BLOODBORNE PATHOGENS EXPOSURE CONTROL PLAN

NJ Center for Science, Technology & Mathematics &
ILSE – The Institute for Life Sciences Entrepreneurship

Kean University STEM Center
1075 MORRIS AVENUE
UNION, NEW JERSEY 07083

October 2019

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EMERGENCY PROCEDURES

Police/Fire/Ambulance and Chemical or Biological Spill Response

- Call KUPD for any emergency:
  - **Dial 9-1-1** from any campus phone.
  - **Dial 908-737-4800** from a cell phone.
  - Dial 9-1-1 from a cell phone and tell them you are located at Kean University STEM Building: 1075 Morris Avenue, Union
- Hit the red button on any outdoor Blue Light Telephone.

Treatment for Minor Injuries and Illness

To obtain treatment for a non-life threatening workplace exposure, injury, or illness, contact your supervisor or the STEM Safety Officer. If an incident occurs during non-business hours, go to the nearest hospital emergency room, and report the incident to the Safety Office on the next business day.

STEM/CSTM Safety Officer: Nan Perigo, nperigo@kean.edu, STEM 118, 908-737-7227

Kean University Safety Officer: Suzanne Kupiec, skupiec@kean.edu, 908-737-4804

Nearest urgent care center:

MD Care Urgent Care Center
400 Westfield Ave, Elizabeth, NJ 07208
(908) 691-3800

Nearest emergency center:

Overlook Medical Center Emergency Services - Union Campus
1000 Galloping Hill Road, Union, NJ 07083
908-522-6300

Building-Related Emergencies

Contact the Building Manager: Alonso Losada, 908-737-5848 or cell 908-377-5803; alosada@kean.edu

Contact the Research Facilities Manager, Nan Perigo, at 908-737-7227; nperigo@kean.edu

INTRODUCTION

Kean University's NJ Center for Science, Technology & Mathematics (CSTM) and the Institute for Life Sciences Entrepreneurship (ILSE) are committed to provide a safe and healthful work environment. In pursuit of this endeavor, the following Exposure Control Plan (ECP) is provided to eliminate or minimize occupational exposure to bloodborne pathogens in accordance with the PEOSH Bloodborne Pathogens Standard, Title 29 Code of Federal Regulations 1910.1030.

The ECP is a key document to assist laboratories in implementing and ensuring compliance with the standard, thereby protecting employees and students. This ECP includes:

- Individual exposure determination.
- The procedures for evaluating the circumstances surrounding an exposure incident, and
- The schedule and method for implementing the specific sections of the standard, including:

    - Methods of compliance
    - Hepatitis B vaccination and post-exposure follow-up
    - Training and communication of hazards
    - Recordkeeping

- Biological Safety Practices for Laboratories
- Sharps evaluation and injury log

PROGRAM ADMINISTRATION

The success of the program relies on both management and employees. The following are roles and responsibilities for each.

Management Responsibilities

- The CSTM Safety Office and each tenant company adminstrator are responsible for the implementation of the ECP. CSTM and ILSE will maintain and update the written ECP at least annually and whenever necessary to include new or modified tasks and procedures.
- The Safety Office is responsible for written housekeeping protocols and will ensure that effective disinfectants are used in the building.
- Employers and the Safety Officer shall be responsible for ensuring that all medical actions required are performed and that appropriate medical records are maintained.
- The Safety Office shall ensure that training, documentation of training, and making the written ECP available to employees, PEOSH and NIOSH representatives.
- Each affected company, in consultation with CSTM & ILSE, shall maintain and provide all necessary personal protective equipment (PPE), engineering controls (i.e., sharp containers, self-sheathing needles, etc.), labels and red bags as required by the standard and will ensure that adequate supplies of the aforementioned equipment are available.

Employee Responsibilities

Those employees who are reasonably anticipated to have contact with or exposure to blood or other potentially infectious materials are required to comply with the procedures and work practices outlined in this ECP.

EMPLOYEE EXPOSURE DETERMINATION

All exposure determinations are made without regard to the use of Personal Protective Equipment (PPE).

Any student or employee of CSTM or an ILSE tenant company which uses human blood, blood products, cell lines, or other tissues is considered to be at risk of exposure to human pathogens.

Good Samaritan Acts

"Good Samaritan" acts which result in exposure to blood or other potentially infectious materials from assisting a fellow employee, student, or visitor (i.e., assisting a coworker with nosebleed, giving CPR or first aid, etc.) are not included in the Bloodborne Pathogens Standard. However, employers or the Safety Office should offer post-exposure evaluation and follow-up in such cases.

METHODS OF IMPLEMENTATION AND CONTROL

Exposure Control Plan (ECP)

Employees covered by the Bloodborne Pathogens Standard will receive an explanation of this ECP during their initial training session. It will also be reviewed in their annual refresher training. All employees will have an opportunity to review this Plan at any time during their work shifts and/or request a copy by contacting the Safety Office. A copy of the Plan will be made available free of charge and within 15 days of the request.

CSTM and ILSE will be responsible for reviewing and updating the ECP annually or sooner if necessary to reflect any new or modified tasks and procedures which affect occupational exposure and to reflect new or revised employee positions with occupational exposure.

Universal Precautions/Standard Precautions

Universal Precautions is an infection control method which requires employees to assume that all human blood and specified human body fluids are infectious for HIV, HBV, HCV, and other bloodborne pathogens, and must be treated accordingly. In CSTM, bacterial cultures and cell cultures are treated as potential pathogens and precautions used accordingly.

Standard Precautions extend Universal Precautions, and are the minimum infection prevention practices that apply to all patient care, regardless of suspected or confirmed infection status of the patient, in any setting where healthcare is delivered. These practices are designed to both protect staff and prevent the spread of infections among patients.

Standard Precautions include: 1) hand hygiene, 2) use of personal protective equipment (e.g., gloves, gowns, masks), 3) safe injection practices, 4) safe handling of potentially contaminated equipment or surfaces in the patient environment, and 5) respiratory hygiene/cough etiquette.

Employees and students are required to utilize Standard Precautions.

Engineering Controls

Engineering controls and work practice controls will be used to prevent or minimize exposure to bloodborne pathogens. The following engineering controls are used, as needed, throughout the facility.

- Sharps Containers
- Red bags and Medical Waste Containers
- Elimination of needle-bearing devices, and when the elimination of needle-bearing devices is not possible, needle devices with safety features
- Hand Washing Facilities
- Biological Safety Cabinets
- Mechanical pipetting devices
- Autoclaves

- Work carried out on spill trays or pans, or using bench paper
- Centrifuge safety devices (safety cups, sealed rotors)
- Vacuum line filter systems/chemical disinfection traps
- Specimen transport containers

Minimum Work Practices to be Observed

The following work practices, as a minimum, shall be observed in areas where blood or other potentially infectious materials are present:

- Eating, drinking, smoking, applying cosmetics or lip balm and handling contact lenses in work area where there is a likelihood of occupational exposure is prohibited.
- Food and drink shall not be stored in refrigerators, freezers, shelves, cabinets or on counter tops or bench tops where blood or other potentially infectious materials are or were present.
- All employees must wash their hands immediately, or as soon as feasible, after removal of gloves or other personal protective equipment.
- Handwashing is also required: before touching a patient, even if gloves will be worn; before exiting the patient's care area after touching the patient or the patient's immediate environment; after contact with blood, body fluids or excretions, or wound dressings; prior to performing an aseptic task (e.g., placing an IV, preparing an injection); if hands will be moving from a contaminated-body site to a clean-body site during patient care.
- Procedures involving blood or other potentially infectious materials shall be performed in such a manner as to minimize splashing, splattering, and generation of droplets of these substances.
- Mouth pipetting is prohibited.
- Specimens of blood or other potentially infectious materials shall be transported in a container which prevents leakage during collection, handling, processing, storage, transport or shipping.
- Equipment which may become contaminated with blood or other potentially infectious materials shall be examined prior to servicing or shipping and shall be decontaminated such equipment as necessary. Items will be labeled per the standard if not completely decontaminated.
- Contaminated surfaces shall be cleaned immediately or as soon as possible.
- Contaminated needles and other contaminated sharps are not bent, recapped or removed unless: (1) It can be demonstrated that there is no feasible alternative, or (2) The action is required by a specific medical or research procedure. In the two situations above, the recapping or needle removal is accomplished through the use of a mechanical device or a one-handed scoop technique.
- Contaminated sharps are placed in appropriate containers immediately, or as soon as possible after use. Containers should be disposed of when approximately 2/3 full.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Personal protective equipment must be used if occupational exposure remains after instituting engineering and work practice controls, or if the controls are not feasible. Training will be provided by the Safety Office and the employee's supervisor in the use of the appropriate personal protective equipment for employees' specific job classifications and tasks/procedures they will perform.

Additional training shall be provided, whenever necessary, such as if an employee takes a new position or if new duties are added to their current position.

Appropriate personal protective equipment is required for the tasks listed below in Table 2. The specific equipment to be used is listed after the task.

Table 1 – Personal Protective Equipment by Task

Task	Gloves	Eye Protection	Gown or Apron	Surgical-Type Mask	Lab Coat	CPR Mask	Foot Covering
Administering First Aid.	Yes	As needed	As needed	As needed	No	As needed	As needed
Cleaning up a spill of blood or other body fluids.	Yes	As needed	As needed	As needed	No	No	As needed
Picking up the trash in a ladies' restroom.	Yes	No	No	No	No	No	No
Repairs to toilets and when working pipes carrying raw sewerage.	Yes	Yes	No	No	No	No	As needed
Medical procedures/actions that require contact with mucous membranes or open wounds.	Yes	As needed	As needed	As needed	As needed	No	As needed
Phlebotomy	Yes	No	As needed	No	As needed	No	No
Handling human blood or other human-derived materials, including human cell lines in a classroom or laboratory setting.	Yes	Yes	As needed	As needed	Yes	No	No
Handling or laundering uniforms, towels, or other items potentially contaminated with blood or body fluids.	Yes	No	As needed	No	No	No	No
Changing diapers and assisting with toileting.	Yes	No	No	No	No	No	No
When touching a person with visible PIM or OPIM on his/her person or clothing. ("red, wet, or dirty")	Yes	No	No	No	No	No	No
When in the vicinity of a person/arrestee known to spit or to throw bodily fluids.	Yes	Yes Face shield preferred	Yes	As needed	No	No	No

Available Types of Personal Protective Equipment

The following is a list of readily available PPE found within each lab, as needed for work in that lab. Other equipment should be purchased prior to needing it for a new task.

