BLOODBORNE PATHOGEN EXPOSURE CONTROL PLAN

Texas Christian University

I. PURPOSE

In 1992, the Occupational Safety and Health Administration (OSHA) enacted the Bloodborne Pathogens Standard, codified as 29 CFR 1910.1030. Compliance with the Bloodborne Pathogens Standard will reduce occupational exposure to blood and other potentially infectious material, including Hepatitis B Virus (HBV), Human Immunodeficiency Virus (HIV) and other bloodborne pathogens.

These three principles must be followed when employees are potentially exposed to bloodborne pathogens.

- Minimize all exposure to bloodborne pathogens;
- Institute as many engineering and work practice controls as possible to eliminate or minimize employee exposure to bloodborne pathogens;
- Routinely employ Universal Precautions when exposure to blood or potentially infectious materials is anticipated.

This Exposure Control Plan (ECP) is implemented to meet the letter and intent of the OSHA Bloodborne Pathogens Standard. The objectives of this plan are to:

- provide information on procedures and regulations regarding bloodborne pathogens;
- protect employees from health hazards associated with bloodborne pathogens;
- provide appropriate treatment and counseling to employees exposed to bloodborne pathogens.

II. GENERAL PROGRAM MANAGEMENT

A. Areas of Responsibility

Four areas of responsibility are central to the implementation of the Exposure Control Plan at Texas Christian University (TCU) and they include:

- The "Exposure Control Officer";
- The Workers' Compensation Coordinator;
- The Department Chairpersons, Directors, Managers and Supervisors;
- The Employees.

1. Exposure Control Officer

The Exposure Control Officer will be responsible for management and support of the Bloodborne Pathogens Compliance Program. The Safety Director will serve as TCU's Exposure Control Officer. The Workers' Compensation Coordinator, the Director of the Brown-Lupton Health Center, and Harris Methodist Occupational Health Center will assist the Exposure Control Officer. Activities delegated to the Exposure Control Officer include:

- overseeing implementation of the Exposure Control Plan;
- developing, in cooperation with administrators, any additional bloodborne pathogens related policies and practices needed to support the effective implementation of this plan;
- revising, updating and improving the Exposure Control Plan when necessary, with a maximum of one year between revisions;
- collecting and maintaining a suitable reference library on the Bloodborne Pathogens Standard, bloodborne pathogens safety, and health;
- understanding current legal requirements concerning bloodborne pathogens;
- conducting periodic organizational audits to maintain an up-to-date Exposure Control Plan.
- maintain an up-to-date list of TCU personnel requiring training;
- develop suitable education/training programs for employees and instructors;
- schedule periodic training seminars for employees and review seminars for instructors;
- periodically review the training programs to include appropriate new information.
- maintain appropriate training records;
- maintain pre-exposure vaccination dates and request/denial for vaccination forms;
- coordinate employee appointments with Brown-Lupton Health Center for pre-exposure vaccination.

2. Workers' Compensation Coordinator

The TCU Workers' Compensation Coordinator will coordinate all post-exposure medical treatment.

3. Deans, Directors, Chairpersons, Managers and Supervisors

Deans, Directors, Chairpersons or designees, etc. are responsible for compliance in their areas; they, working with the Exposure Control Officer, the Workers' Compensation Coordinator, health providers and the employees, must ensure that proper exposure control procedures are followed. (See Chapter IV).

Training for employees will be offered through the Safety Department and Brown-Lupton Health Center.

4. Employees

The employees are responsible for executing the Exposure Control Plan. They must:

- know what tasks have a potential occupational exposure to bloodborne pathogens;
- attend the bloodborne pathogens training session and annual retraining sessions;
- conduct all operations in accordance with work practice controls;
- follow Universal Precautions;

- develop good personal hygiene habits;
- provide appropriate documentation concerning hepatitis B vaccination and post-exposure evaluations.

