is to be used as a resource to accomplish this requirement.

III. EXPOSURE CONTROL

Engineering and work practice controls are used as the primary means of eliminating or reducing exposure to infectious agents. In the event that a risk of occupational exposure still

exists after implementation of engineered and work practice controls, the employer must incorporate personal protective equipment (PPE) to provide adequate protection.

III. BLOODBORNE PATHOGEN COMMUNICATION

All employees who have the potential to come into direct contact with blood and/or other bodily fluids must undergo documented annual Blood borne Pathogens safety training. It is the responsibility of supervisors to ensure that their employees are in compliance with this requirement. The full text on blood borne safety can be found in the Blood borne Pathogens Policy, located at www.utmem.edu/unheal.

IV. LABELING/HAZARD COMMUNICATION

All employees whose job duties involve working with blood, bodily fluids, infectious agents, and/or OPIM must undergo documented annual Hazard Communication training. It is the responsibility of supervisors to ensure that their employees are in compliance with this requirement. All storage vessels containing any of these items must be labeled to identify the contents of the vessel.

V. HEPATITIS B VACCINATION

Hepatitis B vaccination is available at no cost to all employees who have the potential for occupational exposure. The vaccine is administered through the UTHSC Occupational Health Service (OHS). Information addressing the safety, benefits, efficacy, and methods of administration are available from OHS. If a person decides to decline the hepatitis B vaccination, they must sign the Hepatitis B Vaccine Declination form. The vaccination requirement is waived if the employee provides documentation that he or she has previously received the complete HBV vaccination series, or if antibody testing reveals that the employee is immune, or if the vaccine is contraindicated for medical reasons.

VI. INFLUENZA VACCINE

Influenza vaccine is strongly recommended for all employees. For individuals involved in patient care activities, the influenza vaccine is required.

VII. TRAINING

Employees shall be provided with a training program at the time of initial employment and annually thereafter. Additional training will be provided when any modification in tasks or procedures occurs or following the institution of new tasks or procedures. Training is the responsibility of the Chair, PI or supervisor. Training records must be documented and retained for 3 years. The Safety Affairs Department is to be used as a resource to accomplish this requirement.

VIII. RECORD KEEPING

Employee medical records are confidential and are maintained in accordance with 29 CFR 1910.1020. Medical records will only be provided upon request for examination and copying to the subject employee, to anyone having written consent of the subject employee, and to the Assistant Secretary of OSHA.

IX. EVALUATING EXPOSURE INCIDENTS

Employees and Students of UTHSC work in a variety of environments on several different sites throughout the medical community. It is important that all employees know what to do and whom to contact in the event of an occupational exposure. This information should be communicated during initial and annual training. Supervisors will facilitate all post-exposure treatment protocols detailed in laboratory safety manuals and the Blood borne Pathogen Policy.

X. REVIEW OF GUIDELINES AND PROCEDURES

The UTHSC Committee on Infection Control will review all pertinent guidelines to be used by UTHSC to insure that these are in keeping with the available evidence on the transmission of infectious diseases and meet the requirements of this policy. UTHSC establishes this Policy on Infection Control for employees based on the best available scientific evidence. The UTHSC Committee on Infection Control will periodically review recommendations from the Centers for Disease Control, the American College Health Association and other relevant publications. The UTHSC Committee on Infection Control will review this policy annually. The Committee will submit recommendations for policy changes to the Chancellor and Campus Health and Safety Council as warranted.

XI. REFERENCES

The following references provide guidelines for meeting University responsibility in protecting students and employees from acquisition of infectious diseases.

Centers for Disease Control - www.cdc.gov

National Guideline Clearinghouse – www.ngc.org

Occupational Safety and Health Administration. Occupational Exposure to Blood borne Pathogens: Final Rule. Federal Register, 1910.1030.

CDC. Immunization of health-care workers: recommendations of the Advisory Committee on Immunization Practices (ACIP) and the Hospital Infection Control Practices Advisory Committee (HICPAC). MMWR 1997; 46(No. RR-18).

Chiarello LA, Gerberding JL. Human immunodeficiency virus in health care settings. In: Mandell GL, Bennett JE, Dolin R, Eds. Principles and Practice of Infectious Diseases. 5th ed. Philadelphia, PA: Churchill Livingstone, 2000:2991-3066.