Gloves, disposable: (latex, nitrile or vinyl)
Eye Protection: goggles and face shields
Eye/Face Protection: Surgical masks with face shields
Laboratory Coats or scrubs
For cleaning: Gloves, re-useable, cleaned after each use

Required Work Practices when wearing PPE

- Wear appropriate gloves when it can be reasonably anticipated that you may have contact with blood or other potentially infectious materials (e.g. cultures) and when handling or touching contaminated items or surfaces. Replace gloves if torn, punctured, contaminated, or if their ability to function as a barrier is compromised.
- Wear appropriate face and eye protection such as a mask with glasses with solid side shields or a chin-length face shield when splashes, sprays, splatters, or droplets of blood or other potentially infectious materials pose a hazard to the eye, nose, or mouth.
- Wash hands immediately or as soon as feasible using clean running water and soap after removal of gloves or other personal protective equipment. Hand sanitizer may be used in situations where soap and water are not readily available and the hands are not visibly soiled. Wash hands as soon as possible thereafter.
- Remove protective equipment before leaving the work area and after a garment becomes contaminated.
- Place used protective equipment in appropriately designated areas or containers being stored, washed, decontaminated, or discarded.
- Following any contact of body areas with blood or any other infectious materials, you must wash your hands and any other exposed skin with soap and water as soon as possible. Employees must also flush exposed mucous membranes (eyes, mouth, etc) with water.
- Discard utility gloves when they show signs of cracking, peeling, tearing, puncturing, or deterioration.
- Never wash or decontaminate *disposable* gloves for reuse or before disposal.
- If a garment is penetrated by blood and other potentially infectious materials, the garment(s) must be removed immediately or as soon as feasible. If a pullover scrub (as opposed to scrubs with snap closures) becomes minimally contaminated, employees should be trained to remove the pullover scrub in such a way as to avoid contact with the outer surface; e.g., rolling up the garment as it is pulled toward the head for removal. If the amount of blood exposure is such that the blood penetrates the scrub and contaminates the inner surface, not only is it impossible to remove the scrub without exposure to blood, but the penetration itself would constitute exposure. It may be prudent to train employees to cut such a contaminated scrub to aid removal and prevent exposure to the face.
- Repair and/or replacement of PPE will be at no cost to employees.

TRAINING

Each employee who has or is reasonably anticipated to have occupational exposure to bloodborne pathogens will receive training conducted by the STEM Safety Office, ILSE or a qualified individual designated by his/her department.

The training program will cover, at a minimum, the following elements:

- Access to a copy of the standard and explanation of its contents
- Epidemiology and symptoms of bloodborne pathogens
- Modes of transmission
- Details of the facility's Exposure Control Plan and how to obtain a copy
- Methods to recognize exposure tasks and other activities that may involve exposure to blood or potential pathogens
- Use and limitations of Engineering Controls, Work Practices, and PPE
- PPE - types, use, location, removal, handling, decontamination, and disposal
- PPE - the basis for selection
- Information on the Hepatitis B vaccine program. Training will be given prior to vaccination on its safety, effectiveness, benefits, and method of administration. (This information can also be found at
- Emergency procedures for occupational incidents involving exposures to blood and other potentially infectious materials such as cultures
- Post-exposure evaluation and follow-up information and procedures
- Signs and labels used in this facility
- Questions and answer session

An Employee Education and Training Record will be completed for each employee upon completion of training. This document will be kept at ILSE or the STEM Safety Office.

LABELING

STEM Labs and ILSE tenant companies will affix warning labels to:

- containers of regulated waste;
- containers of contaminated reusable sharps;
- refrigerators and freezers containing blood or OPIM;
- other containers used to store, transport, or ship blood or OPIM;
- equipment that is being shipped or serviced, if it cannot be completely decontaminated prior to shipment or servicing; and
- bags or containers of contaminated laundry, unless red bags are used.

Labeling requirements:

- Labels will have both the biohazard symbol and the word "BIOHAZARD" as illustrated in Figure 1.
- Be fluorescent orange or orange-red or predominantly so, with lettering and symbols in a contrasting color;
- Affixed as close as feasible to the container by string, wire, adhesive, or other method that prevents their loss or unintentional removal.
- Red bags or red containers may be substituted for labels.
- Labels required for contaminated equipment shall be in accordance with this paragraph and shall also state which portions of the equipment remain contaminated.

Figure 1 – Example of an Acceptable Label
(Please note: If this document has been reproduced in black and white, the label above has black text on a bright orange background.)

HEPATITIS B VACCINATIONS

The training program will provide information on hepatitis B vaccinations addressing the safety, benefits, efficacy, methods of administration and availability (see below). The hepatitis B vaccination series will be made available at no cost within 10 days of initial assignment of employees who have occupational exposure to blood or other potentially infectious materials unless:

- the employee has previously received the series,
- antibody testing reveals that the employee is immune,
- medical reasons prevent taking the vaccination, or
- the employee chooses not to participate (declination form must be filed).

Hepatitis B vaccination will be provided by a designated occupational health clinic.

Declining the Vaccination

All employees are strongly encouraged to receive the hepatitis B vaccination series. However, if an employee chooses to decline the vaccination, then the employee must sign a form stating the following statement (from 29 CFR 1910.1030 App A):

> **Declination Statement**
>
> 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 me; however, I decline hepatitis B vaccination at this time. I understand that by declining this vaccine I continue to be at risk of acquiring hepatitis B, a serious disease. If, in the future I continue to have occupational exposure to blood or 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.

Employees who decline may request and obtain the vaccination at a later date at no cost. The documentation of refusal of the hepatitis B vaccination will be kept on file by ILSE or the STEM Safety Office.

OSHA Statement on Hepatitis B:
from https://www.osha.gov/OshDoc/data_BloodborneFacts/bbfact05.pdf

Hepatitis B Vaccination Protection
Hepatitis B virus (HBV) is a pathogenic microorganism that can cause potentially life-threatening disease in humans. HBV infection is transmitted through exposure to blood and other potentially infectious materials (OPIM), as defined in the OSHA Bloodborne Pathogens standard, 29 CFR 1910.1030.

Any workers who have reasonably anticipated contact with blood or OPIM during performance of their jobs are considered to have occupational exposure and to be at risk of being infected. Workers infected with HBV face a risk for liver ailments which can be fatal, including cirrhosis of the liver and primary liver cancer. A small percentage of adults who get hepatitis B never fully recover and remain chronically infected. In addition, infected individuals can spread the virus to others through contact with their blood and other body fluids.

An employer must develop an exposure control plan and implement use of universal precautions and control measures, such as engineering controls, work practice controls, and personal protective equipment to protect all workers with occupational exposure. In addition, employers must make hepatitis B vaccination available to these workers.

Hepatitis B vaccination is recognized as an effective defense against HBV infection.

HBV Vaccination: The standard requires employers to offer the vaccination series to all workers who have occupational exposure. Examples of workers who may have occupational exposure include, but are not limited to, healthcare workers, emergency responders, morticians, first-aid personnel, correctional officers and laundry workers in hospitals and commercial laundries that service healthcare or public safety institutions. The vaccine and vaccination must be offered at no cost to the worker and at a reasonable time and place.

The hepatitis B vaccination is a non-infectious, vaccine prepared from recombinant yeast cultures, rather than human blood or plasma. There is no risk of contamination from other bloodborne pathogens nor is there any chance of developing HBV from the vaccine. The vaccine must be administered according to the recommendations of the U.S. Public Health Service (USPHS) current at the time the procedure takes place.

To ensure immunity, it is important for individuals to complete the entire course of vaccination contained in the USPHS recommendations. The great majority of those vaccinated will develop immunity to the hepatitis B virus. The vaccine causes no harm to those who are already immune or to those who may be HBV carriers. Although workers may desire to have their blood tested for antibodies to see if vaccination is needed, employers cannot make such screening a condition of receiving vaccination and employers are not required to provide prescreening.

Employers must ensure that all occupationally exposed workers are trained about the vaccine and vaccination, including efficacy, safety, method of administration, and the benefits of vaccination. They also must be informed that the vaccine and vaccination are offered at no cost to the worker. The vaccination must be offered after the worker is trained and within 10 days of initial assignment to a job where there is occupational exposure, unless the worker has previously received the vaccine series, antibody testing has revealed that the worker is immune, or the vaccine is contraindicated for medical reasons. The employer must obtain a written opinion from the licensed healthcare professional within 15 days of the completion of the evaluation for vaccination. This written opinion is limited to whether hepatitis B vaccination is indicated for the worker and if the worker has received the vaccination.

Declining the Vaccination: Employers must ensure that workers who decline vaccination sign a declination form. The purpose of this is to encourage greater participation in the vaccination program by stating that a worker declining the vaccination remains at risk of acquiring hepatitis B. The form also states that if a worker initially declines to receive the vaccine, but at a later date decides to accept it, the employer is required to make it available, at no cost, provided the worker is still occupationally exposed.

Suggested format of Vaccination Declination Form:

Name:_____

Position:_____

Employer:_____

Employer contact info:_____

Declination Statement

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 me; however, I decline hepatitis B vaccination at this time. I understand that by declining this vaccine I continue to be at risk of acquiring hepatitis B, a serious disease. If, in the future I continue to have occupational exposure to blood or 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.

