

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

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EXPOSURE CONTROL PLAN

Accepted for the Biosafety Office:

MIT Biosafety Office

Date: _____

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1. STATEMENT OF PURPOSE

This exposure control plan is designed to minimize or eliminate employee exposure to bloodborne pathogens. This plan was developed in accordance with the OSHA "Occupational Exposure to Bloodborne Pathogens; Final Rule" contained in 29 CFR Part 1910.1030.

2. EXPOSURE DETERMINATION

The exposure determination must be based on the definition of occupational exposure* without regard to personal protective clothing and equipment or engineering controls.

The exposure determination is made by reviewing job classifications within the work environment. Specific work tasks and procedures that may lead to occupational exposure must be listed. An example would be a laboratory technician that processes blood samples or other potentially infectious materials.

JOB CLASSIFICATIONS

SPECIFIC TASKS & PROCEDURES

Research Associate
Research Specialist
Post Doctorate
Graduate Students
UROPs

For Specific Tasks and Procedures

A. Additional human bone and bone tissue procedure:

1. Cutting

Graduate students are cutting slices of human bone in preparation for High Resolution Force Spectroscopy. A lab coat, gloves, and goggles are worn during cutting. A sign is also posted near the experiment warning others of the human derived tissue. A basin collects any tissue fluid resulting from the cutting. The tissue fluid is decontaminated by addition of bleach (final concentration 10% bleach), covering the container, and allowing it to soak for 20 minutes before it is disposed down the sink. The tissue is put in a petri dish. The area around the drill is decontaminated with Lysol and alcohol or bleach. The disposables are put in a small autoclavable biohazard bag.

2. Tissue Culture, Biochemical Assays, and Histology

The tissue is prepared for assays and histology in room 12-065 in the biosafety cabinet. Bleach and Lysol are available under the sink. Biohazard labels are used; tools are decontaminated using the specific procedures outlined in "cutting." Plastic ware is soaked in 10% bleach for 20 minutes and/or autoclaved. The instruments are soaked, covered in Ammerse 1X solution for several days and then autoclaved. The biosafety cabinet and counters are washed with 10% bleach and 5% Lysol solution. Excess tissue is frozen and autoclaved in separate biohazard bags. Histology samples are placed in labeled vials and reagents are added in the biosafety cabinet. The histology final steps involve soaking the tissue in 2% gluteraldehyde and 70% ethanol and should destroy any pathogens.

B. Human Derived Bone Cells and Proteins

Graduate students are working with human bone cells (osteoblasts and osteoclasts) and proteins (e.g. osteonectin and glycosaminoglycans), culturing and examining the structure, interaction, and mechanical properties of the bone surface. The specific tasks and procedures are outlined for “Tissue Culture, biochemical Assay, and Histology”. The biosafety hood in room 12-065 is used to manipulate the cells. Culturing is done in room 12-065 and testing is done in room 13-5037. **A BL2 sign is placed on the door of 13-5037 while cells or tissue is present and removed once the tissue has been taken out and all instruments and potentially contaminated surface areas have been properly cleaned and decontaminated.**

* Occupational Exposure: Reasonably anticipated skin, eye, mucous membrane, or parenteral contact (i.e. needlestick) with blood or other potentially infectious materials that may result from the performance of an employee's duties.

3. DEFINITIONS

- a. Blood: Human blood, blood components, and products derived from blood.
- b. Bloodborne Pathogens: Pathogenic microorganisms that are present in human blood and can cause disease in humans. These pathogens include, but are not limited to, hepatitis B virus (HBV) and human immunodeficiency virus (HIV). Appendix A lists additional bloodborne pathogens.
- c. Exposure Incident: A specific eye, mouth, other mucous membrane, non-intact skin, or parenteral contact with blood or other potentially infectious materials that results from the performance of an employee's duties.
- d. Occupational Exposure: Reasonably anticipated skin, eye, mucous membrane, or parenteral contact with blood or other potentially infectious materials that may result from the performance of an employee's duties.
- e. Other Potentially Infectious Materials:
 - 1. The following body fluids/secretions: semen, vaginal, cerebrospinal, synovial, pleural, pericardial, peritoneal, and amniotic; saliva in dental procedures, 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 medium or other solutions; and blood, organs, or other tissues from experimental animals infected with HIV or HBV.
- f. Source Individual: Any individual, living or dead, whose blood or other potentially infectious materials may be a source of occupational exposure to the employee.
- g. Universal Precautions: An approach to infection control. All human blood and certain human body fluids are treated as if known to be infectious for HIV, HBV and other bloodborne pathogens.
- h. Sharps with Engineered Sharps Injury Protections: A non-needle sharp or a needle device used for withdrawing body fluids, accessing a vein or artery, or administering medications or other fluids, with a built in safety feature or mechanism that effectively reduces the risk of exposure incident.
- i. 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.

