



Environmental
Health and Safety
MICHIGAN STATE UNIVERSITY

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Bloodborne Pathogens Exposure Control Plan



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BLOODBORNE PATHOGENS EMERGENCY CONTACT REFERENCE

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MSU Bloodborne Pathogens Exposure Control Plan

September 2017 Revision includes the following changes:

Definitions:

- **Added:**
 - Biologically hazardous conditions
 - Clinical Laboratory
 - Contaminated Laundry
 - Contaminated sharps
 - Disinfect
 - Handwashing Facilities
 - Under OPIM, added note defining Human cell lines
- **Deleted (information incorporated into text as needed):**
 - Amniotic fluid
 - Examples of human blood components
 - Cerebrospinal fluid
 - HBV, HCV, HIV
 - Examples of sharps uses
 - Pericardial fluid
 - Peritoneal fluid
 - Pleural fluid
 - Examples of parenteral exposure routes
 - Synovial fluid

Exposure Determination:

- Clarification of job classification determination.
- Updated job classification list in Appendix A, Exposure Determination.

Engineering Controls:

- Removed information about storage and transportation of biological materials from the main text and put the information in Appendix M, Transporting Biological Materials (Local in vehicle).

Personal Protective Equipment:

- Added statement about the US FDA ban on all powdered gloves.

Sharps Injury Protection Program:

- Removed link to safer sharps list (link outdated and changes often).
- Updated Annual Sharps Review form (Appendix J).
- Updated Safer Sharps Evaluation form (Appendix I).

Housekeeping: Removed disinfection appendix, included the information needed in the text.

Post-Exposure Evaluation and Follow-Up:

- Added information about requirement for a BBP Exposure Source Protocol if there is an identifiable source. A Source Protocol Packet has been added as Appendix M which includes a BBP Source Protocol Preparation Guide, Source Protocol For BBP Exposures example form, and a BBP Source Patient Lab Worksheet.
- Added BBP exposure follow-up location for employees working in the Grand Rapids area.

Information and Training:

- Reorganized, made clarifications to text.
- BBP Annual Refresher training: If overdue, the employee will be required to take the initial bloodborne pathogens training.
- Written procedures:
 - Clarified that written procedures can be accomplished by the use of SOP's, Policies, Directives, or BBP Task Procedure forms.
 - Added section stating that the procedures must be reviewed as part of the Site-Specific Training Checklist completion.
- Site Specific Training Checklist:
 - Updated the Site-Specific Training Checklist, reduced to one page. (Appendix E)
 - Checklists must be completed within 30 days of initial training, after a procedural change, when new tasks are assigned, and annually. (There is no longer a 30 day deadline after annual refresher training, it must only be completed on an annual basis)
 - Retention for site-specific training checklists is now three (3) years.
 - Laboratories using biologicals/toxins or chemicals may use the combined checklist, Laboratory Site Specific Training, to comply with bloodborne pathogens site-specific training.

Bloodborne Pathogens Compliance Visits: Name replacing inspections and audits.

Bloodborne Pathogens Exposure Control Plan

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APPENDICES

- Appendix A:** Bloodborne Pathogens Exposure Determination
- Appendix B:** Hepatitis B Vaccination Information/Surveillance Program Form
- Appendix C:** MSU Policy for Food and Drink in Laboratories
- Appendix D:** Biohazardous Spill Response
- Appendix E:** Bloodborne Pathogens Site-Specific Training Checklist
- Appendix F:** Supervisor's Guidelines for BBP Site-Specific Training
- Appendix G:** Bloodborne Pathogens Task Procedure
- Appendix H:** Bloodborne Pathogens Train-the-Trainer Program Summary
- Appendix I:** Safer Sharps Device Evaluation Form
- Appendix J:** Safer Sharps Devices Annual Review Form
- Appendix K:** Sharps Injury Log
- Appendix L:** Bloodborne Pathogens Source Protocol Preparation Packet
- Appendix M:** Transporting Biological Materials (Local in vehicle)
- Appendix N:** HIV and HBV Research Laboratories

Introduction

The following MSU Exposure Control Plan (ECP) has been developed and implemented to meet the letter and intent of MIOSHA's Bloodborne Infectious Diseases Standard, codified as R 325.70001 through R 325.700018. Compliance with the Bloodborne Infectious Disease Standard will reduce occupational exposure to blood and other potentially infectious materials, including human immunodeficiency virus (HIV), hepatitis B virus (HBV), hepatitis C virus (HCV), and other bloodborne pathogens.

The following principles must be applied when employees are potentially exposed to bloodborne pathogens:

- Minimize all exposures 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.

The objectives of the Exposure Control Plan are to:

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

Definitions

The following is a list of common terms and their definitions as they are used in the Exposure Control Plan.

Biologically hazardous conditions: Equipment, containers, rooms, materials, experimental animals, and animals infected with HBV or HIV virus, or combinations thereof that contain, or are contaminated with, blood or other potentially infectious material.

Blood: Human blood, human blood components, and products made from human blood.

Bloodborne pathogens (BBPs): Pathogenic microorganisms that are present in human blood or OPIM and can infect and cause disease in persons who are exposed to blood containing the pathogen. These pathogens include, but are not limited to, hepatitis B virus (HBV), hepatitis C virus (HCV), and human immunodeficiency virus (HIV).

Clinical laboratory: A workplace where diagnostic or other screening procedures are performed on blood or other potentially infectious material.

Contaminated: The presence or the reasonably anticipated presence of blood or other potentially infectious materials on an item or surface.

Contaminated laundry: Laundry that has been soiled with blood or other potential infectious materials (OPIM) or that may contain sharps.

Contaminated sharps: Any contaminated object that can penetrate the skin (i.e. needles, scalpels, broken glass)

Decontamination: Use of physical or chemical means to remove, inactivate, or destroy bloodborne pathogens on a surface or item to the point where they are no longer capable of transmitting infectious particles and the surface or item is rendered safe for handling, use, or disposal.

Disinfect: To inactivate virtually all recognized pathogenic microorganisms, but not necessarily all microbial forms, on inanimate objects.

Engineering controls: Controls designed to isolate or remove the bloodborne pathogen hazard from the workplace (e.g. sharps disposal containers, biosafety cabinets, and safer medical devices such as sharps with engineered sharps injury protections, needleless systems, blunt suture needles, plastic capillary tubes and mylar-wrapped glass capillary tubes).

Exposure incident: A specific eye, mouth, other mucous membrane, non-intact skin (includes skin with dermatitis, hangnails, cuts, abrasions, chafing, acne, etc.), or parenteral contact with blood or other potentially infectious materials that results from the performance of an employee's duties.

Handwashing Facilities: Facilities that provide an adequate supply of running, potable water, soap, and single-use towels or an air drying machine.

Needleless Systems: A device that does not use needles for: (A) the collection of bodily fluids or withdrawal of body fluids after initial venous or arterial access is established; (B) the administration of medication or fluids; or (C) any other procedure involving the potential for occupational exposure to bloodborne pathogens due to percutaneous injuries from contaminated sharps.

Occupational exposure: Reasonably anticipated skin, eye, mucous membrane, non-intact skin, or parenteral contact with blood or other potentially infectious materials that may result from the performance of an employee's duties.

Other potentially infectious materials (OPIM): Materials in addition to human blood that may be capable of transmitting bloodborne pathogens. These include:

1. The following human body fluids: semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva in dental settings, any body fluid that is visibly contaminated with blood, and all body fluids in situations where it is difficult or impossible to differentiate between body fluids;
2. Any unfixed tissue or organ (other than intact skin) from a human (living or dead);
3. HIV-containing cell or tissue cultures, organ cultures, and HIV or HBV-containing culture media or other solutions as well as human cell cultures (see note);
4. Blood, organs, or other tissues from experimental animals infected with HIV or HBV.

Note: *Human cell lines are considered to be potentially infectious and within the scope of the BBP Standard unless the specific cell line has been characterized to be free of hepatitis viruses, HIV, Epstein-Barr virus, human papilloma viruses and other recognized bloodborne pathogens.*

Parenteral: Piercing mucous membrane or the skin barrier through such events as, needlesticks, human bites, cuts, and abrasions.

Personal protective equipment (PPE): Specialized clothing or equipment worn by an employee for protection against a hazard. General work clothes (e.g. uniforms, pants, shirts, blouses) not intended to function as protection against a hazard are not considered personal protective equipment.

Post-exposure follow-up: In the case of an exposure incident, the mandatory course of action taken by the employer to provide medical services (i.e. medical assessment, vaccination, source testing, baseline testing, and counseling) to the exposed worker in order to reduce the risk of infection.

Production facility: Facility engaged in industrial scale, large volume or high concentration production HIV or HBV.

Regulated waste: Any of the following: liquid or semi-liquid blood or other potentially infectious materials; contaminated items that would release blood or other potentially infectious materials in a liquid or semi-liquid state if compressed; items which are caked with dried blood or other potentially infectious materials and are capable of releasing these materials during handling; contaminated sharps; and pathological and microbiological wastes containing blood or other potentially infectious materials.

Research laboratory: A laboratory producing or using research-laboratory-scale amounts of HIV or HBV, but not in the volume found in production facilities.

Sharps: Needles, syringes, scalpels, and intravenous tubing with needles attached, as well as any contaminated object that can penetrate the skin such as: Pasteur pipettes, razor blades, capillary tubes, etc.

Sharps with Engineered Sharps Injury Protections (Safer Sharps Devices): A non-needle sharp or a needle device with a built-in safety feature or mechanism that effectively reduces the risk of an exposure incident.

Source individual: Any individual, living or dead, whose blood or other potentially infectious material may be a source of occupational exposure to an employee.

Sterilize: The use of a physical or chemical procedure to destroy all microbial life including highly resistant bacterial endospores.

Universal precautions: A method of infection control that treats all human blood and other potentially infectious material as capable of transmitting HIV, HBV, HCV, and other bloodborne pathogens.

Work practice controls: Controls that reduce the likelihood of exposure to bloodborne pathogens by altering the manner in which a task is performed.

General Program Management

About the MSU Bloodborne Pathogens Exposure Control Plan

Michigan State University is an employer with various groups of employees who have a reasonably anticipated risk of exposure to human blood and other potentially infectious materials when performing their required job duties. As such, MSU must have an exposure control plan in accordance with Michigan OSHA's Bloodborne Infectious Diseases standard. This plan is an administrative document that outlines how this occupational exposure risk will be controlled through the use of administrative controls, engineering controls, work practice controls, and personal protective equipment.

The following document has been prepared by the Environmental Health & Safety (EHS) Office in order to outline the institutional exposure control policies & procedures that will be followed by all affected MSU departments. Due to the diversity of job tasks with associated bloodborne pathogens risk, it must be recognized that information related to task-specific and site-specific procedures may need to be prepared and maintained at the supervisory level along with this institutional exposure control plan in order to fully address regulatory requirements.

Areas of Responsibility

Four areas of responsibility are central to the implementation of the Exposure Control Plan at Michigan State University (MSU) and they include:

- Exposure Control Officer
- Supervisory Personnel (including Department Chairpersons, Directors, Principal Investigators, Managers and Supervisors)
- Education/Training Coordinators and Instructors
- Employees

Exposure Control Officer

The Biological Safety Officer (or designee) of Environmental Health & Safety (EHS) will serve as MSU's Exposure Control Officer and is responsible for management and support of the Bloodborne Pathogens Compliance Program. The Health and Safety Operations Committee and MSU Occupational Health/University Physician's Office 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, and on an annual basis;
- Collecting and maintaining a suitable reference library related to bloodborne pathogens;
- Understanding current legal requirements concerning bloodborne pathogens;
- Conducting periodic organizational audits to maintain an up-to-date Exposure Control Plan.

Supervisory Personnel

Department Chairpersons, Directors, Principal Investigators, Managers and Supervisors are responsible for compliance in their areas. They shall work with the Exposure Control Officer, EHS, MSU Occupational Health/University Physician's Office and their employees. Activities delegated to the supervisory personnel include:

- Assuring that employees in their area who are at risk of exposure to bloodborne pathogens receive initial training and annual retraining (including site-specific training) in bloodborne pathogens as outlined in the "Information and Training" section of this document.
- Evaluating the bloodborne pathogen risk associated with an employee's job classification. This must be done when a new employee is hired, or when an employee changes jobs. This evaluation must include:
 - checking the employee's job classification and the tasks and procedures that he/she will perform to determine if there is a reasonably anticipated risk of exposure to blood or other potentially infectious material (OPIM);
 - identifying the new job classifications and/or tasks and procedures which will potentially expose the employee to blood or other potentially infectious materials;
 - informing EHS of all changes so records can be updated.
- Assuring that proper exposure control procedures are followed as outlined in the "Methods of Compliance" section of this document;
- Assuring that appropriate personal protective equipment is available and in good working condition for all employees at risk of exposure to bloodborne pathogens;
- Assuring that any employee who experiences an occupational exposure incident to blood or other potentially infectious materials is provided with post-exposure medical services as outlined in the "Post-Exposure Evaluation and Follow-Up" section of this document.