Panel on Clinical Practices for Treatment of HIV Infection. Guidelines for the use of antiretroviral agents in HIV-infected adults and adolescents. Available at <http://hivatis.org/trtgdlns.html>. Accessed May 9, 2001.

Updated US Public Health Source Guidelines for the Management of Occupational Exposure to HBV, HCV, & HIV and Recommendations for Postexposure Prophylaxis. MMWR, 2001: vol. 50/No. RR-11.

UTHSC Safety Affairs website: www.utmem.edu/safety

The University of Tennessee Health Science Center
Memphis, TN

POLICY ON INFECTION CONTROL FOR RESIDENTS

Effective date: January 2005

I. INTRODUCTION

The University of Tennessee Health Science Center (UTHSC) will provide an environment for the safe conduct of its mission in education, research, community service, and patient care. This policy is intended to provide reasonable protection for residents against the transmission of infectious diseases within the environment of an educational and health care institution. University Health Services (UHS) is responsible for the implementation and interpretation of this policy. A provider may be reached at (901) 448-5630 at any time.

All statements made herein, pertain to all residents at UTHSC. The Graduate Medical Education (GME) Office will provide the oversight for implementation of this policy. The residents not managed through the UTGME Office must follow the UTHSC Infection Control Policy for Students.

II. LABORATORY PRACTICE

The safe handling of infectious agents in research and clinical laboratories is managed in accordance with U.S. Center for Disease Control (CDC) and National Institutes of Health (NIH) publication, Biosafety in Microbiological and Biomedical Laboratories. This publication outlines procedures for the safe handling of biologically hazardous agents to assure protection of laboratory, animal care, housekeeping, and emergency personnel. Chairs and principal investigators are responsible for assuring adherence to these guidelines by employees and residents.

III, IMMUNIZATION AGAINST MEASLES, RUBELLA, MUMPS, DIPHTHERIA, POLIO, TETANUS, VARICELLA, INFLUENZA, MENINGOCOCCUS, AND HEPATITIS B FOR RESIDENTS

The University of Tennessee Health Science Center requires that all entering residents document immunity to measles, mumps, rubella, diphtheria, polio, and tetanus by recorded evidence of immunization. Documentation of receipt of two doses of measles (Rubeola) vaccine after the first birthday is required unless born prior to 1957. Anyone with unknown or negative history of varicella must undergo serological testing. If serology and history are negative, the vaccine is required. University Health Services will determine whether immunization documentation is adequate. Residents who are unable to document immunity to these infections may begin work, provided required immunization is obtained within ten days of registration. Residents may be excused from this requirement if contraindications are established by a provider in the University Health Services. Annual influenza immunizations are required for all residents within 30 days of availability as indicated by University Health Services.

A waiver form will be given to all residents indicating that the institution has provided detailed information to the resident concerning meningococcal disease, the availability and effectiveness of the vaccine, and that the resident has received and reviewed the information and has chosen to be vaccinated or not to be vaccinated for meningococcal infection. Medical residents in Pathology or Infectious Disease Programs must be vaccinated with meningococcal vaccine.

Immunization against Hepatitis B virus is required for all residents. Residents who have previously received the Hepatitis B series must show proof of a positive Hepatitis B titer of equal or greater to 10 mIU per CDC guidelines. The Hepatitis B series will be repeated one time if the past series had negative results. Residents known to be Hepatitis B antigen or antibody-positive (or already immune) or for whom contraindications are established by a healthcare provider or the University Health Services may be exempted from this immunization.

IV. EARLY DETECTION OF TUBERCULOSIS FOR MEDICAL AND DENTAL RESIDENTS

All UTHSC residents are required to receive the tuberculin skin test annually. Residents without documented testing within the prior year will have a 2-step tuberculin skin test. Residents, who have been vaccinated with Bacillus Calmette-Guerin (BCG) and do not provide documentation of a past, positive, tuberculin skin test, are also required to have an initial tuberculin skin. Persons who test positive, or have previously tested positive, are required to show proof from the Memphis/Shelby County Health department of being free of tuberculosis.