4. RESPONSIBILITIES

Supervisors are to ensure that the provisions of this plan are followed by all employees with occupational exposure. This includes providing a copy of this exposure control plan to employees, enforcing compliance with this plan, ensuring new employees are properly trained, ensuring all employees attend an annual training session, and performing follow-up procedures for all exposure incidents.

Employees are to perform tasks and procedures in a manner that minimizes or eliminates employee exposure and perform duties as established in this exposure control plan and as trained.

The MIT Biosafety Office (BSO) in 56-255 provides the OSHA-mandated bloodborne pathogen information and training sessions at least annually to each MIT supervisor and employee with occupational exposure.

5. METHODS OF COMPLIANCE

A. GENERAL

Universal Precautions are observed to prevent contact with blood or other potentially infectious materials. Under circumstances in which differentiation between body fluid types is difficult or impossible, all body fluids are considered potentially infectious materials.

B. ENGINEERING AND WORK PRACTICE CONTROLS

Engineering and work practice controls are to be used to eliminate or minimize employee exposure for each task within the work area. Where occupational exposure remains after institution of these controls, personal protective equipment is used. Engineering controls are used where there is a reasonable likelihood of occupational exposure.

Biosafety cabinets are used in room 12-065 (the BL2 room) while doing the cell culture work. All of the tissue culture work uses plastic containers. No glass or needles are used.

Sharps containers, biohazard sharp containers, and biohazard waste containers are located in room 12-065.

Immediately after working with the human derived material, hands are washed in the sinks in room 12-065.

The biosafety cabinet and the table adjacent to the cabinet are washed with 1% Lysol solution then 70% ethanol by each individual each time after the culture work is completed.

The non-disposable equipment (beakers, forceps, gel casts, etc.) after use is isolated in a designated basin labeled "Caution: Human Derived Materials" to be soaked for 20 minutes in 10% bleach. The bleach and utility gloves are under the sink in room 12-065 and the goggles are hanging by the sink.

Engineering controls are examined and maintained or replaced on a regular schedule by the supervisor and employee to ensure their effectiveness.

Each individual working with these potential pathogens is responsible for the effectiveness of the exposure control plan. Christine Ortiz and the Lab Safety Officer are responsible for the effectiveness of these controls.

Biohazard wastes are removed when the boxes are filled and replaced by new containers and bags (located in tool equipment cabinet in room 12-065) by the person who filled them. Notify the next person on the list that it is his/her turn to autoclave the biohazard waste. Autoclaving of biohazardous waste is done in the Grodzinsky Lab. The specifics for autoclaving the trash is posted on the door next to the autoclave.

Biohazard sharps container should be closed and sealed by white plastic tie (supplied by

Biosystems). When it's full, the Biosystems will come to our lab to pick it up every other Friday morning and replace with a new sharps waste container.

The following requirements are the minimum requirements that must be followed:

1. Hands are washed immediately or as soon as feasible after removal of gloves or other personal protective equipment.

Sinks are located in room 12-065.

2. Following contact with blood or other potentially infectious materials, hands and any other skin will be washed with soap and water. Mucous membranes are flushed with water.
3. When hand washing facilities are not available, the supervisor will provide antiseptic hand cleanser and paper towels or antiseptic towelettes. Hands are washed with soap and water as soon as feasible.

Paper towels and antiseptic hand cleanser are stored under sinks in room 12-065. The Lab Safety Officer is responsible for maintaining enough supply and accessibility.

4. Contaminated needles and other contaminated sharps are not to be bent, sheared or broken.
5. Recapping needles by hand is prohibited. Recapping and needle removal must be accomplished using a mechanical device or a one-handed technique.