Education/Training Coordinator and Instructors

The Education/Training Coordinator and Instructors will provide information and training to all employees who have an anticipated risk of exposure to bloodborne pathogens. The EHS Biological Safety Officer (or designee) is the Education/Training Coordinator. They will:

- Maintain an up-to-date list of MSU personnel that have taken the required initial training and annual retraining;
- Develop suitable education/training programs for employees and instructors;
- Maintain appropriate training records;
- Periodically review the training programs to include appropriate new information.

Training for employees will be offered through EHS. In addition, designated qualified trainers may perform training in their departments. The trainer must actively participate in the Bloodborne Pathogens Train-the-Trainer program (Appendix H).

Employees

The employees are responsible for following procedures and practices as outlined in the Exposure Control Plan. This includes but is not limited to:

- Taking the bloodborne pathogens initial training, annual retraining, and site specific training;
- Demonstrating an understanding of which tasks have a potential occupational exposure to bloodborne pathogens;
- Conducting all operations in accordance with established work practice controls;
- Following universal precautions;
- Developing and maintaining good personal hygiene habits;
- Reporting all occupational exposure incidents.

Exposure Control Plan Availability and Review

The Exposure Control Plan must be readily available to all employees through their supervisor. The plan can be accessed online at www.ehs.msu.edu and/or a hard copy of the plan can be kept in areas where exposure to bloodborne pathogens may be anticipated. Employees are to be advised of the availability of the plan during their education/training sessions.

The MSU Exposure Control Plan will be reviewed annually. It will be updated:

- when new or modified tasks and procedures are implemented which affect occupational exposure of employees;
- to reflect changes in technology that eliminate or reduce exposure to bloodborne pathogens.

Exposure Determination

MIOSHA's Bloodborne Infectious Diseases Standard states that all employees who have duties which potentially expose them to blood or other potentially infectious material are determined to have **a reasonably anticipated risk** of exposure to bloodborne pathogens and are acknowledged in the Exposure Control Plan.

Job classifications which may have a reasonably anticipated risk of exposure to bloodborne pathogens, either by the nature of the occupation or by specific tasks which an employee is required to perform as part of their job are listed in Appendix A. This list may not cover all job classifications where an employee may have a bloodborne pathogens risk. Some employees with a job classification on this list may not be at risk. Risk assessment will be performed by the supervisor.

Methods of Compliance

Universal Precautions

Employees at Michigan State University will observe universal precautions. All human blood and other potentially infectious materials (OPIM) are treated as if they are known to be infectious for HBV, HIV and other bloodborne pathogens.

Universal precautions currently **do not** apply to feces, nasal secretions, sputum (spit), sweat, tears, urine, vomit, or saliva **unless they are visibly contaminated with blood**. In circumstances where it is difficult or impossible to differentiate between body fluid types, all fluids are assumed to be potentially infectious.

Engineering Controls

Where engineering controls such as hand washing facilities, eye wash stations, sharps disposal containers, biological safety cabinets, ventilating laboratory hoods, autoclaves, and safer sharps devices will reduce employee exposure either by eliminating or isolating the hazard, they must be used.

EHS and departments will review tasks and procedures performed to determine where engineering controls can be implemented or updated. The Department Manager or Supervisor will ensure that employees are trained regarding the use of the engineering controls for their job classification and the tasks/procedures they perform. This training will be documented through the completion of the Bloodborne Pathogens Site-specific Training Checklist (Appendix E).

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

1. Safer sharps devices are to be used on human blood or other potentially infectious materials, where appropriate, in order to reduce the risk of injury from needlesticks and from other sharp devices. (Refer to section on the Sharps Injury Protection Program)

Note: *Needles that will not become contaminated by blood or OPIM during use (such as those used to draw medication from vials) are not required to have engineering controls.*

2. Hand washing facilities are readily accessible to all employees who have a potential for exposure. Waterless antiseptic hand cleansers or antiseptic towelettes must be available to employees at risk of exposure if running water is not readily available. If waterless cleansers or towelettes must be used, the employee must follow-up with a soap and water wash as soon as feasible.
3. 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 ANSI requirements as per the MSU Chemical Hygiene Plan. The eye wash facility must be flushed on a regular basis and documented on a log.

Note: *Specifications for eyewash stations found in the MSU Chemical Hygiene Plan must be adhered to in areas where hazardous chemicals are used.*

4. Autoclaves are available in many departments to decontaminate solid biohazardous waste. These departments will monitor this equipment to assure that proper sterilization occurs. Proper instrumentation will be used to verify that time, temperature, and steam are adequate. In addition, EHS will provide an annual check of all autoclaves on campus used for decontaminating biological wastes. Please contact EHS for specifics regarding the annual autoclave check.

5. Sharps containers are used to properly store and dispose of sharps. Approved sharps containers are designed to isolate the cut or puncture hazard associated with handling sharp items. Approved sharps containers are:

- puncture-resistant
- red in color or labeled with a biohazard warning label
- leak-proof on the sides and bottom
- closable

Containers for reusable sharps must meet the same requirements as containers for disposable sharps, with the exception that they are not required to be closable. Reusable sharps will not be stored or processed in a manner that requires reaching **into** containers of contaminated sharps.

Approved sharps containers are available from University Stores. Food containers such as coffee cans should not be used to dispose of contaminated sharp objects.

6. Storage containers are used to reduce the possibility for an environmental release of potentially infectious materials. Primary containers should be designed to be leak-proof, puncture-resistant, and capable of being closed. Single primary containers used for potentially infectious materials should be labeled with the biohazard symbol.

Exceptions:

- Containers of blood, blood components, or blood products which are labeled as to their contents and which have been released for transfusion or other clinical use are exempted from these labeling requirements.
- Individual containers of blood or other potentially infectious materials that are placed in a labeled container during storage are exempted from labeling requirements.

Examples of containers that must be labeled as biohazardous if storing blood or potentially infectious materials:

- Refrigerator
- Freezer
- Liquid nitrogen tank
- Incubator

7. Transport containers are secondary containers that are used to reduce the possibility for an environmental release of potentially infectious materials when transporting biological materials locally between campus facilities as well as over the local roadways. (See Appendix M: Transporting Biological Materials)

Work Practices

Supervisors, working in conjunction with Deans, Directors, Chairpersons or designees will oversee the implementation of Work Practice Controls in cooperation with EHS. The Department Manager or Supervisor will ensure that employees are trained to use work practice controls for their job classification and the tasks/procedures they perform. This training will be documented through the completion of the Bloodborne Pathogens Site-specific Training Checklist (Appendix E).

The following Work Practice Controls are to be implemented:

1. 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 work area (i.e. laboratory, clinic);
 - 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.

Note: Alcohol based hand rubs may be used by healthcare personnel for patient care. When health care personnel's hands are visibly soiled, they should wash with soap and water.

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

When recapping or removal of needles is required because there are no alternatives, a mechanical device or a one handed method must be used.

3. Use mechanical means (i.e. tongs) when handling contaminated sharps when possible and eliminate hand-to-hand passing of sharp instruments.
4. Contaminated sharps must be placed in appropriate containers immediately, or as soon as possible after use.
5. 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.
6. Food and drink must not be kept in refrigerators, freezers, on countertops, or in other storage areas where blood or other potentially infectious materials are present. (See Appendix C, Policy for Food and Drink in Laboratories)
7. Mouth pipetting/suctioning of blood or other infectious materials is prohibited.
8. Minimize splashing, spraying or other actions generating droplets of blood or other potentially infectious materials during all procedures. At a minimum, Biosafety Level 2 precautions are required for laboratories working with specimens of blood or body fluids. Contact EHS for further information and assistance regarding these requirements.

9. Specimens of blood or other materials must be 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.
10. Primary containers of potentially infectious materials must be placed in puncture-resistant, leak-proof, closable secondary containers for transportation outside of the work area (i.e. from lab to lab where a common hallway is used, etc.).
11. Properly prepare and transport biological materials in a vehicle by following the Transporting Biological Materials procedure (Appendix M).
12. Perform disinfection and housekeeping procedures as outlined in “Housekeeping” section of this Exposure Control Plan.

Personal Protective Equipment (PPE)

Personal protective equipment will be provided by the employer at no cost to the employee with an occupational exposure to blood or potentially infectious material. This equipment may include: gloves, gowns, laboratory coats, face shield/masks, splash goggles, resuscitation bags, pocket masks, hoods, and shoe covers.

Personal protective equipment is considered to be appropriate only if it does not permit blood or other potentially infectious material 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 that the protective equipment will be used.

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. This training will be documented through the completion of the Bloodborne Pathogens Site-specific Training Checklist (Appendix E).
- That the personal protective equipment is available in appropriate sizes and accessible locations.
- The employee uses appropriate personal protective equipment unless the employer shows that the employee temporarily and briefly declined to use PPE when, under rare and extraordinary circumstances, it was the employee's professional judgment that in the specific instance the use of PPE would have prevented the delivery of health care or public safety services or posed an increased hazard to the safety of the worker or coworker.

When the employee makes this judgment, the circumstances shall be investigated and documented to determine if changes can be made to prevent future occurrences.

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 to be utilized:

1. All personal protective equipment must be inspected periodically by the department manager or supervisor and repaired or replaced as needed.
2. Reusable personal protective equipment is cleaned, laundered and decontaminated as needed.
3. 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 MSU Waste Disposal Guide.

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

1. Any garments, including personal clothing, penetrated by blood or other infectious materials, must be removed as soon as possible. These garments are to be collected in biohazard bags and decontaminated by the MSU Laundry facility or an appropriate laundry service provider that is selected by the department or disposed of as biohazardous waste.
2. All personal protective equipment must be inspected prior to use to verify that it is in good working condition.
3. All personal protective equipment must be removed prior to leaving the work area.
4. Gloves must be worn when:
 - employees anticipate hand contact with potentially infectious materials;
 - performing vascular access procedures;
 - handling or touching contaminated items or surfaces.

Note: "The US Food and Drug Administration has issued a ban on all powdered gloves. Exposure to starch powder from gloves can cause undesirable reactions, which vary from well-known allergy symptoms and upper respiratory-tract disorders to surgical adhesions and infections. The presence of glove powder can also result in many other undesirable effects, such as interference in laboratory testing causing false results (i.e. PCR – Polymerase Chain Reaction, enzyme immunoassay or some HIV tests)."

5. Disposable gloves must be replaced as soon as possible after contamination or immediately when torn, punctured, or are otherwise rendered unable to function as an exposure barrier.
6. Non-latex gloves must be provided to employees who are allergic to the gloves normally provided.
7. Utility gloves must be decontaminated for reuse; if utility gloves are cracked, peeling, torn or exhibit other signs of deterioration, they must be disposed.
8. Masks/eye protection, or chin-length face shield must be worn as appropriate whenever there is a chance that a splash or spray may generate droplets of infectious materials.
9. Protective clothing must be worn whenever potential exposure to the body is anticipated.
10. Surgical caps/hoods and shoe covers/boots must be used in any instances where gross contamination is anticipated.

Sharps Injury Protection Program

Supervisors of all departments who have employees with occupational exposure to bloodborne pathogens must:

- Use effective engineering controls, including safer sharps devices, in order to reduce the risk of injury from needlesticks and from other sharp medical instruments.

Note: An appropriate safer sharps device includes only devices whose use, based on reasonable judgment in individual cases, will not jeopardize patient or employee safety or be medically contraindicated.

- Establish a program for evaluating safer sharps devices designed to eliminate or minimize occupational exposure. This program should include an identification process, an evaluation process and a selection process.
- Review the sharps that are being used on an annual basis. (See Annual Review section)

Identification Process:

Supervisors shall identify all sharp devices that have available products with safer engineering features and determine which products are to be evaluated.