Employee Signature:_____

Date:_____

Received in CSTM Safety Office by:_____

Received in CSTM Safety Office on (date): _____

POST-EXPOSURE PROCEDURES

Emergency Procedures for Exposures or Needlesticks

If you experienced a needlestick or other sharps injury, or were exposed to blood or other body fluid during the course of your work, **follow these steps**:

- Remove contaminated clothing.
- IMMEDIATELY irrigate exposed eyes with clean water, saline, or sterile irrigants for 15 minutes.
- IMMEDIATELY flush splashes to the nose, mouth, or skin with running water.
- VIGOROUSLY wash needlesticks and cuts with soap and water for one minute with antibacterial soap, if available.
- Notify your supervisor.
    - Your employer will attempt to identify the source person, if appropriate, and obtain consent to test his/her blood.
    - If applicable, set aside the sharp item (e.g. tool, medical device, or weapon) involved in the incident for testing.
- Your employer should assist you in obtaining IMMEDIATE medical treatment. During non-business hours, call Public Safety Dispatch at 908-737-4800. Public Safety will assist you in transport (if needed) to the emergency department of the nearest hospital. Notify the Safety Office of the incident on the next business day.
- Document the injury or exposure using forms available from the Safety Office. All needlesticks, sharps injuries, and blood or other body fluid exposure will be investigated by the Safety Officer.

Post-Exposure Evaluation by Healthcare Professional

An immediately available confidential medical evaluation and follow-up will be provided by the University's designated occupational health clinic or a hospital emergency room. If the clinician has a question about the appropriate medical treatment for occupational exposures, 24-hour assistance is available from the Clinicians' Post Exposure Prophylaxis Hotline (PEPline) at 1-888-448-4911.

The following actions will be performed:

a. The employee and/or supervisor will document the routes of exposure and how exposure occurred.
b. The employee, supervisor, and/or employer designee will attempt to obtain consent from the source individual to test his/her blood to determine HBV, HCV, and HIV infectivity.
c. If the source individual consents to testing, the exposed employee will be provided with the source individual's test results and information about any applicable laws or regulations concerning the disclosure of the source individual's identity and infection status.

d. If the employee consents to blood testing or to baseline blood sampling, the employer should arrange for the collection of exposed employee's blood as soon as feasible after the exposure incident and test blood for HBV and HIV serological status.
e. If the employee does not give consent for HIV serological testing during the collection of blood for baseline testing, the employer should arrange for the baseline blood sample to be preserved for at least 90 days.
f. The Safety Office will review the circumstances of the exposure incident to determine if procedures, protocols and/or training need to be revised.

Information Provided to Healthcare Professional

Employers should ensure that health care professionals responsible for employee's HB vaccination and post-exposure evaluation and follow-up be given a copy of the Bloodborne Pathogens Standard. Employers should also ensure that the health care professional evaluating an employee after an exposure incident receives the following:

a. a description of the employee's job duties relevant to the exposure incident
b. route(s) of exposure
c. circumstances of exposure
d. if possible, results of the source individual's blood test; and
e. relevant employee medical records, including vaccination status

Healthcare Professional's Written Opinion

The clinician will provide the employee with a copy of the evaluating healthcare professional's written opinion within 15 days after completion of the evaluation.

For HB vaccinations, the healthcare professional's written opinion will be limited to whether the employee requires or has received the HB vaccination.

The written opinion for post-exposure evaluation and follow-up will be limited to whether or not the employee has been informed of the results of the medical evaluation and any medical conditions which may require further evaluation and treatment.

All other diagnoses must remain confidential and not be included in the written report to the employer.

Procedures for Evaluating an Exposure Incident

The CSTM Safety Office will review the circumstances of all exposure incidents to determine:

a. engineering controls in use at the time
b. work practices followed
c. a description of the device being used (including type and brand)
d. protective equipment or clothing that was used at the time of the exposure incident (gloves, eye shields, etc.)
e. location of the incident
f. procedure being performed when the incident occurred
g. employee's training
h. the Safety Office will record all percutaneous injuries from contaminated sharps in the Sharps Injury Log.
i. If it is determined that revisions need to be made, the Safety Office will ensure that appropriate changes are made to this BBP-ECP. (Changes may include evaluations of other, similar devices with different safety features, adding employees to the exposure determination list, etc.)

HOUSEKEEPING

CSTM Safety and ILSE have developed and implemented a written schedule for cleaning and decontaminating work surfaces as indicated by the standard. Any surface that is visibly contaminated will be cleaned immediately or as soon as feasible.

a. Employers should maintain a written schedule for routine cleaning and disinfection of all surfaces throughout their lab(s).

b. In patient care areas and in research laboratories, work surfaces will be decontaminated with an appropriate disinfectant after completion of procedures, immediately when overtly contaminated, after any spill of blood or other potentially infectious materials, and at the end of the work shift when surfaces have become contaminated since the last cleaning.

c. All areas will remove and replace protective coverings such as plastic wrap, aluminum foil, bench paper, and the like, when contaminated.

d. Staff shall inspect and decontaminate, on a regular basis, reusable receptacles such as bins, pails, and cans that are likely to become contaminated. If contamination is visible, clean and decontaminate receptacles immediately, or as soon as feasible.

e. Use mechanical means such as tongs, forceps, or a brush and a dust pan to pick up contaminated broken glassware; never pick up with hands even if gloves are worn.

f. Store or process reusable sharps in a way that ensures safe handling.

g. Place regulated waste in closable and labeled or color-coded containers. When storing, handling, transporting or shipping, place regulated waste in containers that are constructed to prevent leakage.

h. When discarding contaminated sharps (including safer medical devices), place them in containers that are closable, puncture-resistant, appropriately labeled or color-coded, and leak-proof on the sides and bottom.

i. Ensure that the sharps containers are easily accessible to personnel and located as close as feasible to the immediate area where sharps are used or can be reasonably anticipated to be found. Sharps containers also must be kept upright throughout use, replaced routinely, closed when moved, and not allowed to overfill.

j. Never manually open, empty, or clean reusable contaminated sharps disposal containers.

k. Discard all regulated waste according to federal, state, and local regulations, i.e., liquid or semi-liquid blood or other potentially infectious material; items contaminated with blood or other potentially infectious materials that would release these substances in a liquid or semi-liquid state if compressed; items caked with dried blood or other potentially infectious materials and capable of releasing these materials during handling; contaminated sharps; and pathological and microbiological wastes containing blood or other potentially infectious materials.

Spill Clean-up Procedure

NOTES:

1. Bleach solutions should not be used on fabric, carpeting, or bare metal surfaces. Other EPA-registered antimicrobial products such as tuberculocides (EPA List B), sterilants (EPA List A), and products registered against HIV/HBV (EPA List E) may be substituted for the bleach solution. Consult the manufacturer's instructions for use. For small spills, disposal germicidal wipes can be used. Consult the manufacturer's instructions for use

2. Follow the below procedures for spill cleanup:

a. Block off the area of the spill until clean-up and disinfection is complete.

b. Put on eye protection and disposable gloves. Wear shoe covers or water-resistant boots over your shoes if you may step in the spill while cleaning it up.

c. Prepare a 10% bleach solution – Add one part household bleach to nine parts cool water (1 ½ cups of bleach per gallon of water, or 3 ounces (90 ml) of bleach per 32 ounces of water) and gently mix the solution.

d. Place paper towels over the spill.

e. Gently pour bleach solution onto the paper towels covering the spill.

f. Let the bleach solution remain on the spill for 20 minutes.

g. Pick up the paper towels with tongs or a broom and dustpan. Place the waste in a red biohazard bag.

h. Wipe up the remaining bleach solution with paper towels, and place them in the biohazard bag.

i. Wipe the area down with the bleach solution using fresh paper towels, and place the waste in the biohazard bag.

j. Allow the area to air dry.

k. All non-disposable equipment, as tongs, mops, brushes, dust pans, or overboots should be disinfected by soaking with the bleach solution and air dried. Wipe the mop handle with fresh paper towels damped with bleach solution.

l. When finished, remove gloves and shoe covers and place in the biohazard bag with all soiled cleaning materials. Securely tie-up the bag.

m. Autoclave the bag with (or without) other solid medical waste for disposal.

n. Thoroughly wash hands with soap and water.

o. Contact the Medical Waste disposal contractor when it is time for disposal of the waste.

Laundering/Cleaning of Contaminated Apparel and Accessories

With regard to contaminated personal protective equipment, OSHA has stated in CPL 02-02-069 XIII.D.16, that “Home laundering of contaminated items is unacceptable because the employer cannot ensure that proper handling or laundering procedures are being followed and because contamination could migrate to the homes of employees" Employers are responsible for cleaning, laundering and/or disposing of personal protective equipment [29 CFR 1910.1030(d)(3)(iv)].

With that in mind:

a. Employers will clean or replace items, at their discretion, at no cost to the employee.
b. Lab coats and gowns will be laundered or dry cleaned by an outside vendor capable of handling biomedical waste, or discarded in red bag waste when contaminated.
c. Soiled leather items (belts, shoes, gloves) will be scrubbed clean using a brush and hot water or discarded in red bag waste when contaminated.
d. The method used to clean other fabric items will be on a case-by-case basis.

Contaminated Laundry Handling Procedures

a. Use appropriate personal protective equipment when handling contaminated laundry.
b. Place wet contaminated laundry in leak-proof, labeled or color-coded containers or bags before transporting.
c. Bag contaminated laundry at its location of use. Never sort or rinse contaminated laundry in areas of its use.
d. Red laundry bags or those marked with the biohazard symbol unless universal precautions are in use at the facility and all employees recognize the bags as contaminated and have been trained in handling the bags.
e. If contaminated laundry is sent off-site, employer will determine if the receiving facility uses universal precautions. If universal precautions are not used, then Kean will place the contaminated laundry in red bags. Red bags are available from EHS.
f. When handling and/or sorting contaminated/potentially contaminated laundry, gloves and other appropriate personal protective equipment shall be worn.
g. Handle contaminated laundry as little as possible and with a minimum of agitation.
h. Dry cleaning is an acceptable method for decontamination.
i. If hot water is used, linen should be washed with detergent in water at least 140°F - 160°F for 25 minutes. If low-temperature (<140°F) laundry cycles are used, chemicals suitable for low-temperature washing at proper use concentration should be used.

RECORDKEEPING

Medical Records

Medical records are maintained for each employee with occupational exposure in accordance with 29 CFR 1910.1020, "Access to Employee Exposure and Medical Records." Employers will maintain these records.