B. Availability of the Exposure Control Plan to Employees

The Exposure Control Plan must be readily available to the employees. Employees are to be advised of the availability of the plan during their education/training sessions. Copies of the Exposure Control Plan are available from each supervisor in areas where exposure to bloodborne pathogens can be anticipated. Employees must have access to this copy of the plan. Although it is not necessary for each employee to have access to an individual copy, additional copies are available through the Safety Department by request.

C. Implementation Schedule and Review of the Plan

This exposure control plan will be implemented and remain effective for one year. The plan will the be reviewed and updated:

- annually, on or before November 1 of each year;
- when new or modified tasks and procedures are implemented which affect occupational exposure of employees;
- when new functional positions are established that may involve exposure to bloodborne pathogens.

III. Exposure Determination

The Safety Department, in consultation with affected departments, has determined which job classifications include potential exposure to bloodborne pathogens. Determination was made without regard to the use of personal protective equipment.

OSHA regulations list the following as job classifications:

- **Category A**: Job classifications in which all employees have occupational exposure to bloodborne pathogens.
- **Category B**: Job classifications in which some employees have occupational exposure to bloodborne pathogens. Tasks and procedures in which occupational exposure to bloodborne pathogens occur.

OSHA defines all employees identified as Category A or Category B as employees with a reasonable anticipated risk of exposure to bloodborne pathogens. OSHA states that all employees who have duties which potentially expose them to blood or other potentially infectious material are determined to have a reasonable anticipated risk of exposure to bloodborne pathogens and are acknowledged in the Exposure Control Plan.

IV. Methods of Compliance

Department Heads and Supervisors are responsible for ensuring compliance with the TCU Exposure Control Plan. The plan addresses the following areas:

- the use of Universal Precautions;
- establishing appropriate engineering controls;

- implementing appropriate work practice controls;
- using necessary personal protective equipment;
- implementing appropriate housekeeping procedures.

Each area will be reviewed with employees during their bloodborne pathogens training (see Section "Information and Training"). By following the requirements of OSHA's Bloodborne Pathogens Standard in these five areas, the employee's occupational exposure to bloodborne pathogens will be minimized.

A. Universal Precautions

Employees at Texas Christian University will observe Universal Precautions. All human blood and certain body fluids are treated as if they are known to be infectious for HBV, HIV and other bloodborne pathogens.

Universal Precautions are intended to prevent parenteral, mucous membrane, and non intact skin exposures of workers to bloodborne pathogens.

Universal Precautions apply to blood and body fluids containing visible blood, tissues, semen, vaginal secretions, cerebrospinal, synovial, pleural, peritoneal, pericardial, and amniotic fluids.

Although OSHA does not consider feces, nasal secretions, sputum, sweat, tears, urine, or saliva to be a “potentially infectious material,” TCU employees are encouraged to utilize personal protective equipment when dealing with these items. In circumstances where it is difficult or impossible to differentiate between body fluid types, all fluids are assumed to be potentially infectious.

B. Engineering Controls

Equipment such as handwashing facilities, eye wash stations, sharps disposal containers, biological safety cabinets, ventilating laboratory hoods, and autoclaves are used when appropriate.

The Safety Department, and individual departments will annually review tasks and procedures performed to determine where engineering controls can be implemented or updated. The Safety Department will, upon request inspect areas to identify:

- areas where engineering controls are currently employed;
- areas where engineering controls can be updated;
- areas currently not employing engineering controls, but where engineering controls could be beneficial.

The following engineering controls are to be used throughout the University:

- Handwashing facilities (or antiseptic hand cleansers and towels or antiseptic towelettes), are readily accessible to all employees who have a potential for exposure.
- Emergency eye wash stations are in close proximity to workstations where employees perform tasks that produce splashes of potentially infectious materials. Eyewash stations should meet the following ANSI requirements:
- provide at least 0.4 gallons per minute of water for 15 continuous minutes, flushing both eyes simultaneously with hands free to hold eyes open.
- eye wash facilities must not exceed 95 psi (pounds per square inch).

- it is recommended that the eye wash facility be flushed on a regular basis. A log documenting the recommended weekly five minute flush is encouraged.