Treatment for Tuberculosis will be managed through the local Memphis/Shelby County Health Department, which will provide the authorization to return to UTHSC.

V. HIV INFECTION AND AIDS

Human Immunodeficiency Virus (HIV) may be transmitted by the transfusion of blood or blood-products, sharing of contaminated needles, or intimate sexual contact. HIV is not spread by casual contact.

UTHSC subscribes to the American College Health Association (ACHA) guidelines, CDC guidelines, and the Occupational Safety and Health Administration's standard on bloodborne pathogens. Because individuals without symptoms of AIDS may be infected with HIV, it is strongly recommended that practitioners and students carry out their clinical activities under the presumption that any person is a potential carrier of the HIV virus (Standard Precautions).

A. Acceptance of Medical and Dental Residents with HIV Infection

The existence of HIV infection is not a factor in decisions regarding acceptance to the University of Tennessee Health Science Center GME Programs as long as the individual's physical condition is such that he or she can participate fully in the required activities of the program. It is recognized, however, that this latter proviso might prevent acceptance of certain infected persons, particularly those with clinically evident AIDS. Confidential counseling is available to residents who self identify as HIV positive.

B. Screening for HIV Infection

UTHSC will not undertake programs of routinely screening residents for antibody to HIV. It is strongly recommended that all health-care workers know their antibody status.

C. Universal Precautions

All health science professionals must scrupulously observe the recommendations of the U.S. Public Health Service regarding prevention of HIV transmission.

Residents will be required to obtain and process blood and other body fluids of patients. Faculty responsible for educational training activities for residents in hospitals and clinics will establish guidelines to assure that residents are only required to perform possibly hazardous procedures if appropriate to their level of training and experience.

UTHSC subscribes to the safety guidelines proposed by the Department of Health and Human Services for protection of personnel in its hospitals, clinics, clinical laboratories and day care facilities. The appropriate infection control committees or other responsible groups in University-operated health care facilities establish guidelines and procedures

(Exposure Control Plan) for the protection of students and employees against the possible transmission of HIV.

D, Exposure to HIV

The policy of UTHSC is to provide aggressive follow-up for residents following potential exposure to blood borne pathogens. Any resident who is possibly exposed to HIV infection while performing job-related duties will be referred to the University Health Services or the hospital in which the exposure occurred for medical evaluation and counseling. In accordance with current CDC guidelines, treatment should be instituted as soon as possible, preferably within two hours of exposure. Personal medical information is considered confidential and the resident's right to privacy will be protected, to the extent allowed by law. Medical information, including test results, will not be released without the written consent of the individual or as required by law. After initial treatment and evaluation at the hospital, the resident should come to UHS for follow-up and medication, if indicated.

VI. HEPATITIS B AND HEPATITIS C

Residents with an exposure to Hepatitis B and/or Hepatitis C will be treated in accordance with current CDC guidelines and may be referred to a hepatologist for specialized treatment. Persons known to have active Hepatitis B and/or Hepatitis C must be counseled by a UHS provider regarding the transmission of this virus and the means to minimize risk of such transmission.

VII. HOSPITAL ISOLATION & INFECTION CONTROL POLICIES

Residents are expected to be aware of and to comply with the Isolation & Infection Control Policies of each health care organization in which they work.

VIII. EDUCATION

It shall be the responsibility of the GME Office to provide residents with information on the cause and spread of infectious diseases, as a part of the required education program.

Other residents must be provided this information through their respective programs. Strategies for such educational programs are provided by the Centers for Disease Control, which can serve as guidelines for these programs.

The UTHSC Infection Control Committee will serve as an information resource for these educational activities.

IX. REVIEW OF GUIDELINES AND PROCEDURES

The UTHSC Committee on Infection Control will periodically review pertinent guidelines to insure that UTHSC Infection Control policies are in keeping with the best available evidence. UTHSC establishes this Policy on Infection Control for residents based on the best available scientific evidence. The UTHSC Committee on Infection Control will periodically review recommendations from the Centers for Disease Control, the American College Health Association and other relevant publications. The Committee will submit recommendations for policy changes to the Chancellor and Campus Safety Council. The UTHSC Committee on Infection Control will review this policy annually.