Do not recap needle after use. Place directly into the biohazard sharps waste container.

6. Immediately or as soon as possible after use, contaminated sharps must be placed in puncture resistant, labeled leakproof containers.

Sharps containers are located in rooms 12-065. Biosystems will pick up the biohazard sharps waste containers every other Friday.

7. Eating (chewing gum, use of throat lozenges) drinking, smoking, applying facial cosmetics (including lip balm) and handling contact lenses are prohibited in all work areas.
8. Food and drink are prohibited from lab or work areas, (i.e., refrigerators, freezers, shelves and cabinets, on counter tops or bench tops where blood or other potentially infectious materials are present.
9. All procedures involving blood or other potentially infectious materials are performed in a manner that minimizes splashing, spraying, spattering, and generation of droplets of these substances.

Lab coats and gloves are required when working with human derived materials. Goggles are required whenever splashing or spills are possible. Centrifuge covers should be locked when it is in use for human derived materials.

10. Mouth pipetting/suctioning is prohibited.
11. Specimens of blood or other potentially infectious materials are placed in a container that prevents leakage during collection, handling, processing, storage, transport or shipping. The container is closed prior to storing, transporting or shipping. Specimens are labeled when leaving the facility (See Appendix D). ***The standard provides for an exemption to this requirement, provided that the facility utilizes universal precautions in the handling of***

all specimens and the containers are recognizable as containing specimens. The exemption applies only when specimens remain in the facility. If an exemption is claimed, it must be stated here.

12. If outside contamination of the primary container occurs, the primary container is placed within a secondary container that prevents leakage during handling, processing, storage, transport or shipping. If a specimen could puncture the primary container, the primary container is then placed within a secondary puncture-resistant container.

Secondary container (Personal PolyLite cooler from Coleman) is required when transport human derived specimen to another lab or institution. This container is to used under room temperature or subzero temperature and it can be found on the shelf in room 12-065.

13. Equipment which may become contaminated with blood or other potentially infectious materials are examined by the employee prior to servicing or shipping and will be decontaminated as necessary, unless demonstrated that decontamination of the equipment or portions of such equipment is not feasible. A readily observable label with the Universal Biohazard symbol is attached to the equipment stating which portions remain contaminated. This information is conveyed to all affected employees, the servicing representative, and/or the manufacturer, as appropriate, prior to handling, servicing, or shipping so that appropriate precautions are taken.
None.

C. PERSONAL PROTECTIVE EQUIPMENT

Personal protective equipment is provided by the supervisor, at no cost to the employee, when there is a chance of occupational exposure. Appropriate personal protective equipment may consist of, but is not limited to, gloves, gowns, lab coats, face shields, masks, eye protection, and mouthpieces, resuscitation bags, pocket masks, or other ventilation devices. All personal protective equipment is to be readily accessible and in the appropriate sizes. It is the employee's responsibility, when there is occupational exposure, to use the appropriate personal protective equipment.

Lab coats and gloves are required when working with human derived materials. Gloves are available in all the rooms and should be restocked from the supply on the gray stock shelf in room 12-065. Disposable lab coats are also available in all the rooms. Goggles are required whenever splashing or spills are possible. The Lab Safety Officer is responsible for distribution.

1. Personal protective garments that are contaminated are to be removed immediately, or as soon as feasible, and prior to leaving the work area. When removed, garments are to be bagged and placed in the appropriately designated containers for decontamination (autoclaving) and disposal.

Before leaving the lab area, the lab coat and gloves should properly disposed of into the biohazard bag. Goggles are hung beside the sink in room 12-065.

2. Gloves are worn when it can be reasonably anticipated that the employee may have hand contact with blood, other potentially infectious materials, mucous membranes, and non-intact skin; when performing vascular access procedures and when handling or touching contaminated items or surfaces.

Gloves are required when working with human derived material. Gloves are available in all the rooms and should be restocked from the gray supply shelf. Each individual

working with these materials is responsible for getting gloves.