OSHA specifications for eyewash stations must be adhered to in areas where hazardous chemicals are used. Please direct your questions regarding the design of the eye wash facility specific for your laboratory to the Safety Department.

Autoclaves will be checked by the individual departments, to assure that proper sterilization occurs. Proper instrumentation will be used to verify that time, temperature, and steam is adequate.

Biohazard containers:

- Containers for contaminated reusable sharps are:
  - ✓ puncture-resistant;
  - ✓ red in color or labeled with a biohazard warning label;
  - ✓ leak-proof on the sides and bottom;
  - ✓ closeable.

    ☞ *Reusable sharps shall not be stored or processed in a manner that requires reaching into containers of contaminated sharps. Contaminated sharps are any contaminated object that can penetrate the skin, which include Pasteur pipettes.*

- Containers for disposable sharps (needles, syringes, scalpels, and intravenous tubing with needles attached) are:
  - ✓ leak-proof;
  - ✓ puncture-resistant;
  - ✓ red in color or labeled with a biohazard warning label;
  - ✓ closeable and disposed of via TCU waste management procedures.

    ☞ *Approved sharps containers are available from the Safety Department. Food containers, such as coffee cans, should not be used to dispose of contaminated sharp objects.*

- Specimen containers are:
  - ✓ leak-proof;
  - ✓ red in color or labeled with a biohazard warning label;
  - ✓ puncture-resistant when necessary;
  - ✓ closeable.

- Secondary containers are:
  - ✓ leak-proof;
  - ✓ red in color or labeled with a biohazard warning label;
  - ✓ puncture-resistant when necessary;
  - ✓ closeable.

C. Work Practice Controls

Supervisors, working in conjunction with Deans, Directors, Chairpersons or designees will oversee the implementation of Work Practice Controls in cooperation with the Safety Department.

The following Work Practice Controls are to be implemented:

- Employees will wash their hands:
  - ✓ after removal of gloves or other personal protective equipment;
  - ✓ when visible contamination with blood, body fluids, or other potentially infectious materials are present;
  - ✓ when work is completed and before leaving the laboratory;
  - ✓ before eating, drinking, smoking, applying makeup, changing contact lenses, or using the bathroom;
  - ✓ before activities that entail hand contact with mucous membranes, eyes, or breaks in the skin.

    ☞ *Regular soap and warm water is adequate for hand washing. Use antiseptic soap when the removal of both transient and resident microorganisms is desired. Waterless antiseptic hand cleansers will be provided when hand-washing facilities are not available.*

- Contaminated needles and other contaminated sharps are not bent, recapped or removed unless:
  - ✓ it can be demonstrated that there is no feasible alternative or
  - ✓ the action is required by specific medical procedure.

    ☞ *When recapping or removal of needles is required, a mechanical device or a one handed method must be used.*

- Contaminated reusable sharps are placed in appropriate containers immediately, or as soon as possible, after use.
- Eating, drinking, smoking, applying cosmetics or lip balm and handling contact lenses is prohibited in work areas where there is potential for exposure to bloodborne pathogens.
- Food and drink are not kept in refrigerators, freezers, on countertops or in other storage areas where blood or other potentially infectious materials are present.
- Mouth pipetting/suctioning of blood or other infectious materials is prohibited.
- Minimize splashing, spraying or other actions generating droplets of blood or other potentially infectious materials during all procedures. Special precautions are recommended for laboratories working with specimens of blood or body fluids.
- Specimens of blood or other materials are placed in designated leak-proof containers, appropriately labeled for handling and storage. If outside contamination of a primary specimen container is likely, that container must be placed within a second leak-proof container, appropriately labeled, for handling and storage. If the specimen can puncture the primary container, the secondary container must be puncture-resistant.

When a new employee is hired or an employee changes jobs, the Department Head or Supervisor must ensure the proper determination of the employee's job classification. This includes:

- checking the employee's job classification and the tasks and procedures that he/she will perform against the Job Classifications and Task Lists which are identified in the Exposure Control Plan as those in which occupational exposure occurs;
- checking the job classifications and tasks/procedures pertaining to the employees previous position against these lists;

- identify the new job classifications and/or tasks and procedures which will potentially expose the employee to blood or other potentially infectious materials;
- provide onsite training regarding any unfamiliar work practice controls;
- inform the Safety Department so records can be updated.