In addition to the requirements of 29 CFR 1910.1020, the medical record will include:

a. The name and social security number of employee;
b. A copy of the employee's hepatitis B vaccinations and any medical records relative to the employee's ability to receive vaccination;
c. A copy of all results of examinations, medical testing, and follow-up procedures as required by the standard;
d. A copy of all healthcare professional's written opinion(s) as required by the standard.

All employee medical records will be kept confidential and will not be disclosed or reported without the employee's express written consent to any person within or outside the workplace except as required by the standard or as may be required by law.

Employee medical records shall be confidential and maintained for at least the duration of employment plus 30 years in accordance with 29 CFR 1910.1020.

Employee medical record shall be provided upon request of the employee or to anyone having written consent of the employee within 15 working days.

Training Records

Bloodborne pathogen training records will be maintained by the Safety Office and/or the employer. The training record shall include:

a. the dates of the training sessions;

b. the contents or a summary of the training sessions;

c. the names and qualifications of persons conducting the training;

d. the names and job titles of all persons attending the training sessions.

Training records will be maintained for a minimum of three (3) years from the date on which the training occurred. Employee training records will be provided upon request to the employee or the employee's authorized representative within 15 working days.

Sharps Injury Log Requirements

In addition to the 29 CFR 1904 Recordkeeping Requirements, all percutaneous injuries from contaminated sharps are also recorded in the Sharps Injury Log. All incidences must include at least:

a. the date of the injury
b. the type and brand of the device involved
c. the department or work area where the incident occurred
d. an explanation of how the incident occurred

This log is reviewed at least annually by the Safety Office as part of the annual evaluation of the program and is maintained for at least five years following the end of the calendar year that they cover. If a copy is provided to an interested party, all personal identifiers must be removed from the report.

Table 2 - Sharps Injury Log

Date	**Type of Device** (e.g., syringe, suture needle)	**Brand Name of Device**	**Work Area where injury occurred**	**Brief description of how the incident occurred**

Transfer of Records

If the employer ceases to do business and there is no successive employer to receive and retain the records for the prescribed period, the employer shall notify the Director of the National Institute for Occupational Safety and Health (NIOSH) at least three (3) months prior to scheduled record disposal and prepare to transmit them to the Director.

SHARPS EVALUATION PROGRAM

All staff who use sharps will be asked to participate in the evaluation of the sharps in use, utilizing the following form:

Safety Feature Evaluation Form for Safety Syringes

Product: _____ Date: _____

Please **circle** or mark the check box of the most appropriate answer for each question. Not applicable (N/A) may be used if the question does not apply to this particular product.

1. The safety feature can be activated using a one-handed technique.....Agree ..... Disagree N/A
2. The safety feature **does not** obstruct vision of the tip of the sharp.....Agree .....Disagree N/A
3. Use of this product requires you to use the safety feature .....Agree ..... Disagree N/A
4. This product does not require more time to use than a non-safety device.....Agree ..... Disagree N/A
5. The device is easy to handle while wearing gloves .....Agree ..... Disagree N/A
6. The device is easy to handle while wet.....Agree ..... Disagree N/A
7. This device offers a good view of the dosage/aspirated fluid.....Agree ..... Disagree N/A
8. This device will work with all required syringe and needle sizes.....Agree ..... Disagree N/A
9. The device is equally satisfactory for different patient populations (older, younger, heavy, thin, etc.) .....Agree ..... Disagree N/A
10. The device can be used without causes more patient discomfort than other devices.....Agree ..... Disagree N/A
11. The device does not increase the number of sticks to the patient .....Agree ..... Disagree N/A
12. There is a clear and unmistakable change (audible or visible) that occurs when the safety feature is activated .....Agree ..... Disagree N/A
13. The safety feature operates reliably .....Agree ..... Disagree N/A
14. The exposed sharp is permanently blunted or covered after use and prior to disposal Agree ..... Disagree N/A
15. This device is no more difficult to dispose of after use than non-safety devices.....Agree ..... Disagree N/A

16. The user does not need extensive training for correct operation.....Agree ..... Disagree N/A

17. The design of the device suggests proper use .....Agree ..... Disagree N/A

18. It is not easy to skip a crucial step in proper use of the device .....Agree ..... Disagree N/A

19. How long have you been using this device?
    ☐ It is new to me. ☐ Less than a month ☐ >1 month but < 3 months ☐ >3 months

20. About how many times did you use this syringe before you were comfortable using it?
    ☐ 1 time ☐ 5 times ☐ 10 times ☐ 15 times ☐ 20 times ☐ I never felt comfortable

21. Do you consider yourself?: ☐ Right-handed ☐ Left-handed

22. What size glove do you wear? ☐ Extra small ☐ Small ☐ Medium ☐ Large ☐ Extra Large

23. Of the above questions, which three are the most important to you when considering your safety when using this product?

24. Are there other questions which you feel should be asked regarding the safety/utility of this product?

BIOSAFETY IN RESEARCH, CLINICAL, AND STUDENT TEACHING LABORATORIES

Introduction

Good laboratory practice dictates that laboratories working with biological agents and materials adopt standard work practices and procedures that are capable of protecting staff, students, and the surrounding community, and that meet the requirements of federal and state regulations. The information below is distilled from the Center for Disease Control, National Institutes of Health Publication, "*Biosafety in Microbiological and Biomedical Laboratories*" (BMBL) 5th Edition. Following is information on handling of Biological materials safely. Please note: *the STEM building does not support the use of biological materials above BSL-2.*

Biosafety Level 1 (BSL-1)

Biosafety Level 1 practices, safety equipment, and facility design and construction are appropriate for undergraduate and secondary educational training and teaching laboratories, and for other laboratories in which work is done with defined and characterized strains of viable microorganisms not known to consistently cause disease in healthy adult humans.

Bacillus subtilis, Nigeria gruberi, infectious canine hepatitis virus, and exempt organisms under the NIH Guidelines are representative of microorganisms meeting these criteria.

Many agents not ordinarily associated with disease processes in humans are, however, opportunistic pathogens and may cause infection in the young, the aged, and immunodeficient or immunosuppressed individuals. Vaccine strains that have undergone multiple in vivo passages should not be considered avirulent simply because they are vaccine strains. BSL-1 represents a basic level of containment that relies on standard microbiological practices with no special primary or secondary barriers recommended, other than a sink for hand washing.

Biosafety Level 2 (BSL-2)

Biosafety Level 2 practices, equipment, and facility design and construction are applicable to clinical, diagnostic, teaching, and other laboratories in which work is done with the broad spectrum of indigenous moderate-risk agents that are present in the community and associated with human disease of varying severity.

With good microbiological techniques, these agents can be used safely in activities conducted on the open bench, provided the potential for producing splashes or aerosols is low. Hepatitis B virus, HIV, the Salmonella, and Toxoplasma are representative of microorganisms assigned to this containment level. BSL-2 is appropriate when work is done with any human-derived blood, body fluids, tissues, or primary human cell lines where the presence of an infectious agent may be unknown.

Working with Human, Non-Human Primate and Other Mammalian Cells and Tissues

Although risk of laboratory infection from working with cell cultures in general is low, risk increases when working with human and other primate cells, and primary cells from other mammalian species. There are reports of infection of laboratory workers handling primary rhesus monkey kidney cells, and the bloodborne pathogen risks from working with primary human cells, tissues and body fluids are widely recognized.

Potential Laboratory Hazards

1. Potential laboratory hazards associated with human cells and tissues include the bloodborne pathogens HBV, HIV, HCV, HTLV, EBV, HPV and CMV as well as agents such as *Mycobacterium tuberculosis* that may be present in human lung tissue.
2. Other primate cells and tissues also present risks to laboratory workers.
3. Cells immortalized with viral agents such as SV-40, EBV adenovirus or HPV, as well as cells carrying viral genomic material also present potential hazards to laboratory workers.
4. Tumorigenic human cells also are potential hazards as a result of self-inoculation. There has been one reported case of development of a tumor from an accidental needle-stick.
5. Laboratory workers should never handle autologous cells or tissues.
6. NHP cells, blood, lymphoid and neural tissues should always be considered potentially hazardous.

Standard Microbiological Practices

1. The laboratory supervisor must enforce the institutional policies that control access to the laboratory.
2. All persons entering the laboratory must be advised of the potential hazards and meet specific entry/exit requirements.
    a. Personal health status may impact an individual's susceptibility to infection, ability to receive immunizations or prophylactic interventions. Therefore, all laboratory personnel and particularly women of childbearing age should be provided with information regarding immune competence and conditions that may predispose them to infection. Individuals having these conditions should be encouraged to self-identify to the institution's healthcare provider for appropriate counseling and guidance.
3. The laboratory supervisor must ensure that laboratory personnel receive appropriate training regarding their duties, the necessary precautions to prevent exposures, and exposure evaluation procedures. Personnel must receive annual updates or additional training when procedural or policy changes occur.