Evaluation Process:

Evaluation of the safer sharps devices must be documented on the “Safer Sharps Device Evaluation Form” (Appendix I)

Supervisors in departments with direct patient care cannot evaluate and select the safer sharps devices alone; supervisors must choose non-managerial employees who perform tasks with sharps exposure risks to be involved in this process. Supervisors will:

- Provide at least four or more test samples of each product being evaluated to each individual evaluating the product.
- Provide visual instructions and a demonstration of the proper use of each device to all evaluators.
- Review the instructions and rating system on the evaluation form with each evaluator.
- Encourage each evaluator to comment on the forms. This will provide a useful decision making tool.
- Keep all records of completed evaluation forms in their department.

Note: *If safer sharps devices are currently in use, the evaluation process must still be completed.*

Note: *If there is no safer option for a particular sharps device used where there is exposure to blood or OPIM, you are not required to use something other than the device that is normally used. This information must be documented. During your annual review of devices, you must inquire about new or prospective safer options.*

Selection Process:

Once the evaluation process is complete and the safer sharp device has been chosen, supervisors must implement use of the safer sharps devices as soon as possible.

Note: The selection and implementation process cannot be postponed in order to use up supplies of non-safer sharps. Additionally, when the safer sharps are in place, supplies of the non-safer sharps may not be used. Contact EHS for disposal assistance if needed. Do not put unused supplies in the trash or send to salvage. If the safety device is not available (due to supply shortages, back orders, shipping delays, etc.), this must be documented.

Annual Review:

All sharps that are being used where there is exposure to human blood or OPIM must be reviewed on an annual basis. This will be accomplished by completing a "Safer Sharps Devices Annual Review Form" (Appendix J). This form should be completed annually and kept with departmental records.

The purpose of this review form is to document annual consideration and implementation of appropriate commercially available and effective safer sharps devices designed to eliminate or minimize exposure.

The review and update must reflect innovations in procedure and technological developments that eliminate or reduce exposure to bloodborne pathogens. This includes, but is not limited to, newly available sharps devices designed to reduce the risk of percutaneous exposure to bloodborne pathogens.

Housekeeping

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

1. Clean and decontaminate all equipment and surfaces:

- After contact with blood or other potentially infectious materials. (Gross contamination must be removed before decontaminating to ensure the disinfectant is completely effective)
- At the end of the work shift if the surface may have become contaminated since the last cleaning.
- Prior to servicing or shipping. An Equipment Release Form must be attached. If it can be demonstrated that decontamination is not possible, then the following steps need to be taken:
 - Attach a biohazard label is to any contaminated equipment, identifying the contaminated portions;
 - Inform all affected employees, the equipment manufacturer and the equipment service representative of remaining contamination prior to handling, servicing or shipping.
- Immediately when blood or other potentially infectious material is spilled. The following considerations should be made when treating and removing a spill of infectious material:
 - Wear appropriate personal protective equipment when cleaning up spills;
 - Spills should be covered with an absorbent material, wiped up and disposed of in a biohazard bag.

Note: Any department that has a potential for a spill of potentially infectious materials shall have a spill kit and a spill response procedure. An example of a general response procedure and items for assembling a departmental spill kit are included in **Appendix D, Biohazardous Spill Response**. Biological spill kits are available for purchase through the EHS Biosafety Office.

Note: Decontamination must be performed with a disinfectant product that is EPA-registered for the destruction of Hepatitis B, or is a tuberculocidal. The disinfectant must be applied to contaminated surfaces for the amount of time prescribed by the manufacturer to assure effective decontamination.

2. Remove and replace protective coverings as soon as possible when contaminated, and at the end of the work shift after use.
3. Routinely inspect all pails, bins, cans and other receptacles for contamination. Clean these items on a routine basis and decontaminate whenever visibly contaminated.
4. Pick up potentially contaminated broken glassware using mechanical means (such as dustpan and brush) and dispose of in an appropriate sharps container.
5. Inspect laundry to verify that it is free of sharps and other hazardous materials prior to placement in the hamper and shipment to the laundry. Handle contaminated laundry as little as possible. Facilities with high volumes of contaminated laundry have red laundry carts that are leak proof and signify contamination. Facilities without red laundry carts should place any contaminated laundry in a biohazard bag. Attach a label to the bag listing contaminants (i.e. blood).
6. When disposing of biohazardous waste:
 - Place solid waste in a secondary leak-proof container with a lid and a biohazard label. Line the secondary container with a biohazard bag;
 - If autoclaving solid waste, biohazard bags must be autoclavable. After autoclaving, place bags in a non-transparent bag and dispose of in the regular solid waste receptacle;
 - Place containers for regulated waste within easy access to employees and as close as possible to the source of the waste;
 - Maintain waste containers in an upright position, replace routinely, and do not overfill;
 - Close the containers of regulated waste after use and for disposal or transportation to the autoclave or waste collection site.

Note: *Biohazardous wastes are not to be held in the work area for more than 90 days. All biohazardous waste will be disposed of according to the procedures outlined in the MSU's Waste Disposal Guide and the MSU Biohazardous Waste Management Plan.*

HIV and HBV Research Laboratories and Production Facilities

HIV and HBV research laboratories and production facilities present increased risk for occupational exposure to bloodborne pathogens.

HIV or HBV Research Laboratories:

All laboratories engaged in the culture, production, concentration, experimentation, and manipulation of HIV or HBV will reduce employee risk by providing additional administrative controls, protective equipment, information and training beyond that required for research laboratories not involved in such work. Refer to **Appendix N** (HIV and HBV Research Laboratories) for these additional requirements.

HIV or HBV Production Facilities:

MSU does not have HIV or HBV production facilities. The ECP will be modified to meet additional requirements if the research status changes on this campus.

Note: Contact EHS at 517-355-0153 for any questions regarding the status of HIV and HBV research facilities and laboratories at MSU.

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

A "Hepatitis B Vaccination Program" has been established through the MSU Occupational Health/University Physician's Office.

Hepatitis B Vaccination Program

Michigan State University has a vaccination program through the MSU Occupational Health/University Physician's Office. This program is offered to all employees who have occupational exposure to bloodborne pathogens. The cost, as required by statute, is assumed by the employer, MSU.

The vaccination program consists of a series of three vaccinations over a four to six-month period and a post-vaccine titer upon completion of vaccine series. Additional vaccinations may be necessary if there is an inadequate post-vaccine titer. There is currently no medical indication to receive further booster doses or measurement of titer if there is an adequate post-vaccine titer.

Employees will receive information regarding the vaccination program following the completion of the bloodborne pathogens training. They will also receive the required Hepatitis B Surveillance Program form to be completed and returned to the MSU Occupational Health/University Physician's Office (Appendix B). This form can also be accessed by going to: <http://occhealth.msu.edu/files/attachment/109/original/HepBSurveillance.pdf>

The MIOSHA Bloodborne Infectious Diseases standard requires that Hepatitis B vaccine be made available to the employee within ten days of initial assignment and after the employee has completed bloodborne pathogens initial training.

MSU Occupational Health/University Physician's Office, under the supervision of a licensed physician, is responsible for the vaccination program. Employees identified as having an occupational risk of exposure to bloodborne pathogens will be registered with the MSU Occupational Health/University Physician's Office.

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. In these instances, actions should include the following:

- If contact with blood or other potentially infectious material occurs on non-intact skin (i.e. cuts, rashes, acne, dermatitis), wash the area for **15 minutes** with soap and water.
- 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.

Note: *In the case of contact of blood or OPIM with intact skin, the employee should clean the skin immediately with soap and water. If there is any doubt regarding the condition of the contaminated skin, the employee must be medically evaluated as described in this section!*

- Report the incident to a supervisor or person in charge.
- **Initiate medical follow-up immediately.**
- The supervisor refers the employee to any Lansing Urgent Care, Spectrum Occupational Health – Ottawa Ave (if working in the Grand Rapids Area), or to the closest emergency room (if outside the Lansing or Grand Rapids areas).
- The employee should take a completed “Authorization to Invoice MSU” or “Authorization to Invoice MSU Employee Outside of Lansing Area” with them. These forms are available through the MSU Human Resources website.
- If there is an identifiable source, each department will follow their written source protocol for informing the source patient about the incident and assisting in source follow up or to have samples tested if signed consent form from source is in place. (See **Appendix L: Source Protocol Packet**)
- The employee, together with supervisor, will complete and distribute the "Report of Claimed Occupational Injury or Illness" form within 24 hours of the incident. This form is available through the MSU Human Resources website.
- EHS will evaluate all bloodborne pathogens exposure incidents and record the following information on the Exposure Incident Investigation Report:
 - Date/time of Incident
 - Name of employee, job title, department, supervisor
 - Incident description (including route of exposure, device in use, use of engineering/work practices/PPE)
 - Date of most recent bloodborne pathogen training
 - Comments/recommendations/corrective action
- EHS will also complete a Sharps Injury Log for all bloodborne pathogens exposure incidents involving sharps (Appendix K).
- The information in the Exposure Incident Investigation Report and the Sharps Injury Log will be recorded and maintained in such a manner as to protect the confidentiality of the employee.
- The Exposure Incident Investigation Report and the Sharps Injury Log shall be maintained in the Human Resources Department.

Note: *This information shall be obtained through interviews and incident report reviews.*

Medical Record Keeping

The MSU Occupational Health/University Physician’s Office must establish and maintain employee medical records. All information is confidential. Information will not be disclosed without the employee's written consent, except as required or permitted by law.

Labels and Signs

Biohazards must be labeled according to the following procedures. Required labels consist of a red or fluorescent orange colored background with the traditional biohazard symbol in a contrasting color. Labels can be an integral part of the container or affixed by a method that prevents the loss of labels or the unintentional removal of labels. EHS will maintain a supply of the required biohazard labels and signs, which will be available upon request for campus facilities.

The following items must be labeled:

- Containers of regulated waste;
- Refrigerators, freezers, incubators, or other equipment 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 secondary container holds a number of smaller items containing the same potentially infectious substance, only the secondary container needs to be labeled);
- Laundry bags/containers holding contaminated items (Laundry may be placed in a red hamper without a label, a red laundry bag, or a biohazard bag);
- Contaminated equipment.

Biohazard signs must be posted at entrances to any Biosafety Level 2 (or higher) laboratory. For more information on signs and labels contact EHS at 517-355-0153.

Information and Training

All employees who have the potential for exposure to bloodborne pathogens must complete a comprehensive training program provided at no cost and during working hours. This includes:

1. Bloodborne pathogens initial training
2. Bloodborne pathogens annual refresher training

EHS will maintain documentation for all employees who have potential exposure to bloodborne pathogens and have received training through EHS. Departments will maintain documentation of all site-specific training.

Go to the EHS website at www.ehs.msu.edu to sign up for classes and view the training sessions that are available online.

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.

Training Methods:

- 1) Several training techniques may be used including:
 - personal instruction
 - video
 - computer aided training
 - training manuals/employee handouts
 - employee review sessions
- 2) Opportunities for employees to ask questions will be provided.
- 3) Departments requesting training to be conducted at their site must provide a designated person to be available during the training session to answer site-specific questions.
- 4) The participant must complete site-specific training with their supervisor or a designated trainer for their area after completion of initial training, after new tasks have been assigned and annually. (See below for details).

Bloodborne Pathogen Initial Training:

- Taken by all employees who have a potential risk of exposure to human blood or other potentially infectious human materials.
- Completed before the employee performs any tasks that have a bloodborne pathogens exposure risk.
- Available as an online course and in-person training as needed.

Training Topics:

Bloodborne pathogens initial training for new employees who will have occupational exposure to bloodborne pathogens will include the following mandatory topics:

1. MIOSHA's Bloodborne Infectious Diseases Standard;
2. Epidemiology, symptoms and modes of transmission of bloodborne diseases including HIV, HBV, and HCV;
3. Existence of other bloodborne diseases;
4. MSU's Exposure Control Plan including how to access it;
5. Appropriate methods for recognizing tasks and other activities that may involve exposure to blood and other potentially infectious materials;
6. A review of the use and limitations of methods that will prevent or reduce exposure, including:
 - engineering controls
 - work practice controls
 - personal protective equipment
7. Selection and use of personal protective equipment including: types, proper use, limitations, location, removal, handling, decontamination, and disposal;
8. Visual warning of biohazards including labels, signs, and color-coded containers;

9. Proper procedures and materials involved in the cleanup of spills of potentially infectious materials;
10. Information on the Hepatitis B Vaccine, including: availability, efficacy, safety, method of administration, benefits of vaccination, cost (no cost to employees), and MSU's vaccination program including, the Hepatitis B Surveillance Program form
11. Actions to take and persons to contact in an emergency involving blood or other potentially infectious materials;
12. Procedures to follow if an exposure incident occurs, including incident reporting;
13. Post-exposure evaluation and follow-up including medical consultation;
14. Recommendations specific to a particular department and unique threats posed by potentially infectious materials in that department.