D. Personal Protective Equipment

Personal Protective Equipment is provided by the employer at no cost to the employee with an occupational exposure to blood or potentially infectious material. This equipment might include: gloves, gowns, laboratory coats, face shield/masks, safety glasses, goggles, mouthpieces, resuscitation bags, pocket masks, hoods, and shoe covers.

The Department Manager or Supervisor will ensure that all work areas have appropriate personal protective equipment available to employees. Employees must be trained regarding the use of the appropriate personal protective equipment for their job classification and the tasks/procedures they perform.

To ensure that personal protective equipment is not contaminated and is in the appropriate condition to protect employees from potential exposure, the following practices are utilized:

- All personal protective equipment is inspected periodically by the department manager or supervisor and repaired or replaced as needed.
- Reusable personal protective equipment is cleaned, laundered and decontaminated as needed.
- Single-use personal protective equipment (or equipment that cannot, for whatever reason, be decontaminated) is disposed of through existing practices and procedures as outlined in the TCU Waste Management Guide.

The employees must adhere to the following practices when using personal protective equipment:

- Any garments, including personal clothing, penetrated by blood or other infectious materials must be removed as soon as possible.
- All personal protective equipment must be removed prior to leaving the work area.
- Gloves must be worn:
  - ✓ when employees anticipate hand contact with potentially infectious materials;
  - ✓ when performing vascular access procedures;
  - ✓ when handling or touching contaminated items or surfaces.
- Disposable gloves must be replaced as soon as practical after contamination or immediately when torn, punctured or are otherwise unable to function as an exposure barrier.
- Hypoallergenic gloves, glove liners, and powderless gloves must be provided when the employee is allergic to the gloves usually provided.
- Utility gloves must be decontaminated for reuse. If utility gloves are cracked, peeling, torn or exhibit other signs of deterioration, they must be disposed.
- Masks and eye protection must be used whenever the chance of a splash or spray may generate droplets of infectious materials.
- Protective clothing must be worn whenever potential exposure to the body is anticipated.

- Surgical caps/hoods and shoe covers/boots must be used in any instances where gross contamination is anticipated.

E. Housekeeping

Departments and Units, together with Facility Services or other assigned employees must do the following:

- Clean and decontaminate all equipment and surfaces after contact with blood or other potentially infectious materials with "an appropriate disinfectant" (products registered with the U.S. EPA having claims of tuberculocidal efficacy). Clean and decontaminate:
  - ✓ after the completion of medical procedures;
  - ✓ immediately (or as soon as feasible) when surfaces become contaminated;
  - ✓ after any spill of blood or infectious materials;
  - ✓ at the end of the work shift all surfaces which may have been contaminated.
- Equipment which becomes contaminated must be examined prior to servicing or shipping. If it can be demonstrated that decontamination is not possible, then the following steps need to be taken:
  - ✓ a biohazard warning label is attached to any contaminated equipment, identifying the contaminated portions.
  - ✓ all affected employees, the equipment manufacturer and the equipment service representative are informed of remaining contamination prior to handling, servicing or shipping.
- Clean up spills of infectious materials as soon as possible. The following steps should be taken to clean a spill of infectious material:
  - ✓ Wear appropriate personal protective equipment when cleaning up spills;
  - ✓ Small spills should be wiped up, then cleaned with a proper disinfectant;
  - ✓ Large spills should be contained by applying a ring of disinfectant solution to the area around the perimeter of the spill, covered with absorbent towels, soaked with disinfectant for 10 minutes, wiped up and disposed of in a biohazard bag;
  - ✓ Surface should be wiped down with a disinfectant following a spill clean-up.
- Remove and replace protective coverings:
  - ✓ as soon as it is possible when contaminated and
  - ✓ at the end of the work shift.
- Routinely inspect, clean and properly decontaminate when visibly contaminated, all pails, bins, cans and other receptacles.
- Pick up potentially contaminated broken glassware using mechanical means (such as dustpan and brush) and dispose of in a rigid sharps container.