3. Disposable gloves are to be replaced as soon as practical when contaminated or as soon as feasible if they are torn, punctured, or when their ability to function as a barrier is compromised.
4. Disposable gloves are not washed or decontaminated for re-use. Utility gloves (i.e., rubber household gloves) for housekeeping chores involving potential blood contact and for instrument cleaning and decontamination procedures can be used. Utility gloves may be decontaminated and reused, but should be discarded if they are peeling, cracked, or discolored, or if they have puncture, tears or other evidence of deterioration or their ability to function as a barrier is compromised.
5. Masks in combination with eye protection devices, such as goggles or glasses with solid side shields, or chin-length face shields, are worn whenever splashes, spray, spatter or droplets of blood or other potentially infectious materials may be generated and eye, nose or mouth contamination can be reasonably anticipated.
6. Appropriate protective clothing such as, but not limited to, gowns, aprons, lab coats, clinic jackets, or similar outer garments are worn in occupational exposure situations.

D. HOUSEKEEPING

The worksite is maintained in a clean and sanitary condition according to a written schedule for cleaning and method(s) of decontamination. The schedule is based upon the location within the facility, type of surface to be cleaned, type of soil present, and tasks or procedures being performed in the area. The written schedule is located in Appendix B.

1. All equipment and working surfaces are to be cleaned and decontaminated after contact with blood or other potentially infectious materials. Contaminated work surfaces are to be decontaminated with an appropriate disinfectant after completion of procedures, immediately or as soon as feasible when surfaces are overtly contaminated or after any spill of blood or other potentially infectious materials and at the end of the work day.
2. Protective coverings (plastic wrap, aluminum foil, bench paper, etc.) used to cover equipment and surfaces are to be removed and replaced as soon as feasible when they become contaminated. **N/A**
3. All reusable bins, pails, cans and similar receptacles which have a reasonable likelihood for becoming contaminated with blood or other potentially infectious materials are to be inspected and decontaminated on a regular basis and cleaned and decontaminated immediately or as soon as feasible upon visible contamination. **List frequency of inspection and decontamination and who performs this task.**

The non-disposable equipment (beakers, bins, forceps, etc.) that are used are isolated in a designated basin labeled "Caution: Human Derived Material" to be soaked for 20 minutes with 10% bleach then cleaned. All cleaning and decontaminating should be done by the person doing the experiment immediately after doing the experiment.

4. Broken glassware will not be picked up directly with the hands. Mechanical means, such as tongs, forceps, or a dustpan will be utilized.

Clean the tools and spills with 10% bleach solution. Clean the biosafety cabinet, hood table, and designate workbench area with Lysol and 70% ethanol. Broken glass should be picked up with tongs and the glass put into the biohazard sharps waste containers. Utility gloves and tongs are under the sink in 12-065. Disinfect the utility gloves and

tongs with 10% bleach after using.

5. Contaminated sharps are discarded immediately or as soon as feasible in closable, puncture-resistant, leakproof, labeled containers (**extras located at room 12-065**). These containers are accessible to personnel and located as close as is feasible to the immediate area where sharps are used. Containers will not be allowed to overfill. Containers are replaced when they are 2/3 full.
6. Regulated waste is to be placed in closable, leakproof, labeled containers that are closed prior to removal. If outside contamination of the container occurs, it is placed in a second container that is also closable, leakproof, labeled and closed prior to removal.

Biohazard waste containers are located in room 12-065.

7. When moving containers of contaminated sharps from the area of use, the containers will be closed prior to removal and placed in a secondary container if leakage is possible. The secondary container will be closable, labeled and constructed to contain all contents and prevent leakage during handling, storage, transport or shipping.
8. Disposal of all regulated waste is in accordance with the Massachusetts State Sanitary Code (105 CFR 480.000) and the MIT Infectious/Physically Dangerous Waste SOP's in Appendix C. **List procedures for disposal of potentially infectious materials.**

Biohazard waste should be autoclaved before disposing it in the regular trash. Biosystems will come to pick up biohazard sharps waste every other Friday.

Large amounts of waste with human bone and tissue should be in the plastic bag and labeled as "Human Tissue." Put it in the -20oC freezer then call Steven Young (x3-9493) for pick up for incineration.

9. Contaminated laundry (i.e., lab coats, bedding and linens) is to be bagged or placed in a leakproof, labeled, container at the location where it was used and will not be sorted or rinsed in the location of use.