4. The laboratory supervisor must ensure that laboratory personnel demonstrate proficiency in standard and special microbiological practices before working with BSL-2 agents.
5. Laboratory personnel must be provided medical surveillance, as appropriate, and offered available immunizations for agents handled or potentially present in the laboratory.
6. Kean will evaluate the need for collection and storage of serum samples from at-risk personnel on a case-by-case basis.
7. Persons must wash their hands after working with potentially hazardous materials and before leaving the laboratory. Gloved hands are not to be used to touch common-area (i.e. non-lab) surfaces such as door handles, elevator buttons, tables.
8. Eating, drinking, smoking, handling contact lenses, applying cosmetics, and storing food for human consumption must not be permitted in laboratory areas. Food must be stored outside the laboratory area in cabinets or refrigerators designated and used for this purpose.
9. Mouth pipetting is prohibited; mechanical pipetting devices must be used.
10. Policies for the safe handling of sharps, such as needles, scalpels, pipettes, and broken glassware must be implemented. Whenever practical, laboratory supervisors should adopt improved engineering and work practice controls that reduce risk of sharps injuries. Precautions, including those listed below, must always be taken with sharp items. These include:
    a. Careful management of needles and other sharps are of primary importance. Needles must not be bent, sheared, broken, recapped, removed from disposable syringes, or otherwise manipulated by hand before disposal.
    b. Used disposable needles and syringes must be carefully placed in conveniently located puncture-resistant containers used for sharps disposal.
    c. Non-disposable sharps must be placed in a hard walled container for transport to a processing area for decontamination, preferably by autoclaving.
    d. Broken glassware must not be handled directly. Instead, it must be removed using a brush and dustpan, tongs, or forceps. Plastic ware should be substituted for glassware whenever possible.
    e. Perform all procedures to minimize the creation of splashes and/or aerosols.
11. Decontaminate work surfaces after completion of work and after any spill or splash of potentially infectious material with disinfectant (1-10% bleach or 70% alcohol).
12. Decontaminate all cultures, stocks, and other potentially infectious materials before disposal using an effective method.
    a. Depending on where the decontamination will be performed, the following methods should be used prior to transport: autoclaving at 121C for 30 minutes is ideal; liquid cultures may also be decontaminated by 25 minutes exposure to a 10% bleach solution. Materials to be decontaminated outside of the immediate laboratory must be placed in a durable, leak proof container and secured for transport.
13. Materials to be removed from the facility for decontamination must be packed in accordance with applicable local, state, and federal regulations.
14. A sign incorporating the universal biohazard symbol must be posted at the entrance to the laboratory when infectious agents are present. The sign may include the name of the agent(s) in use, and the name and phone number of the laboratory supervisor or other responsible personnel.

Requirements for Safety Equipment

1. Properly maintained biosafety cabinets, other appropriate personal protective equipment, or other physical containment devices must be used whenever:
    a. Procedures with a potential for creating infectious aerosols or splashes are conducted. These may include pipetting, centrifuging, grinding, blending, shaking, mixing, sonicating, opening containers of infectious materials, inoculating animals intranasally, and harvesting infected tissues from animals or eggs.
    b. High concentrations or large volumes of infectious agents are used.
    c. Such materials may be centrifuged in the open laboratory using sealed rotor heads or centrifuge safety cups.
2. Protective laboratory coats, gowns, smocks, or uniforms designated for laboratory use must be worn while working with hazardous materials.
3. Remove protective clothing and gloves before leaving the lab for non-laboratory areas, (e.g., cafeteria, library, and administrative offices). Dispose of protective clothing appropriately, or deposit it for laundering by the institution. It is recommended that laboratory clothing not be taken home.
4. Eye and face protection (goggles, mask, face shield or other splatter guard) is used for anticipated splashes or sprays of infectious or other hazardous materials when the microorganisms must be handled outside the BSC or containment device. Eye and face protection must be disposed of with other contaminated laboratory waste or decontaminated before reuse. Contact lenses are not recommended for lab use. Persons who wear contact lenses in laboratories must also wear eye protection.
5. Gloves must be worn to protect hands from exposure to hazardous materials. Glove selection should be based on an appropriate risk assessment. Alternatives to latex gloves should be available. Gloves must not be worn outside the laboratory. In addition, BSL-2 laboratory workers should:
    a. Change gloves when contaminated, glove integrity is compromised, or when otherwise necessary.
    b. Remove gloves and wash hands when work with hazardous materials has been completed and before leaving the laboratory.
    c. Do not wash or reuse disposable gloves. Dispose of used gloves with other contaminated laboratory waste. Hand washing protocols must be rigorously followed.
    d. Do not use gloves in the common (i.e. non-lab) areas where surfaces will be contaminated by materials present on gloved hands.
6. Vacuum lines should be protected with liquid disinfectant traps.
7. When transferring materials outside the laboratory, an enclosed secondary container must be used to minimize risk of spills or exposure. This includes liquids, cultures, gels, or any materials which contain cultures or materials from cultures.

Standard Operating Procedures for procedures involving risk to workers

1. Any class of material, culture of organisms, or laboratory procedure which poses a risk to laboratory workers must have a Standard Operating Procedure (SOP) in place explaining how the organism/material/procedure will be safely handled or performed. This includes any organism at the BSL-1 or BSL-2 level, as well as any chemical or procedure which may present a hazard.

2. SOPs must include:
   a. Possible hazards associated with handling of the organism/material/procedure.
   b. Best practices in minimizing exposure to the hazards.
   c. How the organism/material/procedure will be handled or performed safely in the laboratory.
   d. How the organism/material will be safely disposed of by the laboratory.
   e. Approval by the CSTM Safety Officer or an ILSE administrator, and agreement by the laboratory to abide by the SOP as approved. (A signature page or signature lines, as appropriate, will be adequate.)
   f. Inclusion of the SOP into the local copy of the Laboratory Safety Manual with easy access by workers.

MEDICAL WASTE MANAGEMENT

The Regulated Medical Wastes subchapter 3A (N.J.A.C. 7:26-3A.6) defines Regulated Medical Waste as solid waste that meets both the process definition and the classification definitions listed below.

Regulated Medical Waste (RWM) is any solid waste generated from one of the following processes: the diagnosis, treatment or immunization of humans or animals; research pertaining to the diagnosis, treatment or immunization of humans or animals; or the *production or testing of biologicals*. It must also belong to one of the classes listed below.

Class 1 - Cultures and Stocks

Cultures and stocks of infectious agents and associated biologicals, including: cultures from medical and pathological laboratories; cultures and stocks of infectious agents from research and industrial laboratories; wastes from the production of biologicals; discarded live and attenuated vaccines; and culture dishes and devices used to transfer, inoculate, and mix cultures. *i.e. anything that has been exposed to cell culture or microbiological specimens*.

Liquid Waste Disposal**:**

Laboratories will disinfect all liquid cultures and stocks before drain disposal. In general, the organisms in use at CSTM are susceptible to a 1% chlorine solution. In practice, this means that household bleach (a 5% solution of sodium hypochlorite) should be added to the liquid culture at the rate of 1 part bleach to 4 parts liquid to be disinfected. Mix by swirling. Wait at least 20 minutes, and then dispose of the liquid down the drain.

The lab may also disinfect liquids by autoclaving them at 121^{o}C for at least 30 minutes, followed by drain disposal.

Solid Waste Disposal:

Solid wastes should be placed in loosely sealed autoclave bags and autoclaved at 121^{o}C for at least 30 minutes. The autoclave bags can then be sealed and placed in the red bag waste (Regulated Medical Waste box) for disposal/incineration.

Class 2 - Pathological Wastes

Human pathological wastes, including tissues, organs, and body parts and body fluids that are removed during surgery or autopsy, or other medical procedures, and specimens of body fluids and their containers. These materials are not generally found on the Kean campus. Contact EHS for assistance in disposal.

Class 3 - Human Blood and Blood Products

Liquid waste human blood; blood; items saturated and/or dripping with human blood; or items that or items that were saturated and/or dripping with human blood that are now caked with dried human blood; including serum, plasma, and other blood components, and their containers, which were used or intended for use in either patient care, testing and laboratory analysis or the development of pharmaceuticals. Intravenous bags (only if they have come into contact with blood or other regulated body fluid), soft plastic pipettes and plastic blood vials are also included in this category.

Disposal: All materials that are dripping or saturated with human blood or other body fluids shall be placed in red bag waste. Notify EHS for assistance with disposal.

Class 4 – Sharps

Sharps that were used in animal or human patient care or treatment or in medical research, or industrial laboratories, including sharp, or potentially sharp if broken, items such as, but not limited to, hypodermic needles, all syringes to which a needle can be attached (with or without the attached needle) and their components, including those from manufacturing research, manufacturing and marketing, pasteur pipettes, scalpel blades, blood vials, glass capsules, needles with attached tubing, and glass culture dishes (regardless of presence of infectious agents). Also included are other types of broken or unbroken glassware that were in contact with infectious agents, such as used slides and cover slips.

Disposal: All sharps, including syringes, needles, razor and scalpel blades, and microscope slides and slips must be discarded into red hard plastic biohazard containers ("sharps" containers). This is required even if the sharp is unused. Also, pipettes, pipette tips, culture dishes, as well as other glass or plastic items that have been exposed to potentially infectious biological materials must also be placed in a Biohazardous Sharps container for treatment and disposal.

Class 5 - Animal Waste/Carcasses

Contaminated animal carcasses, body parts, and bedding of animals that were known to have been exposed to infectious agents during research (including research in veterinary hospitals), production of biologicals, or testing of pharmaceuticals.

Disposal: Preserved carcasses should be double-bagged, and placed in STEM 1-26 for disposal. Preserved carcasses should be disposed of as hazardous waste. Non-preserved carcasses should be double-bagged and frozen prior to disposal. A designated Medical Waste disposal contractor will dispose of non-preserved carcasses as classified medical waste.

Class 6 - Isolation Wastes

Biological waste and discarded materials contaminated with blood, excretion, exudates, or secretions from humans who are isolated to protect others from certain highly communicable diseases, or isolated animals known to be infected with highly communicable diseases. There should be none of this type of waste in the CSTM facility.

Class 7 - Unused Sharps

The following unused, discarded sharps that were intended to be used: hypodermic needles, suture needles, syringes, and scalpel blades.

Disposal: All sharps, including syringes, needles, razor and scalpel blades, and microscope slides and slips must be discarded into red plastic biohazard containers ("sharps" containers). This is required even if the sharp is unused. Also, pipettes, pipette tips, culture dishes, as well as other glass or plastic items that have been exposed to potentially infectious biological materials must also be placed in a sharps container for disposal.

Laboratory glass that was not exposed to cultures or pathogens may be placed in "Clean Broken Glass" disposal boxes.

Container Handling Procedures

Containers of medical waste shall be:

- Maintained upright throughout use; and
- Replaced routinely and not be allowed to overfill.

When moving containers of contaminated sharps from the area of use, the containers shall be:

- Closed immediately prior to removal or replacement to prevent spillage or protrusion of contents during handling, storage, transport, or shipping;
- Placed in a secondary container if leakage is possible. The second container shall be:
    - Closable;
    - Constructed to contain all contents and prevent leakage during handling, storage, transport, or shipping; and
    - Labeled or color-coded according.
- Reusable containers shall not be opened, emptied, or cleaned manually or in any other manner which would expose employees to the risk of percutaneous injury.