When disposing of contaminated wastes:

- Discard in TCU approved biohazard bags or sharps containers;
- Locate containers for regulated waste within easy access to employees and as close as possible to the source of waste;

- Maintain waste containers in an upright position, replace routinely, and do not overfill;
- Close the containers of regulated waste before disposal or transportation and place container inside an appropriate secondary container;

Infectious wastes are not to be held in the work area for more than 90 days. All infectious waste will be disposed of according the procedures outlined in the TCU Waste Management Plan.

V. HIV and HBV Research Laboratories and Production Facilities

TCU does not have HIV or HBV research laboratories or production facilities that are engaged in the culture, production, concentration, experimentation, and manipulation of HIV and HBV as defined by this standard. The ECP will be modified to meet these requirements if the research status changes on this campus.

VI. Hepatitis B Vaccination, Post-Exposure Evaluation and Follow-Up

A "Hepatitis B Vaccination" Program and procedure for post-exposure evaluation and follow-up have been established.

A. Vaccination Program

Texas Christian University has implemented a vaccination program through the Brown-Lupton Health Center and Harris Methodist Occupational Health Center. This program is offered at no cost to all employees who have occupational exposure to bloodborne pathogens.

The vaccination program consists of a series of three inoculations over a six-month period. At the time of the bloodborne pathogen training, employees will have the opportunity to read and sign a vaccination request or waiver form that will be maintained by the Safety Department. If the employee initially declines hepatitis B vaccination but at a later date while still covered under the standard decides to accept the vaccination, the hepatitis vaccination will be made available at that time.

The TCU Health Center, under the supervision of a licensed physician, is responsible for the vaccination program. Employees identified as having a reasonable anticipated risk of exposure to bloodborne pathogens will be registered in a master file with the TCU Safety Department. All waiver forms must be turned over to Safety Department. If the employee has received the vaccination at another institution, a medical release form must be signed and turned over to the Safety Department. The medical release form will also include the name of the institution and the dates of the series. All medical records will be maintained for a minimum of thirty years beyond the duration of employment. See procedure in Appendix B.

B. Post-Exposure Evaluation and Follow-Up

If an employee is involved in an incident where exposure to bloodborne pathogens may have occurred, the employee should seek medical consultation and treatment expeditiously. (See Appendix C.)

- If contact with blood or other potentially infectious material occurs on skin with cuts, rashes, acne or dermatitis, wash the area for 10 minutes with soap and water.
- If injury has broken the skin, squeeze injury site to induce bleeding.
- If blood or other potentially infectious material splashes in the eyes or on mucus membranes, flush the area for 15 minutes with water or normal saline.

Then:

- report the incident to a supervisor.
- complete together with supervisor the “Employee Report of Injury”.
- contact the Workers’ Compensation Coordinator.
- employee and source will be referred to Harris Methodist Occupational Health Center (HOHC) for immediate care and follow-up. After hours, the employee will be transferred to the Harris Methodist Emergency Department, downtown.
- HOHC will follow procedure for "HIV and or Hepatitis B Potential Exposure" (see Appendix D).
- the Workers’ Compensation Coordinator schedules follow-up appointments to review the employee's medical status.

C. Medical Recordkeeping

The Harris Methodist Occupational Health Center must establish and maintain employee medical records. Medical records shall be maintained in accordance with OSHA Standard 29 CFR 1910.20. These shall be kept confidential, and must be maintained for the duration of employment plus 30 years. The records shall include the following:

- The name and social security number of the employee;
- A copy of the employee’s HBV vaccination status, including the dates of vaccination;
- A copy of all results of examinations, medical testing, and follow-up procedures;
- A copy of the information provided the healthcare professional, including a description of the employee’s duties as they relate to the exposure incident and documentation of the routes of exposure and circumstances of the exposure.