Every Friday morning, the Delaney Linen comes to pick up the dirty lab coats for cleaning.

10. Contaminated laundry shipped off-site to another facility is placed in bags or containers labeled with the Universal Biohazard symbol.

E. HEPATITIS B VACCINATION & POST-EXPOSURE EVALUATION/FOLLOW-UP

MIT makes available the hepatitis B vaccine and vaccination series to all employees who have occupational exposure, and post-exposure evaluation and follow-up to all employees who have had an exposure incident.

All medical evaluations and procedures including the hepatitis B vaccine and vaccination series and post-exposure evaluation and follow-up, including prophylaxis, are made available at no cost to the employee.

HEPATITIS B VACCINATION

The Hepatitis B vaccine is made available, free of charge, to all employees with occupational exposure after his or her attendance at a bloodborne pathogen training session conducted by the BSO. The employee may decline because of previous hepatitis B vaccination, antibody testing has revealed that the employee is immune, the vaccine is contraindicated for medical reasons, or

the individual declines for personal reasons.

All employees will be required to sign a Hepatitis B Vaccine Acceptance/Declination Form (Appendix F). If an employee declines and later decides to accept the vaccination, MIT will make the hepatitis B vaccination available at that time (contact the BSO at x3-1740). Acceptance/Declination forms are on file at BSO and the Medical Department.

To receive the hepatitis B vaccine after attending a bloodborne pathogen training session, contact the Infection Control Coordinator at the MIT Medical Department, 3-8552.

POST-EXPOSURE EVALUATION AND FOLLOW-UP

MIT Medical Department will initiate a confidential medical evaluation and follow-up to an employee, following a report of an exposure incident. Employees with an exposure incident will report to the MIT Medical Department, Building E23, first floor, main desk.

For all exposure incidents, the route(s) of exposure and the circumstances under which the exposure incident occurred are documented. The source individual is identified and documented, unless identification is infeasible or prohibited by state or local law. After consent is obtained, the source individual's blood is tested for HBV and HIV status. If the exposed employee gives consent, a baseline blood sample is collected immediately following the incident with subsequent periodic samples taken later.

G. COMMUNICATION OF HAZARDS TO EMPLOYEES

INFORMATION AND TRAINING

Supervisors are to ensure that employees with occupational exposure participate in a training program, provided at no cost to the employee by BSO (56-255, 3-1740). Employees are to complete training at the time of initial assignment to tasks where occupational exposure may take place and at least annually thereafter.

Elements of the MIT Bloodborne Pathogen training program are listed in Appendix E.

Training aids utilized by BSO include videotapes, written materials and slides. Additional training requirements apply to employees in HIV and HBV laboratories and production facilities. The supervisor assures that employees demonstrate proficiency in standard microbiological practices and operations specific to the facility before being allowed to work with HIV or HBV, and have prior experience in the handling of human pathogens or tissue culture. The supervisor provides appropriate training and assures that employees participate in work activities involving infectious agents only after proficiency has been demonstrated.

In Appendix J, supervisors must document training provided for use of the safer needle devices.

LABELS AND SIGNS:

Labeling requirements for waste, equipment, specimens, and laundry are listed in Appendix D. Labels are available from BSO in 56-255 or call 3-1740.

H. RECORDKEEPING

TRAINING RECORDS

Training records are kept by BSO for at least 3 years from the date on which the training occurred.

All training sessions are documented in writing, with records kept by BSO. The training record includes:

1. dates of training sessions
2. contents of training sessions
3. names/qualifications of persons conducting training
4. names/job titles of all persons attending training sessions

MEDICAL RECORDS

Confidential medical records for employees with occupational exposure are kept by the MIT Medical Department for the duration of employment plus 30 years.