X. REFERENCES

The following references provide guidelines for meeting University responsibility in protecting students and employees from acquisition of bloodborne diseases.

Centers for Disease Control - www.cdc.gov

National Guideline Clearinghouse – www.ngc.org

Occupational Safety and Health Administration. Occupational Exposure to Bloodborne Pathogens: Final Rule. Federal Register, 1910.1030.

CDC. Immunization of health-care workers: recommendations of the Advisory Committee on Immunization Practices (ACIP) and the Hospital Infection Control Practices Advisory Committee (HICPAC). MMWR 1997; 46(No. RR-18).

Chiarello LA, Gerberding JL. Human immunodeficiency virus in health care settings. In: Mandell

GL, Bennett JE, Dolin R, eds. Principles and Practice of Infectious Diseases. 5th ed. Philadelphia, PA: Churchill Livingstone, 2000:2991-3066.

Panel on Clinical Practices for Treatment of HIV Infection. Guidelines for the use of antiretroviral agents in HIV-infected adults and adolescents. Available at <http://hivatis.org/trtgdlns.html>. Accessed May 9, 2001.

Updated US Public Health Source Guidelines for the Management of Occupational Exposure to HBV, HCV, & HIV and Recommendations for Postexposure Prophylaxis. MMWR, 2001: vol. 50/No. RR-11.

UTHSC Safety Affairs website: www.utmem.edu/safety

The University of Tennessee Health Science Center
Memphis, TN

POLICY ON INFECTION CONTROL FOR STUDENTS

Effective Date: January 1987

Revised Date: January 1997

Revised Date: August 2004

Approved - Infection Control Committee:

August 2004

I. INTRODUCTION

The University of Tennessee Health Science Center is obligated to provide an environment for the safe conduct of its mission in education, research, community service, and patient care. This policy is intended to provide reasonable protection for students against the transmission of infectious diseases within the environment of an educational and health care institution. University Health Services is responsible for the implementation and interpretation of this policy. A provider may be reached at (901) 448-5630 Monday through Friday 8:00 am to 5:00 pm and also after hours emergencies at the same number.

The populations in this setting, particularly students, are vulnerable to communicable diseases such as measles, mumps, rubella, diphtheria, polio, meningitis, varicella, and tuberculosis. These diseases are susceptible to control by appropriate immunizations.

All statements made herein, pertain to all students at UTHSC.

II. LABORATORY PRACTICE

The safe handling of infectious agents in research and clinical laboratories is managed in accordance with U.S. Center for Disease Control (CDC) and National Institutes of Health (NIH) publication, Biosafety in Microbiological and Biomedical Laboratories. This publication outlines procedures for the safe handling of biologically hazardous agents to assure protection of laboratory, animal care, housekeeping, and emergency personnel. Chairs and principal investigators are responsible for assuring adherence to these guidelines by employees and students.

III. IMMUNIZATION AGAINST MEASLES, RUBELLA, MUMPS, DIPHTHERIA, POLIO, TETANUS, VARICELLA, INFLUENZA, MENINGOCOCCUS, AND HEPATITIS B FOR STUDENTS

The University of Tennessee Health Science Center requires that all entering students undergo tuberculin skin testing at registration and document prior immunity to measles, mumps, rubella, diphtheria, polio, and tetanus by recorded evidence of immunization. Documentation of receipt of two doses of measles (Rubeola) vaccine after the first birthday is required unless born prior to 1957. Anyone with unknown or negative history of varicella must undergo serological testing. If serology and history are negative, the vaccine is required. University Health Services will determine whether immunization documentation is adequate. Students who are unable to document immunity to these infections may be enrolled, provided required immunization or TB testing is obtained within ten days of registration. Students may be excused from this requirement if contraindications are established by a provider in the University Health Services. Annual influenza immunizations are recommended for all students.

Effective July 1, 2003, new incoming students at any public institution of higher learning in

Tennessee who live in on-campus student housing shall sign a waiver for meningococcal vaccine

and return the completed waiver to the University Health Service. A waiver form shall indicate that the institution has provided detailed information to the student concerning meningococcal disease, the availability and effectiveness of the vaccine, and that the student has received and reviewed the information and has chosen to be vaccinated or not to be vaccinated for meningitis. Students in clinical laboratory sciences must be vaccinated with meningococcal vaccine, effective 2004.