Annual Refresher Training:

MSU employees who have previously completed initial bloodborne pathogens training through EHS must take annual refresher training that will be due one year from the last date of training. If overdue, the employee will be required to take the initial bloodborne pathogens training.

The participant must also complete site-specific training annually with their supervisor or a designated trainer for their area.

Site-Specific Training:

Site-specific training must be completed in each department. It must be administered by the employee's supervisor or the supervisor's designated trainer. The following documents must be used:

- Bloodborne Pathogens Site-Specific Training Checklist
- Bloodborne Pathogens Task Procedure form (or departmental procedures)

1. Bloodborne Pathogens Site-Specific Training Checklist (Appendix E):

Completion of this checklist is required in order to complete the training requirements of MIOSHA's "Bloodborne Infectious Diseases" standard.

- The department supervisor or designated trainer must review the items listed on the site-specific training checklist with the employee and check each item as it is reviewed. Write N/A if it is not applicable to your work area.
- A Supervisor's Guidelines for Site-Specific Training form (Appendix F) is a tool to help assist the supervisor (or designated trainer) in completing the checklist with the employee.

- Bloodborne Pathogens Task Procedure forms (see below) or department procedures (involving tasks that may involve handling human blood or other potentially infectious materials) must be reviewed as part of the site-specific training checklist.
- When complete, the supervisor (or designated trainer) and the employee must sign and date the checklist.
- Laboratories using biologicals/toxins or chemicals may use the combined checklist, Laboratory Site Specific Training, to comply with bloodborne pathogens site-specific training.
- Checklists must be completed within 30 days of initial training, after a procedural change, when new tasks are assigned, and annually. They must be kept with departmental records and may be subject to periodic checks by EHS. These records must be kept for three years.

Note: *If the participant performs duties involving a bloodborne pathogen exposure risk at a location that is off-campus, such as clinical or research work at a local healthcare facility, the participant should complete the checklist with that facility's supervisor/trainer. In these situations, the site-specific information to be reviewed must include the off-campus facility's policies and procedures related to their exposure control plan and medical waste management plan.*

2. Bloodborne Pathogens Task Procedure form (Appendix G)/Departmental Procedures:

Written procedures are required for all tasks that have a reasonably anticipated risk of exposure to bloodborne pathogens.

- This can be accomplished through the use any of the following:
 - Standard Operating Procedures
 - Policies
 - Directives
 - Bloodborne Pathogens Task Procedure forms (Appendix G)
- The procedures must be reviewed as part of the Site-Specific Training Checklist:
 - After completion of bloodborne pathogens initial training
 - Whenever a procedure changes or new tasks are assigned
 - Annually
- Completed forms should be maintained with-departmental records and be readily available for regulatory review.

Training Record Keeping/Retention:

1. All bloodborne pathogens training that is conducted by EHS or by an EHS designated trainer must be documented by EHS and contain the following information:
 - Dates of training sessions;
 - Names and job title of employees attending the training sessions
 - Contents/summary of the training sessions
 - Names of the instructors
2. All EHS designated trainers must send a copy of the sign-in form to EHS for computerized record keeping purposes.
3. Training records must be retained for three (3) years.

Bloodborne Pathogens Compliance Visits:

Biological safety staff from EHS will periodically visit departments, labs, and clinics that are working with or may come in contact with human blood or other potentially infectious materials to assure that regulatory compliance needs are met and to identify areas where further assistance is needed.

Visits will be scheduled in advance and will include checking worksite for items such as proper use of the equipment and signage as well as a review of departmental procedures and training documents.

If you have any questions regarding the Bloodborne Pathogen Exposure Control Plan or other Safety and Health concerns, contact the:

Environmental Health & Safety Office (EHS) at 517-355-0153

or the:

MSU Occupational Health/University Physician's Office at 517-353-9137.

APPENDIX A: Exposure Determination

The provisions of MSU's Exposure Control Plan apply to all employees who have a **reasonably anticipated risk** of exposure to blood or other potentially infectious material (OPIM) as the result of **required** occupational tasks. Exposure determination is made without regard to the use of personal protective clothing or equipment.

Job classifications which may have a reasonably anticipated risk of exposure to bloodborne pathogens, either by the nature of the occupation or by specific tasks which an employee is required to perform as part of their job, will be considered Category A. This list may not cover all job classifications where an employee may have a bloodborne pathogens risk. Some employees with a job classification on this list may not be at risk. A risk assessment must be performed by the supervisor.

ADMIN ASST/ASSOC	EEG TECHNOLOGIST	MAINTAINER FIRE SAFETY EQUIP	RECREATION ASST
ANALYTICAL LAB TECH	ELECTRON MICROSCOPIST	MAINTAINER FOOD EQUIP	RESEARCH ASST/ASSOC
ANATOMY REOURCES MGR	ENGINEERING SVCS MGR	MAINTENANCE SUPR/WKR/ASST	RESEARCH INTEGRITY OFFICER
ANIMAL CARETAKER	EVENTS WKR	MANAGER	RESEARCH TECH
ATHLETIC EQUIP SUPR	EXECUTIVE MGMT DIR	MATERIAL RECOVERY FAC/SURPLUS WKR	RESPIRATORY THERAPIST
ATHLETIC TRAINER	EXTENSION PROGRAM INSTR	MATERIALS TRAFFIC CONTROL WKR	SAFETY MGR
ATHLETICS EQUIP MGR	FACILITIES COORD	MEAT LAB MGR/ASST	SAFETY TECH
ATHLETICS/RECREATION ASST	FACILITIES MGR/SUPR/ASST	MECHANICAL MAINTENANCE	SAFETY/SECURITY ASST
BANQUET/CATERING MGR	FARM MGR	MEDICAL LAB TECH	SAFETY/SECURITY ASST
BIOLOGICAL SAFETY OFFICER	FIRE & OCCUPATIONAL SAFETY INSTR	MEDICAL TECHNOLOGIST	SECRETARY
BLDG SANITATION WKR	FOOD SERVICE ASST	MOTOR VEHICLE OPERATOR	SERVICE MGR
BLDG SERVICES CUSTODIAN	FOOD SERVICE ASST	MRI SERVICE MGR	SET UP WORKER
BLDG SERVICES WKR	GARDENER	NURSE ADMINSTRATOR	SHOOTING RANGE MGR
BOTANICAL TECH	GROUND/HORTICULTURE ASST	NURSE CLINICIAN/MGR	SIM HEALTH CARE PROVIDER
CARDIOVASCULAR TECH	GROUND/HORTICULTURE ASST	NURSE PRACTITIONER	SIMULATION ASST
CARE MGR	HAZARDOUS MATERIALS PROF	NURSE RESEARCH	SOCIAL WKR
CHAIRPERSON/ASSOC/ASST	HAZARDOUS WASTE COORD	OCCUPATIONAL SAFETY COMPL OFFICER	SPECIAL EVENTS ASST
CHEF/SOUS/EXECUTIVE	HEALTH CARE ASST	OCCUPATIONAL THERAPIST	SPECIALIST
CHEMICAL SAFETY OFFICER	HEALTH PHYSICIST	OFFICE MGR/SUPR/ASST	SPECIMEN PROCESSING ASST
CHILD CARE COORD	HISTOLOGY TECH	OPERATIONS & SAFETY COORD	SPORTS PERFORMANCE PROFESSIONAL
CLERICAL AIDE	HUMAN ANATOMY DISSECTOR	OPERATIONS OFFICER/SUPR	SUPPORTED PROGRAMS ANALYST
CLINIC COORD/MGR	HUMAN ANATOMY PREP TECH	OPERATIONS SPECIALIST	SWIMMING POOL OPERATOR
CLINICAL LAB MGR	INCINERATOR OPERATOR	PEST CONTROL WKR	TEACHING ASST
CLINICAL RSRCH COOR	INDUSTRIAL HYGIENIST	PHARMACIST	TECHNICAL AIDE
CLINICAL RSRCH COVERAGE ANALYST	INFORMATION SVCS PROJECT MGR	PHYSICAL THERAPIST/ASST	TECHNICAL ASST
CLINICAL RSRCH OPS ADMIN	INFORMATION TECH/ASST	PHYSICIAN	TENNIS FACILITY MGR
COACH/HEAD/ASSOC	INSTITUTE/CENTER DIR	PHYSICIANS ASST	ULTRASONOGRAPHER
COACHING AIDE	INSTRUC EQUIP & SUPPLIES TECH		UNDERGRADUATE ASST
COMMUNITY OPS COORD	INSTRUCTOR/ASST	PLUMBER	UNIT HR ADMINISTRATOR
CONFERENCE COORD/MGR	LAB MGR/SUPR/TECH/WKR	POLICE OFFICER/SGT/LT/CAPT	UNIV ACTIVITIES BOARD MGR
CULINARY SVCS RETAIL EVENTS MGR	LAB PREPARATION SUPR	PROFESSIONAL AIDE	UNIV SERVICES ASST DIR
CURRICULUM ASST	LABOR ASST	PROFESSOR/ASSOC/ASST	UNIVERSITY PHYSICIAN
CUSTODIAL SVCS MGR/SUPR	LABORER	PROFESSORIAL ASST	VETERINARY ASST
CUSTODIAN	LANDSCAPE SVCS UTILITY WKR	PULMONARY FUNCTION TECH	VETERINARY LAB TECH
DEAN/ASSOC/ASST	LAUNDRY EQUIP MAINTAINER	QUALITY & RISK MGT ADMIN	VETERINARY TECH
DINING SVC CULINARY COOD	LAUNDRY HELPER/WKR	QUALITY MGT COORD	WAREHOUSE ATTENDENT
DINING SVD MGR/ASST	LEAD WKR	RADIOGRAPHER	
DIRECTOR/ASSOC/ASST	LICENSED PRACTICAL NURSE	RADIOLOGY SERVICE MGR	
EDUCATIONAL PROGRAM COOD	LIFEGUARD	RANGE SAFETY OFFICER	

VACCINE INFORMATION STATEMENT

Hepatitis B Vaccine

What You Need to Know

Many Vaccine Information Statements are available in Spanish and other languages. See www.immunize.org/vis

Hojas de Información Sobre Vacunas están disponibles en Español y en muchos otros idiomas. Visite www.immunize.org/vis

1 What is hepatitis B?

Hepatitis B is a serious infection that affects the liver. It is caused by the hepatitis B virus.

- In 2009, about 38,000 people became infected with hepatitis B.
- Each year about 2,000 to 4,000 people die in the United States from cirrhosis or liver cancer caused by hepatitis B.

Hepatitis B can cause:

Acute (short-term) illness. This can lead to:

- loss of appetite
- diarrhea and vomiting
- tiredness
- jaundice (yellow skin or eyes)
- pain in muscles, joints, and stomach

Acute illness, with symptoms, is more common among adults. Children who become infected usually do not have symptoms.

Chronic (long-term) infection. Some people go on to develop chronic hepatitis B infection. Most of them do not have symptoms, but the infection is still very serious, and can lead to:

- liver damage (cirrhosis)
- liver cancer
- death

Chronic infection is more common among infants and children than among adults. People who are chronically infected can spread hepatitis B virus to others, even if they don't look or feel sick. Up to 1.4 million people in the United States may have chronic hepatitis B infection.

Hepatitis B virus is easily spread through contact with the blood or other body fluids of an infected person. People can also be infected from contact with a contaminated object, where the virus can live for up to 7 days.

- A baby whose mother is infected can be infected at birth;
- Children, adolescents, and adults can become infected by:
 - contact with blood and body fluids through breaks in the skin such as bites, cuts, or sores;
 - contact with objects that have blood or body fluids on them such as toothbrushes, razors, or monitoring and treatment devices for diabetes;
 - having unprotected sex with an infected person;
 - sharing needles when injecting drugs;
 - being stuck with a used needle.

2 Hepatitis B vaccine: Why get vaccinated?

Hepatitis B vaccine can prevent hepatitis B, and the serious consequences of hepatitis B infection, including liver cancer and cirrhosis.

Hepatitis B vaccine may be given by itself or in the same shot with other vaccines.

Routine hepatitis B vaccination was recommended for some U.S. adults and children beginning in 1982, and for all children in 1991. Since 1990, new hepatitis B infections among children and adolescents have dropped by more than 95%—and by 75% in other age groups.