Medical records include:

1. employee's name and social security number
2. employee's hepatitis B vaccination status including vaccination dates and any medical records related to the employee's ability to receive vaccinations
3. results of examinations, medical testing, post-exposure evaluation and follow-up procedures
4. health care professional's written opinion
5. a copy of the information provided to the health care professional

APPENDICES

APPENDIX A

OTHER BLOODBORNE PATHOGENS

A. OTHER BLOODBORNE PATHOGENS

Other Bloodborne Pathogens may include, but are not limited to, the following:

- Syphilis
- Malaria
- Babesiosis
- Brucellosis
- Leptospirosis
- Arboviral Infections
- Relapsing Fever
- Creutzfeldt-Jakob Disease
- Human T-lymphotropic Virus Type I
- Viral Hemorrhagic Fever
- Hepatitis C virus
- Hepatitis D virus

APPENDIX B

SCHEDULE FOR CLEANING AND DECONTAMINATION

B. SCHEDULE FOR CLEANING AND DECONTAMINATION

Under the standard, each work area must be kept clean and sanitary. To do this, the supervisor must develop and implement a cleaning schedule that includes appropriate methods of decontamination and tasks or procedures to be performed. This written schedule must be based on the location within the facility, the type of surfaces to be cleaned, the type of contamination present, the tasks or procedures to be performed, and their location within the facility.

<u>Facility area, surface or equipment to clean and/or decontaminate</u>	<u>Procedure for cleaning and/or decontaminating (frequency)</u>	<u>Cleaning agents and/or disinfectants used</u>
Biosafety Cabinet	Wipe with 70% Ethanol	70% Ethanol
Designated workbench, Incubator	before and after working in cabinet on a daily basis.	Lysol
Bins, Tools, Equipment	Soak and/or wipe with 10% Bleach at the end of experiment.	10% Bleach solution

APPENDIX C

**STANDARD OPERATING PROCEDURES
FOR WASTE DISPOSAL AT MIT**

C. STANDARD OPERATING PROCEDURE FOR HANDLING BIOLOGICAL WASTE

Biological waste includes blood and blood products, human tissues, cultures and stocks of infectious agents, culture plates, plastic centrifuge tubes (contaminated with organisms or tissues) and biotechnological by product effluents. Solid waste of this type must be single bagged in 3 mil autoclavable bags. Free draining blood and blood products and biotechnology by product effluents shall be stored in securely sealed leakproof containers. These wastes must be tagged with an M.I.T. autoclave tag. The type of treatment will determine the type of tag to be used (autoclaved or chemically treated). The date, name of the waste generator and name of the waste processor must be marked on the tag. BSO has a supply of such tags.

A log must be kept for all autoclaves used to process biological waste unless the waste is subsequently incinerated. An example is included here. For each autoclave run of biological waste, the following information must be recorded:

type and volume of waste
waste generator
tag number
date, length and temperature of run

A bound notebook should be used to record this information. A copy must be sent to BSO in 56-255. After being processed the waste can be disposed of in the ordinary trash (or down the drain if liquid).

Autoclaves must be evaluated biologically by using an indicator microorganism with a defined heat susceptibility pattern. It is recommended that commercially available vials containing Bacillus stearothermophilus spores be used to verify autoclave operations as they have a well defined heat susceptibility pattern. BSO will provide these vials to all departments.

When sterilizing a load of liquid biological waste, an ampoule containing the indicator organism should be placed in the center of the load. When decontaminating solid biological waste, an ampoule should be placed in the center of the of the biohazard bag and attached to a wire or string for easy retrieval. The ampoule should be labeled as to the date, type of waste (solid or liquid) and length of the run. The ampoules should be dropped off at BSO. The information will be recorded in a log and the vials incubated at an appropriate temperature for two weeks to verify sterility. Inadequate sterilization will result in growth of the indicator organism. The procedure should be conducted at appropriate intervals (monthly is recommended) as decided by each department. Any evidence of inadequate sterilization should result in an investigation of the autoclave in question.

Animal carcasses, body parts and bedding and pathological waste (human anatomical parts, organs, tissues and body fluids) must be disposed of by incineration or interment. Contact BSO at 3-1740 for additional information.

STANDARD OPERATING PROCEDURE FOR HANDLING PHYSICALLY DANGEROUS WASTE

Sharp waste is defined as discarded items that may cause punctures or cuts, including hypodermic needles/syringes, Pasteur pipettes, broken glassware, scalpel blades, disposable razors, toothpicks and suture needles. Sharps must be segregated from other wastes.