Storage Areas for Medical Waste

The CSTM Safety Office will monitor storage of medical waste in the tenant laboratories and recommend when waste must be disposed of. Disposal contractors will be engaged by the tenant and a schedule determined for regular pickup of medical waste, or arrangements can be made for disposal using ILSE's disposal company.

DEFINITIONS AND ABBREVIATIONS

BBP means bloodborne pathogen(s)

Blood means human blood, human blood components, & products made from human blood.

Bloodborne Pathogens means 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).

Clinical Laboratory means a workplace where diagnostic or other screening procedures are performed on blood or other potentially infectious materials.

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

Contaminated Laundry means laundry which has been soiled with blood or other potentially infectious materials or may contain sharps.

Contaminated Sharps means any contaminated object that can penetrate the skin including, but not limited to, needles, scalpels, broken glass, broken capillary tubes, and exposed ends of dental wires.

CPR means Cardio-Pulmonary Resuscitation

Decontamination means the 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.

ECP means Exposure Control Plan

EHS means the Office of Environmental Safety and Health at Kean University

Engineering Controls means controls (e.g., sharps disposal containers, self-sheathing needles, safer medical devices, such as sharps with engineered sharps injury protections and needleless systems) that isolate or remove the bloodborne pathogens hazard from the workplace.

Exposure Incident means 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.

FCP means the Office of Facilities and Campus Planning at Kean University

Handwashing Facilities means a facility providing an adequate supply of running potable water, soap, and single-use towels or air-drying machines.

HB means Hepatitis B.

HBV means hepatitis B virus.

HCP means Health Care Provider

HIV means human immunodeficiency virus.

Licensed Healthcare Professional is a person whose legally permitted scope of practice allows him or her to independently perform the activities required by paragraph (f) Hepatitis B Vaccination and Post-exposure Evaluation and Follow-up.

Needleless systems means a device that does not use needles for:

(1) The collection of bodily fluids or withdrawal of body fluids after initial venous or arterial access is established; (2) The administration of medication or fluids; or (3) Any other procedure involving the potential for occupational exposure to bloodborne pathogens due to percutaneous injuries from contaminated sharps.

NIOSH means the National Institute for Occupational Safety and Health

Occupational Exposure means 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.

OPIM see **"**Other Potentially Infectious Materials"

Other Potentially Infectious Materials **(OPIM)** means (1) The following human body fluids: semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, 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); and (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.

Parenteral means piercing mucous membranes or the skin barrier through such events as needlesticks, human bites, cuts, and abrasions.

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

PPE see *"*Personal Protective Equipment *"*

Red Bag means a red plastic bag that is used for the disposal of 'non-sharp' and potentially infectious biohazardous waste.

Regulated Medical Waste **(RMW)** means 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 that 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 means a laboratory producing or using research-laboratory-scale amounts of HIV or HBV. Research laboratories may produce high concentrations of HIV or HBV but not in the volume found in production facilities.

RMW see "Regulated Medical Waste"

Sharps with engineered sharps injury protections means 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 an exposure incident.

Source Individual means any individual, living or dead, whose blood or other potentially infectious materials may be a source of occupational exposure to the employee. Examples include, but are not limited to, hospital and clinic patients; clients in institutions for the developmentally disabled; trauma victims; clients of drug and alcohol treatment facilities; residents of hospices and nursing homes; human remains; and individuals who donate or sell blood or blood components.

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

Universal Precautions is an approach to infection control. According to the concept of Universal Precautions, all human blood and certain human body fluids are treated as if known to be infectious for HIV, HBV, and other bloodborne pathogens.

Work Practice Controls means controls that reduce the likelihood of exposure by altering the manner in which a task is performed (e.g., prohibiting recapping of needles by a two-handed technique).

FULL TEXT OF 29 CFR 1910.1030 BLOODBORNE PATHOGENS

(a) **Scope and Application**. This section applies to all occupational exposure to blood or other potentially infectious materials as defined by paragraph (b) of this section.

(b) **Definitions**. For purposes of this section, the following shall apply:

Assistant Secretary means the Assistant Secretary of Labor for Occupational Safety and Health, or designated representative.

Blood means human blood, human blood components, and products made from human blood.

Bloodborne Pathogens means 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).

Clinical Laboratory means a workplace where diagnostic or other screening procedures are performed on blood or other potentially infectious materials.

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

Contaminated Laundry means laundry which has been soiled with blood or other potentially infectious materials or may contain sharps.

Contaminated Sharps means any contaminated object that can penetrate the skin including, but not limited to, needles, scalpels, broken glass, broken capillary tubes, and exposed ends of dental wires.

Decontamination means the 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.

Director means the Director of the National Institute for Occupational Safety and Health, U.S. Department of Health and Human Services, or designated representative.

Engineering Controls means controls (e.g., sharps disposal containers, self-sheathing needles, safer medical devices, such as sharps with engineered sharps injury protections and needleless systems) that isolate or remove the bloodborne pathogens hazard from the workplace.

Exposure Incident means 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.

Handwashing Facilities means a facility providing an adequate supply of running potable water, soap and single use towels or hot air drying machines.

Licensed Healthcare Professional is a person whose legally permitted scope of practice allows him or her to independently perform the activities required by paragraph (f) Hepatitis B Vaccination and Post-exposure Evaluation and Follow-up.

HBV means hepatitis B virus.

HIV means human immunodeficiency virus.

Needleless Systems means a device that does not use needles for (1) the collection of bodily fluids or withdrawal of body fluids after initial venous or arterial access is established; (2) the administration of medication or fluids; or (3) any other procedure involving the potential for occupational exposure to bloodborne pathogens due to percutaneous injuries from contaminated sharps.

Occupational Exposure means 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.

Other Potentially Infectious Materials means (1) The following human body fluids: semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, 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); and (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.

Parenteral means piercing mucous membranes or the skin barrier through such events as needlesticks, human bites, cuts, and abrasions.

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

Production Facility means a facility engaged in industrial-scale, large-volume or high concentration production of HIV or HBV.

Regulated Waste means 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 that 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 means a laboratory producing or using research-laboratory-scale amounts of HIV or HBV. Research laboratories may produce high concentrations of HIV or HBV but not in the volume found in production facilities.

Sharps with Engineered Sharps Injury Protections means a nonneedle 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 an exposure incident.

Source Individual means any individual, living or dead, whose blood or other potentially infectious materials may be a source of occupational exposure to the employee. Examples include, but are not limited to, hospital and clinic patients; clients in institutions for the developmentally disabled; trauma victims; clients of drug and alcohol treatment facilities; residents of hospices and nursing homes; human remains; and individuals who donate or sell blood or blood components.

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

Universal Precautions is an approach to infection control. According to the concept of Universal Precautions, all human blood and certain human body fluids are treated as if known to be infectious for HIV, HBV, and other bloodborne pathogens.

Work Practice Controls means controls that reduce the likelihood of exposure by altering the manner in which a task is performed (e.g., prohibiting recapping of needles by a two-handed technique).

(c) **Exposure Control -**

(c)(1) **Exposure Control Plan**.

(c)(1)(i) Each employer having an employee(s) with occupational exposure as defined by paragraph (b) of this section shall establish a written Exposure Control Plan designed to eliminate or minimize employee exposure.

(c)(1)(ii) The Exposure Control Plan shall contain at least the following elements:

(c)(1)(ii)(A) The exposure determination required by paragraph (c)(2),

(c)(1)(ii)(B) The schedule and method of implementation for paragraphs (d) Methods of Compliance, (e) HIV and HBV Research Laboratories and Production Facilities, (f) Hepatitis B Vaccination and Post-Exposure Evaluation and Follow-up, (g) Communication of Hazards to Employees, and (h) Recordkeeping, of this standard, and

(c)(1)(ii)(C) The procedure for the evaluation of circumstances surrounding exposure incidents as required by paragraph (f)(3)(i) of this standard.

(c)(1)(iii) Each employer shall ensure that a copy of the Exposure Control Plan is accessible to employees in accordance with 29 CFR 1910.1020(e).

(c)(1)(iv) The Exposure Control Plan shall be reviewed and updated at least annually and whenever necessary to reflect new or modified tasks and procedures which affect occupational exposure and to reflect new or revised employee positions with occupational exposure. The review and update of such plans shall also:

(c)(1)(iv)(A) reflect changes in technology that eliminate or reduce exposure to bloodborne pathogens; and

(c)(1)(iv)(B) document annually consideration and implementation of appropriate commercially available and effective safer medical devices designed to eliminate or minimize occupational exposure.

(c)(1)(v) An employer, who is required to establish an Exposure Control Plan shall solicit input from non-managerial employees responsible for direct patient care who are potentially exposed to injuries from contaminated sharps in the identification, evaluation, and selection of effective engineering and work practice controls and shall document the solicitation in the Exposure Control Plan.

(c)(1)(vi) The Exposure Control Plan shall be made available to the Assistant Secretary and the Director upon request for examination and copying.

(c)(2) **Exposure Determination**.

(c)(2)(i) Each employer who has an employee(s) with occupational exposure as defined by paragraph (b) of this section shall prepare an exposure determination. This exposure determination shall contain the following:

(c)(2)(i)(A) A list of all job classifications in which all employees in those job classifications have occupational exposure;

(c)(2)(i)(B) A list of job classifications in which some employees have occupational exposure, and

(c)(2)(i)(C) A list of all tasks and procedures or groups of closely related task and procedures in which occupational exposure occurs and that are performed by employees in job classifications listed in accordance with the provisions of paragraph (c)(2)(i)(B) of this standard.

(c)(2)(ii) This exposure determination shall be made without regard to the use of personal protective equipment.

(d) **Methods of Compliance -**

(d)(1) **General**. Universal precautions shall be 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 shall be considered potentially infectious materials.

(d)(2) **Engineering and Work Practice Controls**.

(d)(2)(i) Engineering and work practice controls shall be used to eliminate or minimize employee exposure. Where occupational exposure remains after institution of these controls, personal protective equipment shall also be used.

(d)(2)(ii) Engineering controls shall be examined and maintained or replaced on a regular schedule to ensure their effectiveness.

(d)(2)(iii) Employers shall provide handwashing facilities which are readily accessible to employees.