Vaccination gives long-term protection from hepatitis B infection, possibly lifelong.

3 Who should get hepatitis B vaccine and when?

Children and adolescents

- Babies normally get 3 doses of hepatitis B vaccine:

1st Dose:	Birth
2nd Dose:	1-2 months of age
3rd Dose:	6-18 months of age

Some babies might get 4 doses, for example, if a combination vaccine containing hepatitis B is used. (This is a single shot containing several vaccines.) The extra dose is not harmful.

- Anyone through 18 years of age who didn't get the vaccine when they were younger should also be vaccinated.

Adults

- All unvaccinated adults at risk for hepatitis B infection should be vaccinated. This includes:
 - sex partners of people infected with hepatitis B,
 - men who have sex with men,
 - people who inject street drugs,
 - people with more than one sex partner,
 - people with chronic liver or kidney disease,
 - people under 60 years of age with diabetes,
 - people with jobs that expose them to human blood or other body fluids,



U.S. Department of
Health and Human Services
Centers for Disease
Control and Prevention

APPENDIX B: HEPATITIS B VACCINATION PACKET

- household contacts of people infected with hepatitis B,
- residents and staff in institutions for the developmentally disabled,
- kidney dialysis patients,
- people who travel to countries where hepatitis B is common,
- people with HIV infection.
- Other people may be encouraged by their doctor to get hepatitis B vaccine; for example, adults 60 and older with diabetes. Anyone else who wants to be protected from hepatitis B infection may get the vaccine.
- Pregnant women who are at risk for one of the reasons stated above should be vaccinated. Other pregnant women who want protection may be vaccinated.

Adults getting hepatitis B vaccine should get 3 doses—with the second dose given 4 weeks after the first and the third dose 5 months after the second. Your doctor can tell you about other dosing schedules that might be used in certain circumstances.

4

Who should not get hepatitis B vaccine?

- Anyone with a life-threatening allergy to yeast, or to any other component of the vaccine, should not get hepatitis B vaccine. Tell your doctor if you have any severe allergies.
- Anyone who has had a life-threatening allergic reaction to a previous dose of hepatitis B vaccine should not get another dose.
- Anyone who is moderately or severely ill when a dose of vaccine is scheduled should probably wait until they recover before getting the vaccine.

Your doctor can give you more information about these precautions.

Note: You might be asked to wait 28 days before donating blood after getting hepatitis B vaccine. This is because the screening test could mistake vaccine in the bloodstream (which is not infectious) for hepatitis B infection.

5

What are the risks from hepatitis B vaccine?

Hepatitis B is a very safe vaccine. Most people do not have any problems with it.

The vaccine contains non-infectious material, and cannot cause hepatitis B infection.

Some mild problems have been reported:

- Soreness where the shot was given (up to about 1 person in 4).
- Temperature of 99.9°F or higher (up to about 1 person in 15).

Severe problems are extremely rare. Severe allergic reactions are believed to occur about once in 1.1 million doses.

A vaccine, like any medicine, could cause a serious reaction. But the risk of a vaccine causing serious harm, or death, is extremely small. More than 100 million people in the United States have been vaccinated with hepatitis B vaccine.

6

What if there is a serious reaction?

What should I look for?

- Look for anything that concerns you, such as signs of a severe allergic reaction, very high fever, or behavior changes.

Signs of a severe allergic reaction can include hives, swelling of the face and throat, difficulty breathing, a fast heartbeat, dizziness, and weakness. These would start a few minutes to a few hours after the vaccination.

What should I do?

- If you think it is a severe allergic reaction or other emergency that can't wait, call 9-1-1 or get the person to the nearest hospital. Otherwise, call your doctor.
- Afterward, the reaction should be reported to the Vaccine Adverse Event Reporting System (VAERS). Your doctor might file this report, or you can do it yourself through the VAERS web site at www.vaers.hhs.gov, or by calling 1-800-822-7967.

VAERS is only for reporting reactions. They do not give medical advice.

7

The National Vaccine Injury Compensation Program

The National Vaccine Injury Compensation Program (VICP) is a federal program that was created to compensate people who may have been injured by certain vaccines.

Persons who believe they may have been injured by a vaccine can learn about the program and about filing a claim by calling 1-800-338-2382 or visiting the VICP website at www.hrsa.gov/vaccinecompensation.

8

How can I learn more?

- Ask your doctor.
- Call your local or state health department.
- Contact the Centers for Disease Control and Prevention (CDC):
 - Call 1-800-232-4636 (1-800-CDC-INFO) or
 - Visit CDC's website at www.cdc.gov/vaccines

Vaccine Information Statement (Interim) Hepatitis B Vaccine

2/2/2012

42 U.S.C. § 300aa-26

MSU BBP Exposure Control Plan
Appendix B - Revised Aug/2017

Office Use Only



APPENDIX B: HEPATITIS B VACCINATION PACKET

Michigan State University

Hepatitis B

Surveillance Program

Name: _____

APID/ZPID: _____

Department: _____

Date of Birth: _____

Work Phone: _____

Supervisor: _____

YOU MUST CHOOSE OPTION A OR B AND SIGN IN THE RELEVANT SECTION.

Option A: Not previously vaccinated and want to be vaccinated: Please sign vaccine request and call MSU Occupational Health at 353.9137 to schedule an appointment.

I understand that due to my occupational exposure to blood or other potentially infectious materials, I may be at risk of acquiring hepatitis B virus (HBV) infection. I elect to receive the Hepatitis B vaccine at this time at no cost to myself.

Signature: _____ Date: _____

Option B: Not previously vaccinated and choose NOT to receive Hepatitis B vaccine at this time OR previously vaccinated but have no documentation of vaccinations: Please complete vaccine waiver.

I understand that due to my occupational exposure to blood or other potentially infectious materials, 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. 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 other potentially infectious materials and I want to be vaccinated with Hepatitis B vaccine, I can receive the vaccination series at no charge to me.

Signature: _____ Date: _____

If previously vaccinated, list approximate dates below AND SIGN ABOVE:

1st Dose: _____ 2nd Dose: _____ 3rd Dose: _____

If titer done, indicate result: Positive (adequate immunity) ☐ Negative ☐

Clinic(s) where vaccinated: _____

Send completed form to: MSU Occupational Health, Olin Health Center, 463 East Circle Drive, Room 346 East Lansing, MI 48824-1037 Or Fax to 517.355.0332. For questions, call 517.353.9137.

APPENDIX C

Michigan State University Policy for Food and Drink in Laboratories

The following statement is the accepted practice for food and drink in campus laboratories and should be abided by at all times:

“There shall be no food, drink, smoking or applying cosmetics in laboratories which have radioactive materials, biohazardous materials or hazardous chemicals present. There shall be no storage, use or disposal of these ‘consumable’ items in laboratories (including refrigerators within laboratories). Rooms which are adjacent, but separated by floor to ceiling walls, and do not have any chemical, radioactive or biological agents present, may be used for food consumption, preparation, or applying cosmetics at the discretion of the principal investigator responsible for the areas.”

APPENDIX D: Biohazardous Spill Response

A biohazardous spill occurs anytime there is an unplanned release of potentially infectious material into the work environment. Proper response to these incidents can ensure personnel and community safety while eliminating environmental contamination. In order for a biohazardous spill response to be effective and safe for the campus community, affected work groups must:

- Implement a spill response procedure for their work environment;
- Assure that spill cleanup materials are available for use;
- Assure that all personnel are trained in the provisions of the spill response procedure.

Biohazardous Spill Kits

Each work group that has a potential for a biohazardous spill should have sufficient and appropriate spill cleanup materials available to respond to the largest anticipated spill for that area. The basic items that should be included in a kit are:

- Disposable Gloves: Change annually
- Splash goggles: Check straps annually
- Absorbent materials: (i.e. Paper towels, SSS Clean-up Powder, Green-Z)
- Disinfectant: EPA registered product effective for destruction of HBV (i.e. bleach, Oxivir Tb, Hepacide Quat) – Change as required
- Mechanical tools (i.e. dustpan/broom, tongs)
- Biohazard bags
- Spill response procedure

Additional items might include protection for street clothing.

In some situations, it may not be appropriate for personnel to clean up a biohazardous spill. This may be the case if:

- An employee has not received training in biohazardous spill cleanup;
- Appropriate spill materials are not available;
- The spill is a combined hazard spill (i.e. radiation and biohazard);
- The spill is too large to be handled by your staff.

In these situations, personnel should take the following primary response steps:

1. Notify others in the work area of the spill;
2. Close off the area where the spill is located;
3. Call the designated spill responders (custodial staff, EHS, etc.);
4. Keep others out of the spill area until responders arrive and spill hazard is removed.

For more information regarding biohazardous spill response procedures, or for assistance with developing a departmental procedure, please contact the Biosafety Staff at EHS at 355-0153.

Sample Biohazardous Spill Procedure

This procedure is applicable to spills on a nonporous surface such as a tile floor or concrete floor.

1. Notify others working in the area of the hazard present.
2. Get your biohazard spill kit and review spill procedure before proceeding with cleanup.
3. Remove spill supplies from kit and line bucket/container with a biohazard bag. (Retrieve a sharps container for disposal of sharps if necessary.)
4. At a minimum, wear two pairs of gloves and splash goggles.
5. If applicable, using mechanical means (i.e. dustpan/broom, tongs), pick up any contaminated sharp items (needles, broken glass, etc.) and place them in an approved sharps container for disposal.
6. Cover the spill with an absorbent material (i.e. Paper towels, SSS Clean-up Powder, Green-Z).
7. Remove the absorbent material. If using a powder/solidifier, use a mechanical tool (i.e. dustpan and broom, plastic scrapers) to remove. Dispose of all absorbent materials and tools into a biohazard bag.
8. Spray/apply the spill area with disinfectant and allow the appropriate contact time as recommended by the disinfectant manufacturer's instructions (i.e. 10 minute contact time for bleach)
9. Remove residual disinfectant with paper towels. (If using disinfectant wipes, allow to air dry) Dispose of the towels in the biohazard bag.
10. Repeat steps 8 and 9 for sufficient disinfection of contaminated surfaces.
11. Remove outer pair of gloves only and dispose of them in the biohazard bag.
12. Remove splash goggles with inner gloves still on, and dispose of or disinfect the goggles.
13. Remove inner pair of gloves and place them in the biohazard bag for disposal.
14. Close the bag and dispose of as biohazardous waste.
15. Wash your hands with soap and water as soon as possible.
16. Return spill kit to designated location. Ensure that the spill kit is restocked for next use.

Bloodborne Pathogens Site-Specific Training Checklist

Dear Manager/Trainer:

_____ has completed the MSU Initial/Refresher Bloodborne Pathogens training _____.
 (Print Employee's Name) (Date of Training)

In order to complete the training requirements of MIOSHA's "Bloodborne Infectious Diseases" standard, please review the site-specific training items listed below with the employee. Please check each item as it is reviewed or write N/A if it is not applicable to your work area. Once completed, please sign and date the checklist. Return this form to the employee and keep a copy with departmental records. ***This BBP checklist or the Laboratory Safety Site-Specific checklist must be completed after initial training, anytime there is a procedure change relevant to the exposure risk, and on a yearly basis.***

EHS Biological Safety Staff (517)355-0153

Specific Work Practices

_____ Discussion of tasks that may involve handling potentially infectious materials and how to perform the tasks in a manner that reduces risk of exposure. (Review Task Procedure forms or department procedures)

Personal Protective Equipment (PPE) (gloves, eye protection, ventilation devices, etc.)

_____ Explanation of types of PPE required for specific tasks;

_____ How to use the PPE;

_____ Location and availability of PPE;

_____ Maintenance of reusable PPE (cleaning, storage and inspection).

Engineering Controls

_____ Location, operation, and use of log for eyewash facilities;

_____ Explanation of engineering controls that are specific to the work environment (examples: sharps containers, biological safety cabinets, mechanical pipettors, safer sharps devices, etc.).

Biohazardous Waste Handling

_____ Discussion and clarification of which wastes generated in the work area are biohazardous and how those items are to be segregated, stored, transported, treated and disposed of;

_____ Review of procedures for on-site treatment methods (i.e. proper use of autoclave for waste decontamination purposes);

_____ Review of hazardous waste labeling and Pick-Up procedures as they apply to the work area (refer to the MSU Waste Disposal Guide and Biohazardous Waste Management Plan). For employees working at off campus facilities, review the facility's medical waste management plan requirements.