All sharps from BL1 and BL2 laboratories are to be placed into gray or beige containers that are provided by a commercial vendor (**note – no chemical or radioactively contaminated sharps**). Seal and place full containers in the hallway no sooner than the night before pickup. Pickup for E17/E18 and E25 is Tuesday morning. Pickup for 18, 26, 56, 16, 66, and 68 is Friday morning. Pick up in all other buildings is by arrangement for special pickup. Contact Kevin Healy, Recycling Coordinator, x3-6360, or email, khealy@mit.edu, to arrange a special pickup or with questions and requests for containers. **DO NOT** leave the containers in the hall for more than 24 hours.

For empty, intact, glass chemical bottles with no biologics or radioactivity – triple rinse (rinseate may be hazardous waste and must be managed accordingly), deface labels, and collect in a cardboard box. Place the box in the hallway and the custodians will pick it up. Note: these **bottles CANNOT** be **CONTAMINATED** with **CHEMICALS, RADIOACTIVITY or BIOLOGICALS**. Contact Kevin Healy, Recycling Coordinator (x3-6360 or khealy@mit.edu) if the box is not picked up within two days.

Chemically contaminated sharps, unrinsed pipettes, pipette tips, glass bottles with leftover chemicals (that can not be rinsed) are treated like any other chemical waste. They are placed into a puncture proof container (e.g. glass, metal, or plastic); cardboard should be avoided. Contact the Environmental Management Office at x2-3666 (haz-waste@mit.edu) for pick up and for tags. Contact Brian Foti in the Environmental Management Office at x8-8023 or by email (brianf@mit.edu) with questions

APPENDIX D

LABELING

D. LABELING

The Standard requires that the fluorescent orange or orange-red warning labels be attached to containers of regulated wastes, refrigerators and freezers containing blood and other potentially infectious materials, and other containers used to store, transport, or ship blood or other potentially infectious materials.

These labels are not required when (1) red bags or red containers are used, (2) containers of blood, blood components, or blood products are labeled as to their contents and have been released for transfusion or other clinical use, and (3) individual containers of blood or other potentially infectious materials are placed in a labeled container during storage, transport, shipment or disposal.

The warning label must be fluorescent orange or orange-red, contain the biohazard symbol and the word BIOHAZARD, in a contrasting color, and be attached to each object by string, wire, adhesive, or another method to prevent loss or unintentional removal of the label.

Item	None Needed if Universal Precautions used & specific use of Container or Item Biohazard is known to Employees		
	Label	Red	Container
Regulated waste container (e.g., contaminated sharps containers)	X		X
Reusable contaminated sharps container (e.g., surgical instruments soaking in a tray)	X		X
Refrigerator/freezer holding blood or other potentially infectious material	X		
Containers used for storage, transport or shipping of blood	X		X
Blood/blood products for clinical use	No labels required		
Individual specimen containers of blood or other potentially infectious materials remaining in facility	X		X
Contaminated equipment needing service (e.g., dialysis equipment; suction apparatus)			X (plus a label specifying where the contamination exists)
Specimens and regulated waste shipped from the primary facility to another facility for service or disposal		X	X
Contaminated laundry	*	X	X
Contaminated laundry sent to another facility that does not use Universal Precautions		X	X

* Alternative labeling or color-coding is sufficient if it permits all employees to recognize the containers as requiring compliance with Universal Precautions.

APPENDIX E

TRAINING OUTLINE

E. TRAINING OUTLINE

1. INTRODUCTION - MIT BIOSAFETY PROGRAM (BSP)

- A. BSP Staff: Claudia Mickelson, Ph. D., Deputy Director, Biosafety
Richard Fink, Senior Officer, Biosafety Program
Emily Ranken, Officer, Biosafety/Industrial Hygiene Programs
Eric Cook, Assistant Officer, Biosafety Program
Carolyn Stahl, Assistant Officer, Biosafety Program
Barbara Gricus, Administrative Assistant
- B. Overview of BSP responsibilities

2. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA): BLOODBORNE PATHOGEN STANDARD

- A. Purpose: To minimize or eliminate occupational exposure to blood and other potentially infectious materials, (e.g., human body fluids and tissues) since an exposure could result in transmission of bloodborne pathogens, which could lead to disease or death.
- B. Scope: Covers all employees who could be "reasonably anticipated" as a result of performing their job duties to have contact with blood and other potentially infectious materials. MIT examples include medical personnel, laboratory researchers, campus police, athletic department, plumbers and building services personnel.