(d)(2)(iv) When provision of handwashing facilities is not feasible, the employer shall provide either an appropriate antiseptic hand cleanser in conjunction with clean cloth/paper towels or antiseptic towelettes. When antiseptic hand cleansers or towelettes are used, hands shall be washed with soap and running water as soon as feasible.

(d)(2)(v) Employers shall ensure that employees wash their hands immediately or as soon as feasible after removal of gloves or other personal protective equipment.

(d)(2)(vi) Employers shall ensure that employees wash hands and any other skin with soap and water, or flush mucous membranes with water immediately or as soon as feasible following contact of such body areas with blood or other potentially infectious materials.

(d)(2)(vii) Contaminated needles and other contaminated sharps shall not be bent, recapped, or removed except as noted in paragraphs (d)(2)(vii)(A) and (d)(2)(vii)(B) below. Shearing or breaking of contaminated needles is prohibited.

(d)(2)(vii)(A) Contaminated needles and other contaminated sharps shall not be bent, recapped or removed unless the employer can demonstrate that no alternative is feasible or that such action is required by a specific medical or dental procedure.

(d)(2)(vii)(B) Such bending, recapping or needle removal must be accomplished through the use of a mechanical device or a one-handed technique.

(d)(2)(viii) Immediately or as soon as possible after use, contaminated reusable sharps shall be placed in appropriate containers until properly reprocessed. These containers shall be:

(d)(2)(viii)(A) puncture resistant;

(d)(2)(viii)(B) labeled or color-coded in accordance with this standard;

(d)(2)(viii)(C) leakproof on the sides and bottom; and

(d)(2)(viii)(D) in accordance with the requirements set forth in paragraph (d)(4)(ii)(E) for

reusable sharps.

(d)(2)(ix) Eating, drinking, smoking, applying cosmetics or lip balm, and handling contact lenses are prohibited in work areas where there is a reasonable likelihood of occupational exposure.

(d)(2)(x) Food and drink shall not be kept in refrigerators, freezers, shelves, cabinets or on countertops or benchtops where blood or other potentially infectious materials are present.

(d)(2)(xi) All procedures involving blood or other potentially infectious materials shall be performed in such a manner as to minimize splashing, spraying, spattering, and generation of droplets of these substances.

(d)(2)(xii) Mouth pipetting/suctioning of blood or other potentially infectious materials is prohibited.

(d)(2)(xiii) Specimens of blood or other potentially infectious materials shall be placed in a container which prevents leakage during collection, handling, processing, storage, transport, or shipping.

(d)(2)(xiii)(A) The container for storage, transport, or shipping shall be labeled or color-coded according to paragraph (g)(1)(i) and closed prior to being stored, transported, or shipped. When a facility utilizes Universal Precautions in the handling of all specimens, the labeling/color-coding of specimens is not necessary provided containers are recognizable as containing specimens. This exemption only applies while such specimens/containers remain within the facility. Labeling or color-coding in accordance with paragraph (g)(1)(i) is required when such specimens/containers leave the facility.

(d)(2)(xiii)(B) If outside contamination of the primary container occurs, the primary container shall be placed within a second container which prevents leakage during handling, processing, storage, transport, or shipping and is labeled or color-coded according to the requirements of this standard.

(d)(2)(xiii)(C) If the specimen could puncture the primary container, the primary container shall be placed within a secondary container which is puncture-resistant in addition to the above characteristics.

(d)(2)(xiv) Equipment which may become contaminated with blood or other potentially infectious materials shall be examined prior to servicing or shipping and shall be decontaminated as necessary, unless the employer can demonstrate that decontamination of such equipment or portions of such equipment is not feasible.

(d)(2)(xiv)(A) A readily observable label in accordance with paragraph (g)(1)(i)(H) shall be attached to the equipment stating which portions remain contaminated.

(d)(2)(xiv)(B) The employer shall ensure that 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 will be taken.

(d)(3) **Personal Protective Equipment -**

(d)(3)(i) **Provision**. When there is occupational exposure, the employer shall provide, at no cost to the employee, appropriate personal protective equipment such as, but not limited to, gloves, gowns, laboratory coats, face shields or masks and eye protection, and mouthpieces, resuscitation bags, pocket masks, or other ventilation devices. Personal protective equipment will be considered "appropriate" only if it does not permit blood or other potentially infectious materials to pass through to or reach the employee's work clothes, street clothes, undergarments, skin, eyes, mouth, or other mucous membranes under normal conditions of use and for the duration of time which the protective equipment will be used.

(d)(3)(ii) **Use**. The employer shall ensure that the employee uses appropriate personal protective equipment unless the employer shows that the employee temporarily and briefly declined to use personal protective equipment when, under rare and extraordinary circumstances, it was the employee's professional judgment that in the specific instance its use would have prevented the delivery of health care or public safety services or would have posed an increased hazard to the safety of the worker or co-worker. When the employee makes this judgement, the circumstances shall be investigated and documented in order to determine whether changes can be instituted to prevent such occurrences in the future.

(d)(3)(iii) **Accessibility**. The employer shall ensure that appropriate personal protective equipment in the appropriate sizes is readily accessible at the worksite or is issued to employees. Hypoallergenic gloves, glove liners, powderless gloves, or other similar alternatives shall be readily accessible to those employees who are allergic to the gloves normally provided.

(d)(3)(iv) **Cleaning, Laundering, and Disposal**. The employer shall clean, launder, and dispose of personal protective equipment required by paragraphs (d) and (e) of this standard, at no cost to the employee.

(d)(3)(v) **Repair and Replacement**. The employer shall repair or replace personal protective equipment as needed to maintain its effectiveness, at no cost to the employee.

(d)(3)(vi) If a garment(s) is penetrated by blood or other potentially infectious materials, the garment(s) shall be removed immediately or as soon as feasible.

(d)(3)(vii) All personal protective equipment shall be removed prior to leaving the work area.

(d)(3)(viii) When personal protective equipment is removed it shall be placed in an appropriately designated area or container for storage, washing, decontamination or disposal.

(d)(3)(ix) **Gloves**. Gloves shall be 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 except as specified in paragraph (d)(3)(ix)(D); and when handling or touching contaminated items or

surfaces.

(d)(3)(ix)(A) Disposable (single use) gloves such as surgical or examination gloves, shall be replaced as soon as practical when contaminated or as soon as feasible if they are torn, punctured, or when their ability to function as a barrier is compromised.

(d)(3)(ix)(B) Disposable (single use) gloves shall not be washed or decontaminated for re-use.

(d)(3)(ix)(C) Utility gloves may be decontaminated for re-use if the integrity of the glove is not compromised. However, they must be discarded if they are cracked, peeling, torn, punctured, or exhibit other signs of deterioration or when their ability to function as a barrier is compromised.

(d)(3)(ix)(D) If an employer in a volunteer blood donation center judges that routine gloving for all phlebotomies is not necessary then the employer shall:

(d)(3)(ix)(D)(**1**) Periodically reevaluate this policy;

(d)(3)(ix)(D)(**2**) Make gloves available to all employees who wish to use them for phlebotomy;

(d)(3)(ix)(D)(**3**) Not discourage the use of gloves for phlebotomy; and

(d)(3)(ix)(D)(**4**) Require that gloves be used for phlebotomy in the following circumstances:

(d)(3)(ix)(D)(**4**)(**i**) When the employee has cuts, scratches, or other breaks in his or her skin;

(d)(3)(ix)(D)(**4**)(**ii**) When the employee judges that hand contamination with blood may occur, for example, when performing phlebotomy on an uncooperative source individual; and

(d)(3)(ix)(D)(**4**)(**iii**) When the employee is receiving training in phlebotomy.

(d)(3)(x) **Masks, Eye Protection, and Face Shields**. Masks in combination with eye protection devices, such as goggles or glasses with solid side shields, or chin-length face shields, shall be 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.

(d)(3)(xi) **Gowns, Aprons, and Other Protective Body Clothing**. Appropriate protective clothing such as, but not limited to, gowns, aprons, lab coats, clinic jackets, or similar outer garments shall be worn in occupational exposure situations. The type and characteristics will depend upon the task and degree of exposure anticipated.

(d)(3)(xii) Surgical caps or hoods and/or shoe covers or boots shall be worn in instances when gross contamination can reasonably be anticipated (e.g., autopsies, orthopaedic surgery).

(d)(4) **Housekeeping -**

(d)(4)(i) **General**. Employers shall ensure that the worksite is maintained in a clean and sanitary condition. The employer shall determine and implement an appropriate written schedule for cleaning and method of decontamination 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.

(d)(4)(ii) All equipment and environmental and working surfaces shall be cleaned and decontaminated after contact with blood or other potentially infectious materials.

(d)(4)(ii)(A) Contaminated work surfaces shall 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 shift if the surface may have become contaminated since the last cleaning.

(d)(4)(ii)(B) Protective coverings, such as plastic wrap, aluminum foil, or imperviously-backed absorbent paper used to cover equipment and environmental surfaces, shall be removed and replaced as soon as feasible when they become overtly contaminated or at the end of the workshift if they may have become contaminated during the shift.

(d)(4)(ii)(C) All bins, pails, cans, and similar receptacles intended for reuse which have a reasonable likelihood for becoming contaminated with blood or other potentially infectious materials shall be inspected and decontaminated on a regularly scheduled basis and cleaned and decontaminated immediately or as soon as feasible upon visible contamination.

(d)(4)(ii)(D) Broken glassware which may be contaminated shall not be picked up directly with the hands. It shall be cleaned up using mechanical means, such as a brush and dust pan, tongs, or forceps.

(d)(4)(ii)(E) Reusable sharps that are contaminated with blood or other potentially infectious materials shall not be stored or processed in a manner that requires employees to reach by hand into the containers where these sharps have been placed.

(d)(4)(iii) **Regulated Waste---**

(d)(4)(iii)(A) **Contaminated Sharps Discarding and Containment**.