Disinfection & Spill Response/Exposure Incident Response/Exposure Control Plan

_____ Review of work area's procedure for handling spills of potentially infectious materials (including location and availability of biohazard spill kits);

_____ Review of exposure incident response procedure;

_____ Review how to access the BBP Exposure Control Plan.

Additional Requirements for HIV and HBV Research Laboratories:

_____ Read the MSU Biosafety Manual;

_____ Complete the EHS Biological Safety Training;

_____ Review departmental security access procedures.

Verification of Training: I certify that the site-specific training items were reviewed and understood as required by the MSU Exposure Control Plan. (Complete a form for each facility you are working at)

 Manager/Trainer Signature - Date

 Employee Signature - Date

APPENDIX F

Supervisor's Guidelines for BBP Site-Specific Training

About This Document:

In accordance with the requirements of Michigan OSHA's Bloodborne Infectious Diseases standard as well as the MSU Bloodborne Pathogens Exposure Control Plan, supervisors must assure that all personnel with reasonably anticipated risk of exposure to human blood or other potentially infectious materials (OPIM) receive training that is relevant for their specific worksite in order to most effectively reduce their occupational exposure risk. This training is to be performed initially, on an annual basis and anytime there is a procedure change relevant to the exposure risk. The Bloodborne Pathogens Site-Specific Training Checklist was developed to serve as a means of documenting that this training has occurred as required by the regulations.

While documentation of the training is essential, it is important to assure that the site-specific information reviewed with employees is consistent and inclusive of all exposure risk-related topics. Therefore, the EHS has developed this guidance document to assist supervisors and departmental trainers in assuring appropriate coverage of this information.

Using This Document:

This document is meant to be a companion for the Bloodborne Pathogens Site-Specific Training Checklist. The training topics found on that form are listed in the table below. Each topic is followed by a guideline section that provides recommendations for the nature of the information to be covered. Additionally, fill-in sections are included to assist you in preparing your training.

Site-Specific Training Topic	Specific Work Practices
	<ul style="list-style-type: none"> Discussion of tasks that may involve handling potentially infectious materials and how to perform such tasks in a manner that reduces risk of exposure.
<p>GUIDELINES</p> <p>Job tasks with a potential risk for BBP exposure need to be identified as well as the equipment and practices to be used to reduce the exposure risk. This information for each task should be documented on a BBP Task Procedure form and kept on file in each department/lab/clinic. The information captured on those forms will serve as the basis for a large portion of the information to be covered for initial and annual site-specific training.</p> <p>The job tasks that put employees at risk for exposure to blood/OPIM are:</p> <ol style="list-style-type: none"> 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ <p>Note: Examples of job tasks with potential for exposure to blood/OPIM include administering first aid, phlebotomy (blood draws), blood/OPIM spill response, handling or treating waste contaminated with blood/OPIM, etc.</p>	

Site-Specific Training Topic	Personal Protective Equipment (PPE) (gloves, eye protection, face shields, etc.) <ul style="list-style-type: none"> • Explanation of what kinds of PPE are required for specific tasks; • How to use the PPE; • Location and availability of PPE; • Maintenance of reusable PPE (cleaning, storage and inspection).
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GUIDELINES

Information regarding what PPE to use for specific tasks should be outlined on the **BBP Task Procedure** form (or department policy/SOP). To effectively cover this information, you should have a physical hands-on review of the PPE to be used. This demonstration and discussion will allow you to cover several essential elements for proper PPE use. By the end of this review, your employees should be able to answer the following:

- What PPE do I need to wear for what tasks?
- What are the limitations of the device?
- Where can I find this device?
- What is the right size for me?
- How do I inspect it to assure that it is in good working order?
- Can I reuse the device or must I dispose of it after one use?
- If I can reuse the device, what steps must I take for properly cleaning and storing the device?

For further information on PPE selection, please consult EHS. However, here are some general selection tips for PPE commonly used for protection against exposure to blood/OPIM.

Disposable gloves (i.e. nitrile, latex): These provide skin protection against brief exposure to bodily fluids (blood/OPIM). They are not generally recommended for immersion and they are not puncture-resistant or thermal resistant. Double-gloving may be recommended if likelihood of contamination is strong. Some individuals may be sensitive to latex so a latex-free option is advised.

Splash goggles: These are the only eye protection rated for splash. If a true splash hazard exists, it is recommended that a shield be used whenever possible.

Face shields: These are rated for face protection and should not be used alone as a form of eye protection. Minimally, safety glasses should be worn under the face shield. Face shields are appropriate if there is a likelihood of generating aerosols and the face must be close to the hazard based on the nature of the task. As with splash goggles, whenever possible, procedures should be done behind a shield to minimize the exposure risk and the PPE requirements. *Please note that surgical masks are often fluid-resistant but are not generally considered to be a means of skin protection.*

Lab coats: Unless a lab coat is made of fluid-resistant material (i.e. Tyvek), it should not be assumed to be an effective fluid barrier. If a lab coat becomes contaminated with blood/OPIM, it should be removed as soon as possible. Clothing and skin should be examined for possible contamination. If contamination has reached the skin, the affected area should be immediately washed and assessed for potential of BBP exposure. Contaminated lab coats should be placed in a biohazard bag and sent to a designated laundry service. If used as PPE, lab coats must not be taken home for washing by employees.

Further comments on PPE:

Site-Specific Training Topic	Engineering Controls <ul style="list-style-type: none"> • Location and operation of eyewash facilities; • Explanation of engineering controls that are specific to the work environment (examples: sharps containers, biological safety cabinets, mechanical pipettors, safer sharps devices, etc.).
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GUIDELINES

Information regarding the use of engineering controls for specific tasks should be outlined on the **BBP Task Procedure** form (or department policy/SOP). Engineering controls are items that isolate or eliminate the hazard. In many instances, engineering controls are pieces of equipment and they are only effective as barriers if used properly. Therefore, as with the PPE information, hands-on review is important in assuring that personnel understand how these devices work. By the end of this review, your employees should be able to answer the following:

- What engineering controls do I need to use for what tasks?
- How does the engineering control isolate the hazard?
- How do I properly use the engineering control?
- How do I inspect it to assure that it is in good working order?
- What maintenance is required of the device?

There are a variety of items that may be used as engineering controls for minimizing exposure risk to blood/OPIM. Here are some general tips regarding engineering control use and maintenance for some of the more common devices. For additional assistance regarding engineering controls, please contact the EHS Biosafety Staff at 355-0153.

Sharps Containers: These are puncture-proof collection containers with a restricted closable opening to reduce the risk of personnel or patients being punctured with a sharp device. Therefore, tops must be installed before use. Lids should be closed when the container is not in use. The proper size of container should be selected for the sharps in use. For example, containers with horizontal drops are best suited for longer devices (5" to 8"). Containers should be stored in an upright position when in use because they are not necessarily leak-proof at the top.

Eyewashes: These devices are used for emergency flushing in the event of an exposure. Therefore, they must be clean and unobstructed at all times. A log must be kept to document maintenance.

Safer Sharp Devices: Needles, scalpels and other sharp medical devices used in environments where a BBP hazard is present must have a design feature that allows shielding of the sharp end after use but before disposal. Because the operation of these devices varies somewhat from the "traditional" sharps, it is essential that all personnel receive training and practice on devices before they are implemented in lab or clinical use. Additionally, please refer to the "Sharps Injury Protection Program" section of the MSU Bloodborne Pathogens Exposure Control Plan for information on product evaluation and annual product review requirements.

Biosafety Cabinets (BSC): Biosafety cabinets are equipped with HEPA filters that will capture potentially infectious aerosols. They can provide both product and personnel protection and are commonly used for manipulation of human cells. Open flames should not be used in a BSC. If the BSC is equipped with a UV light, personnel must assure that they do not work with this light on or work in the room while the light is on. BSC use is covered in the biosafety training course offered by the EHS. Please note that human cell users are required to complete biosafety training as well as bloodborne pathogens training.

Further Information for Engineering Controls:

Site-Specific Training	Biohazardous Waste Handling <ul style="list-style-type: none"> • Discussion and clarification of which wastes generated in the work area are biohazardous and how those items are to be segregated, stored, transported, treated and disposed of; • Review of procedures for on-site treatment methods (i.e. proper use of autoclave for waste decontamination purposes); • Review of hazardous waste labeling and Pick-Up procedures as they apply to the work area (refer to the MSU Waste Disposal Guide and Biohazardous Waste Management Plan). For employees working at Non-MSU facilities, review the facility's medical waste management plan requirements.
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GUIDELINES

This information is most effectively captured with a fill-in section outlining what waste items are generated, how they are segregated, and how waste is handled for treatment and disposal.

Solid Biohazardous Waste: In the healthcare setting, these are disposable items other than sharps that are contaminated with blood/OPIM to the degree that this material can drip off or flake off the item. In the lab setting, these are disposable items that are contaminated with biological material, regardless of the level of contamination. These items must be placed in leakproof receptacles lined with a biohazard bag. These receptacles must be labeled with the biohazard symbol and be covered with a lid when not in use.

Solid biohazardous waste generated by your department includes the following items:

Solid biohazardous waste is treated for disposal by the following means:

Note: If using an autoclave for waste treatment, please review autoclave operation procedure as well as waste treatment procedure posted by all campus autoclaves that are approved for biohazardous waste treatment.

Sharps Waste: These are items that are sharp enough to puncture the skin and are biologically contaminated. Additionally, all needles, syringes, and IV tubing with needles attached must be disposed of as sharps regardless of their contamination status. These items must be placed in an appropriately sized sharps container for disposal. Containers must be permanently closed and disposed of within 90 days of first use or when they are $\frac{3}{4}$ full, whichever comes first. Containers should have a waste tag or sharps label attached if disposal through EHS.

Sharps waste generated by your department includes the following items:

Sharps containers are disposed of by the following means:

Other wastes: Refer to the MSU Bloodborne Pathogens Exposure Control Plan or the MSU Biohazardous Waste Management Plan for further information if you are generating pathological or liquid wastes.

Further procedural points for review related to waste treatment and disposal (i.e. medical waste hauler pickup procedures, disposal of liquid or pathological wastes, etc.)

Site-Specific Training Topic	Disinfection & Spill Response/Exposure Incident Response/Exposure Control Plan <ul style="list-style-type: none"> • Review of work area's procedure for handling spills of potentially infectious materials (including location and availability of biohazard spill kits); • Review of exposure incident response procedure; • Location of the Exposure Control Plan.
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GUIDELINES

Disinfection should be performed as prescribed in the MSU Bloodborne Pathogens Exposure Control Plan (i.e. whenever there is visible contamination, following a spill, at the conclusion of work with blood/OPIM, etc.). Personnel should be trained on the proper and effective preparation and use of the disinfectant in your work area. This training should include chemical hazard information as outlined on the material safety data sheet (MSDS) for the product. *Note: The product must be an EPA-registered for the destruction of Hepatitis B virus and HIV.* Disinfectants in use include:

Spill response procedures will vary depending on the work environment. If personnel are not designated spill responders, they must be informed of the procedure to follow in the event of a blood/OPIM spill. This will generally include isolation of the affected area and calling the designated responders.

If personnel are expected to perform spill cleanup, it is essential that they know where the spill kit is located, how to use it, and how to dispose of the waste following such a cleanup. It is strongly advised that personnel are given a hands-on training related to this task.

The spill response procedure for the work area is/the location of the spill kit is:

The procedure for spill waste disposal is:

The procedure for restocking the kit is:

Exposure Response

Actions to take in the event of an exposure should be reviewed. A Report of Claimed Occupational Injury or Illness form must be completed. If there is an identifiable source, the department's source protocol must be followed. Assure that personnel know what these forms are and where they may be accessed. For on-campus exposure incidents, personnel should report to Lansing Urgent Care. For off campus exposure incidents, personnel should report to Lansing Urgent Care or the closest emergency room. Upon arrival, the employee should identify themselves as an MSU employee who has had a BBP exposure in order to receive expeditious assessment. If your department is off-campus, identify your emergency care facility:

Location of the Exposure Control Plan

The MSU Bloodborne Pathogens Exposure Control Plan is available on the EHS website at www.ehs.msu.edu. A hard copy of the Plan may be printed to keep along with site-specific procedures and/or BBP Task Procedure forms. Identify the location(s) for this plan: (i.e. computer and BBP binder on the lab's administrative bookshelf)

APPENDIX G

BLOODBORNE PATHOGENS TASK PROCEDURE

This form is to list engineering controls, work practices, and PPE to reduce your risk of **Bloodborne Pathogens Exposure**. The information provided here should adequately reflect what the affected employees need to know and practice in order to protect themselves on the job.