NOTE: "Good Samaritan" acts such as assisting a co-worker with a nosebleed would not be considered occupational exposure.

3. TRAINING REQUIREMENTS

- A. Employees receive training **upon employment or assignment to tasks** involving the potential for occupational exposure.
- B. **Annual retraining** is required.

4. BLOODBORNE PATHOGENS AND OCCUPATIONAL TRANSMISSION

- A. Definition: Bloodborne pathogens are microorganisms, (e.g., virus), found in human blood and body fluids that may cause disease in humans.
- B. Examples: Human Immunodeficiency Virus (HIV) and Hepatitis B Virus (HBV).
- C. Occupational routes of transmission:
 - 1. needlestick or cuts/puncture with sharp object
 - 2. splash or splatter to face or exposed skin
 - 3. contact with non-intact skin (chapped or dry hands)

5. EXPOSURE CONTROL PLAN

- A. Review of job titles and specific job tasks where there is reasonably anticipated exposure.
- B. Review of Universal Precautions and Standard Operating Procedures (SOP):
 - 1. engineering and work practice controls
 - 2. personal protective equipment
 - 3. housekeeping (cleaning/decontamination schedule)
 - 4. labels and signs
 - 5. safer medical devices

6. SAFER MEDICAL DEVICES

A. Definitions

1. Sharps with Engineered Sharps Injury Protections: A non-needle sharp or a needle device used for withdrawing body fluids, accessing a vein or artery, or administering medications or other fluids, with a built in safety feature or mechanism that effectively reduces the risk of exposure incident.
2. 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.

B. Evaluation, Implementation and Training

C. Implementation dates

7. HEPATITIS B VACCINATION

- A. Safe and effective vaccine available for immunization against the Hepatitis B Virus.
- B. A series of 3 vaccinations.
- C. Vaccination against HBV is made available, FREE OF CHARGE, to all employees who have occupational exposure to blood and other potentially infectious materials.
- D. Employees must sign a declination form if they choose not to be vaccinated, but may later request and receive the vaccine at no cost.

8. EXPOSURE MANAGEMENT

- A. Review of exposure incidents (e.g., needlestick).
- B. Procedure to follow in the event of an exposure: See red card.
 1. Wash the exposure area with soap and water.
 2. Notify your supervisor immediately.
 3. Go to MIT Medical (E23 Front Desk).
- C. Medical assessment, treatment, counseling, follow-up:
 1. Confidential.
 2. No cost to the employee.

9. RECORDKEEPING REQUIREMENTS

- A. Training records (BSP).
- B. Medical records (Medical Department).

10. ADDITIONAL INFORMATION

- A. Contact your supervisor.
- B. Contact BSP; N52-496; 2-3477.

APPENDIX F

HBV ACCEPTANCE/DECLINATION FORM

F. HBV ACCEPTANCE/DECLINATION FORM

APPENDIX G

OSHA BLOODBORNE PATHOGEN STANDARD – 29 CFR PART 1910.1030

G. OSHA BLOODBORNE PATHOGEN STANDARD - 29 CFR PART 1910.1030

Copies are available from the Biosafety Office (BSO) in 56-255, 3-1740 or at http://www.osha-slc.gov/OshStd_data/1910_1030.html.

APPENDIX H

Selection of Needleless Devices and Sharps with Engineered Injury Protection

- H. Document consideration and implementation of appropriate commercially available and effective safer medical devices designed to eliminate or minimize occupational exposure. The P.I. must solicit input from laboratory personnel who are potentially exposed to injuries from contaminated sharps in the identification, evaluation, and selection of effective engineering and work practice controls and must document that solicitation in the Exposure Control Plan.**

APPENDIX I

ADDITIONAL REFERENCES

I. ADDITIONAL REFERENCES

No additional references at this time.

APPENDIX J

ADDITIONAL REFERENCES

Safer needle device training

In this appendix, describe what the training consisted of and put the attendance sheets. The attendance sheets must have the following information: date of training, name of trainer, and the names of the personnel who were trained.

N/A – needles are not used in this lab.