VII. Label and Signs

All biohazards must be labeled. The department will maintain the labeling and red color-coded container program outlined below. Required labels consist of a red or fluorescent orange colored background with the traditional biohazard symbol in a contrasting color. The Safety Department will maintain a supply of the required biohazard labels and signs, which will be available on request for campus facilities.

The following items must be labeled:

- containers of regulated waste;
- refrigerators/freezers containing blood or other potentially infectious materials;
- sharps disposal containers;
- containers used to store, transport or ship blood and other potentially infectious materials;

- ✓ When a primary container holds a number of smaller items containing the same potentially infectious substance, only the primary container need be labeled.
- ✓ All employees handling these containers will be informed of their contents and the need to use Universal Precautions when handling such items.
- ✓ Items that are transported or shipped, need to comply with Department of Transportation (DOT) regulations. Please contact the Safety Department for a guidance on shipping and transporting infectious items;

- laundry bags/containers holding contaminated items. Laundry may be placed in an red hamper without a label or red laundry bag. Employees handling laundry will be informed of the potential for contamination and/or infectivity of red laundry bags;
- contaminated equipment.

Biohazard signs must be posted at entrances to any HIV/HBV Research Laboratory or Production Facility. For more information on signs and labels refer to the CDC Guidelines on Biosafety in Microbiological and Biomedical Laboratories (ed., 1993).

VIII. Information and Training

All employees who have the potential for exposure to bloodborne pathogens must attend a comprehensive training program, either through the Safety Department or some other qualified source.

Employees will be retrained at least annually to keep their knowledge current. Retraining will be geared toward specific departments and job tasks. All new employees, as well as employees changing jobs or job functions, will be given any additional training their position requires by their new supervisor prior to beginning their new job assignments.

The Safety Department will maintain documentation that all employees who have potential exposure to bloodborne pathogens have received training. Documentation of training offered by outside sources will need to be forwarded to the Safety Department.

A. Training Topics

The topics covered in the training program include:

- the Bloodborne Pathogens Standard;
- the epidemiology and symptoms of bloodborne diseases;
- the modes of transmission of bloodborne pathogens;
- the TCU Exposure Control Plan;
- appropriate methods for recognizing tasks and other activities that may involve exposure to blood and other potentially infectious materials;
- a review of the use and limitations of methods that will prevent or reduce exposure, including:
  - ✓ engineering controls,
  - ✓ work practice controls,
  - ✓ personal protective equipment;
  - ✓ selection and use of personal protective equipment including:
    - types available,

    - proper use,
    - location,
    - removal,
    - handling,
    - decontamination,
    - disposal;

- visual warning of biohazards including labels, signs and color-coded containers;
- the proper procedures and materials involved in the cleanup of spills of potentially infectious materials;
- information on the Hepatitis B Vaccine, including:
    - ✓ its efficacy,
    - ✓ its safety,
    - ✓ the method of administration,
    - ✓ the benefits of vaccination,
    - ✓ TCU's vaccination program;
- actions to take and persons to contact in an emergency involving blood or other potentially infectious materials;
- the procedures to follow if an exposure incident occurs, including incident reporting;
- information on the post-exposure evaluation and follow-up including medical consultation;
- recommendations specific to a particular department and unique threats posed by potentially infectious materials in that department.

B. Training Methods

Training presentations make use of several training techniques appropriate in content and vocabulary including:

- personal instruction;
- videotape programs;
- computer aided interactive training;
- training manuals/employee handouts;
- employee review sessions.

Opportunity for employees to ask questions will be provided. Trainers will be familiar with the OSHA Bloodborne Pathogen Standard and the TCU Exposure Control Plan.

C. Recordkeeping

To facilitate the training of our employees, as well as to document the training process, training records will be maintained and will contain the following:

- Dates of all training sessions;
- Contents/summary of the training sessions;
- Names and qualifications of the instructors;
- Names of employees attending the training sessions.

The Safety Department will maintain all training records for a minimum of three years.

If you have any questions regarding the Bloodborne Pathogen Exposure Control Plan
or other Safety and Health concerns,
contact the TCU Safety Department at 257-6363.

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