Date	
Principal Investigator/Supervisor	
Address	
Phone Number	

Job Task

Name the task that involves bloodborne pathogens risk:

Task Description (Methods)

Describe the way the task is performed, similar to how you would write step-by-step instructions:

Hazards

List hazards including biological hazards:

Engineering Controls

List items used to limit your risk of exposure, like physical or mechanical items:

Personal Protective Equipment

List items worn by the person performing the task/procedure:

Work Practices

Describe ways to perform the task that limit the risk:

SAMPLE

BLOODBORNE PATHOGENS TASK PROCEDURE

Blood Spill Clean-up

This form is to list engineering controls, work practices, and PPE to reduce your risk of **Bloodborne Pathogens Exposure**. The information provided here should adequately reflect what the affected employees need to know and practice in order to protect themselves on the job.

Date	9/1/17
Principal Investigator/Supervisor	Dr. Smith
Address	100 MSU Way
Phone Number	555-1212

Job Task

Name the task that involves bloodborne pathogens risk:

Blood spill clean-up without sharps for small spills.

Task Description (Methods)

Describe the way the task is performed, similar to how you would write step-by-step instructions:

Close off area to traffic. Notify supervisor and others of spill. A BBP trained responder must clean-up the spill. Refer to spill procedure that is attached to spill kit. Put on appropriate PPE (personal protective equipment). Prepare disinfectant (1:10 bleach to water solution). Line the spill bucket with the biohazard bag. Cover the spill with absorbent powder. Remove absorbent with disposable broom and dustpan. Dispose of contaminated absorbent/dustpan/broom in biohazard bag. Spray the area with disinfectant and allow proper contact time prior to removing with paper towel. (bleach: 10 minutes) Dispose of contaminated towel in biohazard bag. Repeat disinfection process. Remove outer pair of gloves and dispose in biohazard bag. Remove splash goggles. (Disinfect with antimicrobial wipe or dispose of into biohazard bag) Wipe down contaminated surfaces with an antimicrobial wipe. Remove inner pair of gloves and dispose of into biohazard bag. Close the bag and dispose of biohazardous waste by submitting a biohazard waste pick up request from EHS. Wash hands with soap and water. Replenish the spill kit with supplies and return the kit to designated location. Inform others that spill clean-up is complete and area has been disinfected.

Hazards

List hazards including biological hazards:

Bloodborne Pathogens - blood, Caustic chemical - disinfectant

Engineering Controls

List items used to limit your risk of exposure, like physical or mechanical item:

Disposable dustpan and broom, biohazard bag, and spill kit.

Personal Protective Equipment

List items worn by the person performing the task/procedure:

Two pairs of nitrile gloves, splash goggles, lab coat

Work Practices

Describe ways to perform the task that limit the risk: close off area, ensure correct PPE is worn. Use engineering controls to pick up the absorbed spill. If the spill is too large to clean-up with this kit, contact EHS. Wash hands with soap and water immediately after completion of spill clean-up.

APPENDIX H

Bloodborne Pathogens

Train-the-Trainer Program Summary

What is the goal of the program?

The goal of the Train-the-Trainer program is to establish a minimum standard in bloodborne pathogens (BBP) training curriculums among MSU departments that perform their own BBP training. This will be accomplished by providing additional training and resource materials for individuals who are designated as qualified trainers in such departments.

Trainers will attend an annual Train-the-Trainer course provided by EHS to enhance their knowledge of bloodborne pathogens, the MSU Exposure Control Plan and MIOSHA's regulatory requirements.

Trainers will also receive training materials to use in their presentations that cover the minimum required elements for initial BBP training. Upon request, the EHS biological safety staff will work with trainers to develop department-specific training.

What will the Train-the-Trainer course cover?

The Train-the-Trainer course will include a review of all topics covered in the EHS Bloodborne Pathogens initial training course. Specifically, the following topics will be addressed:

- Regulatory requirements of MIOSHA's "Bloodborne Infectious Diseases" standard
- MSU's Exposure Control Plan (ECP)
- Principles of exposure control
- Personal protective equipment selection
- Biohazardous waste handling
- Exposure incident response
- Recordkeeping

How will the program be maintained?

Trainers who have attended the train-the-trainer course will receive updated information from EHS regarding the Exposure Control Plan and regulatory requirements on an ongoing basis to include in the training.

Trainers will be required to attend an annual update meeting in order to maintain their status as departmental BBP trainers. This annual meeting is essential to assure that all trainers receive information regarding any program changes and to exchange ideas for increasing the effectiveness of BBP programs at MSU.

For further information contact EHS at 355-0153.

APPENDIX I

MSU Environmental Health and Safety Safer Sharps Device Evaluation Form

Department/Clinic: _____ Date: _____

Name of Device: _____

Name of Manufacturer: _____

Evaluator's Name: _____ **Job Title:** _____

Number of times used to evaluate: _____

Keep this form with your departmental records.

Please circle the most appropriate answer for each question. A rating of one (1) indicates the highest level of agreement with the statement, five (5) the lowest. Not applicable (N/A) may be used if the question does not apply to this product.

Please explain all problems with the device in the comments section.	Agree....Disagree
1. The safety feature can be activated using a one-handed technique.	1 2 3 4 5 N/A
2. The user's hands remain behind the needle/sharp until activation of the safety mechanism is complete.	1 2 3 4 5 N/A
3. The safety feature does not interfere with normal use of this product.	1 2 3 4 5 N/A
4. Use of this product requires you to use the safety feature.	1 2 3 4 5 N/A
5. A clear and unmistakable change (either audible or visible) occurs when the safety feature is activated.	1 2 3 4 5 N/A
6. The device is easy to handle while wearing gloves.	1 2 3 4 5 N/A
7. The device is easy to handle when wet.	1 2 3 4 5 N/A
8. This device does not require more time to use than a non-safety device.	1 2 3 4 5 N/A
9. The safety feature operates reliably.	1 2 3 4 5 N/A
10. The exposed sharp is blunted or covered after use and prior to disposal.	1 2 3 4 5 N/A
11. The safety feature works well with a wide variety of hand sizes and with a left-handed person as easily as with a right-handed person.	1 2 3 4 5 N/A

Continued on back page.

APPENDIX I

MSU Environmental Health and Safety

Safer Sharps Device Evaluation Form

Continued from Page 1:

Agree....Disagree

- | | | |
|--|-----------|-----|
| 12. Use of this product does not increase the number of sticks to the patient. | 1 2 3 4 5 | N/A |
| 13. Sterilization (if applicable) of this device is as easy as a standard device. | 1 2 3 4 5 | N/A |
| 14. The product stops the flow of blood after the needle is removed from the catheter (or after the butterfly is inserted) and just prior to line connections or hep-lock capping. | 1 2 3 4 5 | N/A |
| 15. The product does not require extensive training to be operated correctly. | 1 2 3 4 5 | N/A |
| 16. The device can be used without causing more patient discomfort than a conventional device. | 1 2 3 4 5 | N/A |

Additional questions for I.V. Connectors:

Agree....Disagree

- | | | |
|---|-----------|-----|
| 17. Use of this connector eliminates the need for exposed needles in connections. | 1 2 3 4 5 | N/A |
| 18. The safety feature allows you to collect blood directly into a vacuum tube, eliminating the need for needles. | 1 2 3 4 5 | N/A |
| 19. The connector can be secured (locked) to Y-sites, hep-locks, and central lines. | 1 2 3 4 5 | N/A |

Additional questions for Vacuum Tube Blood Collection Systems:

Agree....Disagree

- | | | |
|---|-----------|-----|
| 20. The safety feature works with a butterfly. | 1 2 3 4 5 | N/A |
| 21. The inner vacuum tube needle (rubber sleeved needle) does not present a danger of exposure. | 1 2 3 4 5 | N/A |

Please rate the quality of the in-service training: Exc. Good Fair Poor

Would you recommend using this device?

Yes

☐

No

☐

Comments: _____

APPENDIX J
MSU Environmental Health & Safety (EHS)
Safer Sharps Devices Annual Review Form

Department: _____

Clinic (if applicable): _____

Address: _____

Date: _____

Supervisor or PI: _____

Telephone #: _____

All sharps that are being used where there is exposure to human blood or OPIM must be reviewed on an annual basis. During your annual review of devices, you must inquire about new or prospective safer options.

The purpose of this form is to document:

1. Annual consideration of new safer sharps devices;
2. To determine which sharps devices are currently in use;
3. To document the criteria used in the selection of the safer sharps device in use.

Please complete the table on page 2 of this form by filling out the appropriate information for all sharp devices in your department/clinic/lab, both safety and non-safety. (i.e. scalpels, syringes with needles, IV's with needles attached, capillary tubes, lancets)

Keep this form with your departmental records

APPENDIX J
MSU Environmental Health & Safety (EHS)
 Safer Sharps Devices Annual Review Form

SHARPS CURRENTLY IN USE

Name of Sharp	Manufacturer	Size(s) in Use	Safety Sharp?	If Yes:	If No:
			Yes or No	Evaluation forms on file?	State the reason

In accordance with the MIOSHA Bloodborne Infectious Diseases Standard, I certify that I have reviewed the new commercially available safer sharps and considered evaluation and use. I will evaluate new devices per MSU's Bloodborne Pathogens Exposure Control Plan and keep all evaluation forms with department records.

 Supervisor Signature/Date



APPENDIX K
SHARPS INJURY LOG

Employee Bloodborne Pathogens Exposure Involving A Sharp

Name of Claimant: _____

Net ID: _____

Name of Supervisor: _____

Telephone: _____

Date of Birth: _____

Male ☐ Female ☐

Department: _____

Building and area of injury: _____

Date of Injury: _____

Time of Injury: _____ a.m ☐ p.m ☐

Fill in the one circle corresponding to the most appropriate answer.

Description of the exposure incident: _____ _____ _____ _____ _____ _____		Job classification: <input type="radio"/> MD <input type="radio"/> Nurse <input type="radio"/> Medical assistant <input type="radio"/> Phlebotomist/Medical Lab Tech <input type="radio"/> Housekeeper/Laundry <input type="radio"/> Research Lab Tech <input type="radio"/> Student, type _____ <input type="radio"/> Other _____		Department/Location: <input type="radio"/> Patient Room <input type="radio"/> Procedure room <input type="radio"/> Clinical laboratory <input type="radio"/> Research laboratory <input type="radio"/> Medical/outpatient clinic <input type="radio"/> Service/utility area <input type="radio"/> Other _____	
Procedure: <input type="radio"/> Draw venous blood <input type="radio"/> Heparin/saline flush <input type="radio"/> Draw arterial blood <input type="radio"/> Cutting <input type="radio"/> Injection, through skin <input type="radio"/> Suturing <input type="radio"/> Start IV/set up heparin lock <input type="radio"/> Unknown/not applicable <input type="radio"/> Other _____			Did the exposure incident occur: <input type="radio"/> During use of sharp <input type="radio"/> Disassembling <input type="radio"/> Between steps of a multistep procedure <input type="radio"/> After use and before disposal of sharp <input type="radio"/> While putting sharp into disposal container <input type="radio"/> Sharp left in an inappropriate place (table, bed, etc.) <input type="radio"/> Other _____		
Body Part: (check all that apply) <input type="radio"/> Finger <input type="radio"/> Face/head <input type="radio"/> Hand <input type="radio"/> Torso <input type="radio"/> Arm <input type="radio"/> Leg <input type="radio"/> Other _____		Identify sharp involved: (if known) Type: _____ Brand: _____ Model: _____ e.g. 18g needle/ABC Medical/"no stick" syringe		Did the device being used have engineered sharps injury protection? <input type="radio"/> yes <input type="radio"/> no <input type="radio"/> don't know Was the protective mechanism activated? <input type="radio"/> yes-fully <input type="radio"/> yes-partially <input type="radio"/> no Did the exposure incident occur: <input type="radio"/> before <input type="radio"/> during <input type="radio"/> after activation	
Exposed employee: If sharp had no engineered sharps injury protection, do you have an opinion that such a mechanism could have prevented the injury? <input type="radio"/> YES <input type="radio"/> NO <input type="radio"/> N/A Explain: _____				Exposed employee: Do you have an opinion that any other engineering, administrative or work practice control could have prevented the injury? <input type="radio"/> YES <input type="radio"/> NO <input type="radio"/> N/A Explain: _____	

This form will be completed by the Environmental Health & Safety (EHS) Office through interviews and maintained in the Human Resources department.