According to the guidelines established by Centers for Disease Control, to insure protection of students against transmission of blood borne pathogens, University Health Services is required to assure that students in all colleges are immunized against Hepatitis B. Students who have had Hepatitis B series must show proof of a positive Hepatitis B titer of equal or greater to 10 mIU per CDC guidelines. The Hepatitis B series will be repeated one time if the past series has negative results. Students known to be Hepatitis B antigen or antibody-positive (or already immune) or for whom contraindications are established by a healthcare provider or the University Health Services may be exempted from this immunization.

IV. EARLY DETECTION OF TUBERCULOSIS FOR STUDENTS

All UTHSC students are required to receive the tuberculin skin test annually. Students without documented prior testing within 1 year will have a 2-step tuberculin skin test. Students who have been vaccinated with Bacillus Calmette-Guerin (BCG) and do not

provide documentation of a past, positive, tuberculin skin test, are required to have an initial tuberculin skin test to determine PPD status. Persons who test positive, or have previously tested positive, are required to show proof from the Memphis/Shelby County Health department of being free of tuberculosis.

Treatment for Tuberculosis will be managed through the local Memphis/Shelby County Health Department.

V. HIV INFECTION AND AIDS

Human immunodeficiency virus (HIV) may be transmitted by the transfusion of blood or blood-products, sharing of contaminated needles, or intimate sexual contact. Based on current scientific evidence, the disease is not spread by casual contact.

Policies and procedures at The University of Tennessee Health Science Center set forth necessary precautions to prevent the spread of this disease to individuals who may have been in contact with the blood or secretions of individuals who carry the virus.

The University of Tennessee Health Science Center subscribes to the guidelines of the American College Health Association (ACHA) CDC guidelines, and the Occupational Safety and Health Administration's standard on bloodborne pathogens. Because individuals without symptoms of AIDS may harbor HIV, it is strongly recommended that practitioners and students carry out their clinical activities under the presumption that any person is a potential carrier of the HIV virus (Standard Precautions).

A. Admission of Students with HIV Infection

The existence of HIV infection is not a factor in decisions regarding admission to The University of Tennessee Health Science Center so long as the individual's physical condition is such that he or she can participate fully in the required activities of the college to

which application is made. It is recognized, however, that this latter proviso might prevent acceptance of certain infected persons, particularly those with clinically evident AIDS. Confidential counseling is available to students who self identify as HIV positive.

B. Screening for HIV Infection

UTHSC will not undertake programs of routinely screening students for antibody to HIV. It is strongly recommended that all health-care workers know their antibody status.

C. Curricular Implications of HIV Infection

The recommendations of the U.S. Public Health Service regarding prevention of HIV transmission must be scrupulously observed by all health science professionals and students.

Because of their special curriculum needs, health professional students may be required to obtain and process blood and other body fluids of patients. Faculty responsible for teaching laboratory techniques will establish guidelines for safe conduct of experiments involving blood and body fluids when such experiments are a part of the curriculum. Faculty responsible for educational training activities for students in hospitals, clinics, and day care facilities will establish guidelines to assure that students-in-training are only required to perform possibly hazardous procedures if appropriate to their level of training and experience.

The University of Tennessee Health Science Center subscribes to the safety guidelines proposed by the Public Health Service for protection of personnel in its hospitals, clinics, clinical laboratories and day care facilities. The appropriate infection control committees or other responsible groups in University-operated health care facilities establish guidelines and procedures (Exposure Control Plan) for the protection of students and employees against the possible transmission of HIV.

D. Exposure to HIV

The policy of UTHSC is to provide aggressive follow-up in blood borne pathogens. Any student who is possibly exposed to HIV infection while performing job-related duties will be referred to the University Health Services or the hospital in which the exposure occurred for medical evaluation and counseling. In accordance with current CDC guidelines, treatment should be instituted as soon as possible, preferably within two hours of exposure. Personal medical information is considered confidential and the student's right to privacy will be protected, to the extent allowed by law. Medical information, including test results, will not be released without the written consent of the student or as required by law. After initial treatment and evaluation at the hospital, the student should come to UHS for follow-up and medication, if indicated.