APPENDIX L: Bloodborne Pathogens Source Protocol Preparation Packet

Bloodborne Pathogens Source Protocol Preparation Guide

A source protocol is required when you have an *identifiable source for an employee bloodborne pathogen exposure.

**If you cannot identify the source, the source is deceased, your protocol has masked their identity due to HIPAA regulations, or HIPAA does not allow you to contact the source, then you do not need a protocol.*

A source is the person whose blood, body fluid, or tissue is the source of an occupational exposure. The source should be evaluated for HBV, HCV, and HIV infection as soon as possible, by informing the source of the incident and requesting them to be tested for evidence of bloodborne virus infection.

Know where your protocol is, how to access it quickly, and keep it updated. The source is not required to consent to the testing. The goal is to make the process as easy as possible for the source if consent is given.

Your protocol should contain this information (a sample protocol is included in this guide):

1. Who will talk to/contact the source?
 - a. This must not be the exposed person.
 - b. Examples include: supervisor, lab/clinic manager, physician, principal investigator, chairperson, department administrative staff, graduate student in laboratory, etc.
2. What will the person say to the source?
 - a. Let them know that an MSU employee was exposed and how (i.e. working with their sample, needlestick, etc.)
 - b. Ask that they consider going to have blood drawn to be tested for HIV, HBV, and HCV.
 - c. Let them know that Michigan State University will pay for the testing.
 - d. If source is not present, ask for fax# or email to send the lab form. (This can also be sent directly to the lab) If present, give them the "Source Patient Lab Worksheet"
 - e. Remember the source does not have to consent to being tested.
3. What paperwork is needed?
 - a. A "Source Patient Lab Worksheet" should be given/sent to the source.
 - b. Complete the top box with the BBP exposure date, exposed employee's department, and the exposed employee's supervisor/PI. This must be done before giving/sending the form to the source.
4. Where can the source go for testing?
 - a. They can go to the closest lab (as stated in your source protocol)
 - b. They can also go to any Lansing Urgent Care, or any lab that is convenient to the source.

Possible scenario on handling the source after an employee bloodborne pathogens exposure:

Jerry in Dr. Smith's lab accidentally poked himself with a needle. The needle had been used to obtain a blood sample from an identified patient that the lab is allowed to contact. Jerry tells his supervisor, Dr. Smith who retrieves the source protocol and instructs Jerry to wash the area on the skin for 15 minutes, then to fill out an Authorization to Invoice MSU form and take it with him to Lansing Urgent Care (LUC). Dr. Smith contacts the source to ask for consent to have his/her blood tested. Consent is given. Dr. Smith sends the source the "Source Patient Lab Worksheet" with the top box completed with the BBP exposure date, exposed employee's department, and the exposed employee's supervisor.

APPENDIX L: Bloodborne Pathogens Source Protocol Preparation Packet

SOURCE PROTOCOL FOR BLOODBORNE PATHOGEN EXPOSURES (EXAMPLE)

Department/Clinic: _____

PI/Supervisor: _____

It is in the interest of the exposed employee to determine if the blood/other potentially infectious material from the source of a bloodborne pathogens exposure is infected with HBV, HCV, and/or HIV.

- Every reasonable effort should be made to identify and obtain permission to test the source for above-mentioned viruses.
- Obtaining consent from the source is mandatory and is an integral part of all post exposure testing procedures, as is maintaining confidentiality of all information. It is easiest to obtain consent from the source prior to leaving the facility.
 - ☐ Check here if the source has a signed consent allowing their sample to be tested in this event or if the sample is de-identified. (in this case, the sample should be taken with the exposed employee to the healthcare facility to be tested)
- It is the responsibility of _____ to contact, obtain consent, and order blood testing for the source patient. This person should not be the exposed employee. (Patient/source is not required by law to consent to testing)
- If the source is not at/has left the facility, it remains the responsibility of _____ to contact the source by telephone immediately to inform him/her of the bloodborne pathogens exposure and to obtain consent for testing.
- If consent is obtained to have blood tested, complete the top portion of the “Source Patient Lab Worksheet” with the following information:
 - a. BBP Exposure date*
 - b. Exposed employee’s department*
 - c. Exposed employee’s supervisor*
- Give (hand, fax, email) the “Source Patient Lab Worksheet” form to the source and send him/her to the following lab: _____ (this can be Lansing Urgent Care or any lab that is convenient to the source)
- As soon as infectivity information is determined this information will be provided to the treating physician and the exposed employee.

APPENDIX L: Bloodborne Pathogens Source Protocol Preparation Packet

BBP Exposure date: _____

Exposed employee's dept: _____

Exposed employee's supervisor/PI: _____

Bloodborne Pathogens Source Patient Lab Worksheet

Last Name _____ First Name _____ MI _____

DOB _____ O Male O Female

Address _____ Telephone # _____

City/State/Zip _____

Test Request:

- ☐ 1951 Hepatitis B Surface Antigen
- ☐ 1400 Hepatitis C Ab
- ☐ 1414 HIV AB

Diagnosis:

Z02.9
Z02.9
Z02.9

Ordering Provider: Terry Matthew, D.O., Medical Director

Copy to: Lansing Urgent Care
2289 Grand River
Okemos, MI 48864
Tel: (517) 999-2273
Fax: (517) 333-9201

Bill to: Michigan State University
Human Resources/ Workman Compensation
Nisbet Building Suite 110
1407 S Harrison Rd
E. Lansing, MI 48823

Date Collected: _____ Time: _____

Appendix M

Transporting Biological Materials (Local in vehicle)

All biological materials must be appropriately packaged, labeled and transported in order to minimize the potential for environmental release.

Biological materials include:

- **Infectious substances-** viable microorganisms, including a bacterium, virus, rickettsia, fungus, or recombinant, hybrid or mutant, that are known or reasonably believed to cause disease in humans or animals (*these are not DOT excepted and cannot be transported by personal vehicle and University must be used*).
- **Diagnostic specimens-** any human or animal material including but not limited to, excreta, secretions, blood and its components, tissue and tissue fluids (*these are excepted from the DOT, Title 49, CFR 171.1:D5. Hazardous Materials regulations and can be transported in a personal vehicle or University vehicle*).

Other examples of biological materials that are excepted and can be transported in a personal vehicle:

- Non-infectious microbiological cultures, human and animal cell lines, DNA and recombinant DNA samples, human and animal blood and serum samples (not known to contain an infectious agent)

Procedure for Preparing and Transporting Biological Materials

1. Use primary containers designed to contain the material to be stored. Do not use food containers or other containers not originally designed for laboratory storage purposes.
2. Place primary sample containers into an appropriate secondary container for transport. If sample material is liquid or may release liquids, use a leak-proof secondary container with a secure lid (i.e. cooler with a latchable lid). Additionally, place enough absorbent material (i.e. paper towels) in the secondary container to absorb all free liquids in the event that primary containers rupture or break during transport.
3. Package primary containers in the secondary container in a manner that will reduce shock, rupture and/or breakage. For example, tubes of blood can be placed in a tube rack to assure that tubes do not bump one another and possibly break. Bubble wrap or similar shock-absorbing materials may also be used to minimize the potential for primary container rupture.
4. Label all secondary containers with a brief description of the contents (if human derived materials, include a small biohazard sticker as a precaution) and an emergency contact name and phone number.
5. If possible, use a University-owned vehicle for transport (see #7). Store and secure the transport container in a location in the vehicle whereby if an accident were to occur, the container or its contents will not be an exposure risk to the driver or the environment. For example, if transporting materials by car or van, store the container in the back seat or cargo bay. Secure the container with bungee cords or belts to keep the container upright and stable.
6. If properly packaged and secured, a spill should NOT occur during transport. However, in the event of a spill:
 - If the spill occurs outside of a building (i.e. sidewalk), isolate the area if possible, and contact the EHS for assistance with cleanup. Stay at the spill site until the EHS arrives.
 - If the spill occurs in a vehicle, leave the vehicle with closed windows and locked doors. Contact EHS to determine whether the spill can be self-cleaned or if a professional cleaning company will be required.
7. For non-infectious (or not known to be infectious) materials, it is acceptable to use a personal vehicle as MSU is excepted for diagnostic specimens and other biological materials. Warning: personal insurance carriers should be contacted prior to the use to determine if coverage would exist. It is not well defined if spills will be covered by MSU or personal insurance. Please contact both your department and personal insurance to discuss coverage accidents, spills, etc.

For specific guidance please contact Dr. Jamie Sue Willard, EHS, (517) 353-1877 or cherryme@ehs.msu.edu.

APPENDIX N

HIV and HBV Research Laboratories

HIV and HBV research laboratories present increased risk for occupational exposure to bloodborne pathogens.

A research laboratory produces or uses research laboratory-scale amounts of HIV or HBV. A research laboratory may produce high concentrations of HIV or HBV, but not in the volume found in a production facility.

These laboratories engaged in the culture, production, concentration, experimentation, and manipulation of HIV or HBV will reduce employee risk by providing additional administrative controls, protective equipment, information and training beyond that required for research laboratories not involved in such work. These requirements are in addition to the other requirements as outline in this Exposure Control Plan.

Security:

1. Keep laboratory doors closed when work involving HIV or HBV is in progress.
2. A hazard warning sign incorporating the universal biohazard symbol shall be posted on all access doors when potentially infectious material or infected animals are present in the work area or containment module.
3. Access to work area shall be limited to authorized persons only.
4. Establish written procedures whereby only persons who have been advised of the biohazard, who meet any specific entry requirements, and who comply with all entry and exit procedures shall be allowed to enter the work area and animal rooms.

Sharps:

1. Hypodermic needles, syringes, and other sharp instruments shall be used only when a safer alternate technique is not feasible.
2. Safety needles/syringes shall be used for the injection or aspiration of other potentially infectious material. (See section on Sharps Injury Protection Program)
3. Use extreme caution when handling needles and syringes to avoid autoinoculation and the generation of aerosols during use and disposal.
4. Do not bend, shear, or replace needles in the sheath or guard, or remove from the syringe after being used.
5. Promptly place the needle and syringe in a puncture-resistant container, and decontaminate, preferably by autoclaving, before being discarded or reused.

Work Practice Controls:

1. Certified biological safety cabinets or other appropriate combinations of personal protective equipment or physical containment devices, such as any of the following, shall be used for all activities with other potentially infectious material that poses a threat of exposure to droplets, splashes, spills, or aerosols:
 - a. Special protective clothing
 - b. Respirators
 - c. Centrifuge safety cups
 - d. Sealed centrifuge rotors
 - e. Containment caging for animals
2. Report all spills or accidents resulting in an exposure incident immediately to the principle investigator or other responsible person and to the Environmental Health and Safety (EHS) office at 517-355-0153.
3. Spills must be contained and cleaned up immediately by employees that are trained and equipped to work with potentially concentrated infectious material.

Engineering controls:

1. Use biosafety cabinets or other physical containment devices within the containment module to conduct all activities that involve other potentially infectious material. Do not conduct this work on the open bench.
Note: Biological safety cabinets shall be certified when installed, at least annually, and when they are relocated.
2. Each laboratory shall contain a sink for washing hands and an eye wash station that are readily available in the work area. The eyewash must supply a sufficient quantity of water to completely flush the eyes. A 15-minute supply of continuous free-flowing water is acceptable. The hands must be free to hold the eyelids open to aid in the complete flushing of the eyes.
3. HEPA (high-efficiency particulate air) filters, or equivalent filters, and disinfectant traps must be used to protect vacuum lines. Check filters and traps routinely, and maintain or replace as necessary.
4. When transporting contaminated material, use containers that are durable, leakproof, labeled or color-coded, and closed before leaving the work area.
5. An autoclave for the decontamination of regulated wastes shall be available. All infectious liquid, solid waste, and all waste from work areas including animal rooms, shall be decontaminated before disposal by autoclaving or incineration.

Personal Protective Equipment:

1. Laboratory coats, gowns, smocks, uniforms, or other appropriate protective clothing shall be used in the work area and animal rooms.
2. Do not wear protective clothing outside of work area.
3. Protective clothing must be decontaminated before laundering.
4. Gloves shall be worn when handling infected animals and when making contact with other potentially infectious materials is unavoidable.

Administrative:

1. Personnel must be advised of potential hazards and are required to read and follow instructions on practices and procedures. This will be documented with a bloodborne pathogens site-specific checklist.
2. Personnel must read the MSU Biosafety Manual. This will be documented on the bloodborne pathogens site-specific checklist.