VI. HEPATITIS B AND HEPATITIS C

Hepatitis B virus and Hepatitis C virus (HBV or HCV) may be present at high concentrations in blood and serous fluid of carriers and active cases and, to a lesser extent, in other body fluids such as saliva and semen. Transmission occurs when virus-containing materials are introduced by transfusion of blood or blood products, by contaminated needles or by sexual contact. Infection also can occur by contact of infectious materials with skin lesions or mucosal surfaces. The groups at greatest risk for HBV and/or HCV are those at risk for HIV, including intravenous drug abusers, sexually active persons, patients in hemodialysis units, and health care workers who experience frequent contact with blood.

In the health care environment, students working in clinical areas who have contact with blood or body fluids are also at risk of infection with HBV and/or HCV. Precautions for the transmission of HBV and/or HCV are similar to those designed to prevent transmission of the HIV. Barrier methods, including the use of masks, gloves, and protective eyewear, can minimize infection risk. Nevertheless, the only dependable way to prevent Hepatitis B is active immunization. Such immunization is safe and highly effective for health care workers whose activities are likely to involve contact with blood or blood products. However, for Hepatitis C there is currently no vaccine available for its prevention.

Students with an exposure to Hepatitis B and/or Hepatitis C will be treated in accordance with current CDC guidelines and may be referred to a hepatologist for specialized treatment. Persons known to have active Hepatitis B and/or Hepatitis C must be counseled by a UHS provider regarding the transmission of this virus and the means to minimize risk of such transmission.

VII. EDUCATION

One of the strongest and most effective defenses against infectious diseases is an understanding of their cause and modes of transmission that will lead to behavioral changes, minimizing the spread of infection. It is incumbent upon the leadership of UTHSC to provide information on the cause and spread of infectious diseases within the environment of a health science university.

It shall be the responsibility of the individual college to provide students with information on the cause and spread of infectious diseases, as a part of the required education program. Strategies for such educational programs are contained in the American College Health Association (ACHA) and Centers for Disease Control will serve as guidelines for these programs.

The UTHSC Infection Control Committee will serve as an information resource for these educational activities.

VIII. REVIEW OF GUIDELINES AND PROCEDURES

The UTHSC Committee on Infection Control will review all pertinent guidelines to be used by UTHSC to insure that these are in keeping with the available evidence on the transmission of HIV virus and meet the requirements of this policy. The University of Tennessee Health Science Center establishes this Policy on Infection Control for students based on the best available scientific evidence. The UTHSC Committee on Infection Control will periodically review recommendations from the Centers for Disease Control, the American College Health Association and other relevant publications. The Committee will submit recommendations for policy changes to the Chancellor and Administrative Council. This policy will be reviewed annually by the UTHSC Committee on Infection Control.

IX. REFERENCES

The following references provide guidelines for meeting University responsibility in protecting students and employees from acquisition of bloodborne diseases.

Centers for Disease Control - www.cdc.gov

American College Health Association – www.acha.org

National Guideline Clearinghouse – www.ngc.org

Occupational Safety and Health Administration. Occupational Exposure to Bloodborne Pathogens: Final Rule. Federal Register, 1910.1030.

CDC. Immunization of health-care workers: recommendations of the Advisory Committee on Immunization Practices (ACIP) and the Hospital Infection Control Practices Advisory Committee (HICPAC). MMWR 1997;46(No. RR-18).

Chiarello LA, Gerberding JL. Human immunodeficiency virus in health care settings. In: Mandell

GL, Bennett JE, Dolin R, eds. Principles and Practice of Infectious Diseases. 5th ed.

Philadelphia, PA: Churchill Livingstone, 2000:2991-3066.

Panel on Clinical Practices for Treatment of HIV Infection. Guidelines for the use of antiretroviral agents in HIV-infected adults and adolescents. Available at <http://hivatis.org/trtgdlns.html>.

Accessed May 9, 2001.

Updated US Public Health Source Guidelines for the Management of Occupational Exposure to HBV, HCV, & HIV and Recommendations for Postexposure Prophylaxis. MMWR, 2001: vol. 50/No. RR-11.

UTHSC Safety Affairs website: www.utmem.edu/policies/safety/2safety.html