(d)(4)(iii)(A)(**1**) Contaminated sharps shall be discarded immediately or as soon as feasible in containers that are:

(d)(4)(iii)(A)(**1**)(**i**) Closable;

(d)(4)(iii)(A)(**1**)(**ii**) Puncture resistant;

(d)(4)(iii)(A)(**1**)(**iii**) Leakproof on sides and bottom; and

(d)(4)(iii)(A)(**1**)(**iv**) Labeled or color-coded in accordance with paragraph (g)(1)(i) of this standard.

(d)(4)(iii)(A)(**2**) During use, containers for contaminated sharps shall be:

(d)(4)(iii)(A)(**2**)(**i**) Easily accessible to personnel and located as close as is feasible to the immediate area where sharps are used or can be reasonably anticipated to be found (e.g., laundries);

(d)(4)(iii)(A)(**2**)(**ii**) Maintained upright throughout use; and

(d)(4)(iii)(A)(**2**)(**iii**) Replaced routinely and not be allowed to overfill.

(d)(4)(iii)(A)(**3**) When moving containers of contaminated sharps from the area of use, the containers shall be:

(d)(4)(iii)(A)(**3**)(**i**) Closed immediately prior to removal or replacement to prevent spillage or protrusion of contents during handling, storage, transport, or shipping;

(d)(4)(iii)(A)(**3**)(**ii**) Placed in a secondary container if leakage is possible. The second container shall be:

(d)(4)(iii)(A)(**3**)(**ii**)(**A**) Closable;

(d)(4)(iii)(A)(**3**)(**ii**)(**B**) Constructed to contain all contents and prevent leakage during handling, storage, transport, or shipping; and

(d)(4)(iii)(A)(**3**)(**ii**)(**C**) Labeled or color-coded according to paragraph (g)(1)(i) of this standard.

(d)(4)(iii)(A)(**4**) Reusable containers shall not be opened, emptied, or cleaned manually or in any other manner which would expose employees to the risk of percutaneous injury.

(d)(4)(iii)(B) **Other Regulated Waste Containment** -

(d)(4)(iii)(B)(1) Regulated waste shall be placed in containers which are:

(d)(4)(iii)(B)(1)(**i**) Closable;

(d)(4)(iii)(B)(1)(**ii**) Constructed to contain all contents and prevent leakage of fluids during handling, storage, transport or shipping;

(d)(4)(iii)(B)(1)(**iii**) Labeled or color-coded in accordance with paragraph (g)(1)(i) this standard; and

(d)(4)(iii)(B)(1)(**iv**) Closed prior to removal to prevent spillage or protrusion of contents during handling, storage, transport, or shipping.

(d)(4)(iii)(B)(**2**) If outside contamination of the regulated waste container occurs, it shall be placed in a second container. The second container shall be:

(d)(4)(iii)(B)(**2**)(**i**) Closable;

(d)(4)(iii)(B)(**2**)(**ii**) Constructed to contain all contents and prevent leakage of fluids during handling, storage, transport or shipping;

(d)(4)(iii)(B)(**2**)(**iii**) Labeled or color-coded in accordance with paragraph (g)(1)(i) of this standard; and

(d)(4)(iii)(B)(**2**)(**iv**) Closed prior to removal to prevent spillage or protrusion of contents during handling, storage, transport, or shipping.

(d)(4)(iii)(C) Disposal of all regulated waste shall be in accordance with applicable regulations of the United States, States and Territories, and political subdivisions of States and Territories.

(d)(4)(iv) **Laundry**.

(d)(4)(iv)(A) Contaminated laundry shall be handled as little as possible with a minimum of agitation.

(d)(4)(iv)(A)(1) Contaminated laundry shall be bagged or containerized at the location where it was used and shall not be sorted or rinsed in the location of use.

(d)(4)(iv)(A)(2) Contaminated laundry shall be placed and transported in bags or containers labeled or color-coded in accordance with paragraph (g)(1)(i) of this standard. When a facility utilizes Universal Precautions in the handling of all soiled laundry, alternative labeling or color-coding is sufficient if it permits all employees to recognize the containers as requiring compliance with Universal Precautions.

(d)(4)(iv)(A)(3) Whenever contaminated laundry is wet and presents a reasonable likelihood of soak-through of or leakage from the bag or container, the laundry shall be placed and transported in bags or containers which prevent soak-through and/or leakage of fluids to the exterior.

(d)(4)(iv)(B) The employer shall ensure that employees who have contact with contaminated laundry wear protective gloves and other appropriate personal protective equipment.

(d)(4)(iv)(C) When a facility ships contaminated laundry off-site to a second facility which does not utilize Universal Precautions in the handling of all laundry, the facility generating the contaminated laundry must place such laundry in bags or containers which are labeled or color-coded in accordance with paragraph (g)(1)(i).

(e) **HIV and HBV Research Laboratories and Production Facilities**.

(e)(1) This paragraph applies to research laboratories and production facilities engaged in the culture, production, concentration, experimentation, and manipulation of HIV and HBV. It does not apply to clinical or diagnostic laboratories engaged solely in the analysis of blood, tissues, or organs. These requirements apply in addition to the other requirements of the standard.

(e)(2) Research laboratories and production facilities shall meet the following criteria:

(e)(2)(i) **Standard Microbiological Practices**. All regulated waste shall either be incinerated or decontaminated by a method such as autoclaving known to effectively destroy bloodborne pathogens.

(e)(2)(ii) **Special Practices**.

(e)(2)(ii)(A) Laboratory doors shall be kept closed when work involving HIV or HBV is in progress.

(e)(2)(ii)(B) Contaminated materials that are to be decontaminated at a site away from the work area shall be placed in a durable, leakproof, labeled or color-coded container that is closed before being removed from the work area.

(e)(2)(ii)(C) Access to the work area shall be limited to authorized persons. Written policies and procedures shall be established whereby only persons who have been advised of the potential biohazard, who meet any specific entry requirements, and who comply with all entry and exit procedures shall be allowed to enter the work areas and animal rooms.

(e)(2)(ii)(D) When other potentially infectious materials or infected animals are present in the work area or containment module, a hazard warning sign incorporating the universal biohazard symbol shall be posted on all access doors. The hazard warning sign shall comply with paragraph (g)(1)(ii) of this standard.

(e)(2)(ii)(E) All activities involving other potentially infectious materials shall be conducted in biological safety cabinets or other physical-containment devices within the containment module. No work with these other potentially infectious materials shall be conducted on the open bench.

(e)(2)(ii)(F) Laboratory coats, gowns, smocks, uniforms, or other appropriate protective clothing shall be used in the work area and animal rooms. Protective clothing shall not be worn outside of the work area and shall be decontaminated before being laundered.

(e)(2)(ii)(G) Special care shall be taken to avoid skin contact with other potentially infectious materials. Gloves shall be worn when handling infected animals and when making hand contact with other potentially infectious materials is unavoidable.

(e)(2)(ii)(H) Before disposal all waste from work areas and from animal rooms shall either be incinerated or decontaminated by a method such as autoclaving known to effectively destroy bloodborne pathogens.

(e)(2)(ii)(I) Vacuum lines shall be protected with liquid disinfectant traps and high-efficiency particulate air (HEPA) filters or filters of equivalent or superior efficiency and which are checked routinely and maintained or replaced as necessary.

(e)(2)(ii)(J) Hypodermic needles and syringes shall be used only for parenteral injection and aspiration of fluids from laboratory animals and diaphragm bottles. Only needle-locking syringes or disposable syringe-needle units (i.e., the needle is integral to the syringe) shall be used for the injection or aspiration of other potentially infectious materials. Extreme caution shall be used when handling needles and syringes. A needle shall not be bent, sheared, replaced in the sheath or guard, or removed from the syringe following use. The needle and syringe shall be promptly placed in a puncture-resistant container and autoclaved or decontaminated before reuse or disposal.

(e)(2)(ii)(K) All spills shall be immediately contained and cleaned up by appropriate professional staff or others properly trained and equipped to work with potentially concentrated infectious materials.

(e)(2)(ii)(L) A spill or accident that results in an exposure incident shall be immediately reported to the laboratory director or other responsible person.

(e)(2)(ii)(M) A biosafety manual shall be prepared or adopted and periodically reviewed and updated at least annually or more often if necessary. Personnel shall be advised of potential hazards, shall be required to read instructions on practices and procedures, and shall be required to follow them.

(e)(2)(iii) **Containment Equipment**.

(e)(2)(iii)(A) Certified biological safety cabinets (Class I, II, or III) or other appropriate combinations of personal protection or physical containment devices, such as special protective clothing, respirators, centrifuge safety cups, sealed centrifuge rotors, and containment caging for animals, shall be used for all activities with other potentially infectious materials that pose a threat of exposure to droplets, splashes, spills, or aerosols.

(e)(2)(iii)(B) Biological safety cabinets shall be certified when installed, whenever they are moved and at least annually.

(e)(3) HIV and HBV research laboratories shall meet the following criteria:

(e)(3)(i) Each laboratory shall contain a facility for hand washing and an eye wash facility which is readily available within the work area.

(e)(3)(ii) An autoclave for decontamination of regulated waste shall be available.

(e)(4) HIV and HBV production facilities shall meet the following criteria:

(e)(4)(i) The work areas shall be separated from areas that are open to unrestricted traffic flow within the building. Passage through two sets of doors shall be the basic requirement for entry into the work area from access corridors or other contiguous areas. Physical

separation of the high-containment work area from access corridors or other areas or activities may also be provided by a double-doored clothes-change room (showers may be included), airlock, or other access facility that requires passing through two sets of doors before entering the work area.

(e)(4)(ii) The surfaces of doors, walls, floors and ceilings in the work area shall be water resistant so that they can be easily cleaned. Penetrations in these surfaces shall be sealed or capable of being sealed to facilitate decontamination.

(e)(4)(iii) Each work area shall contain a sink for washing hands and a readily available eye wash facility. The sink shall be foot, elbow, or automatically operated and shall be located near the exit door of the work area.

(e)(4)(iv) Access doors to the work area or containment module shall be self-closing.

(e)(4)(v) An autoclave for decontamination of regulated waste shall be available within or as near as possible to the work area.

(e)(4)(vi) A ducted exhaust-air ventilation system shall be provided. This system shall create directional airflow that draws air into the work area through the entry area. The exhaust air shall not be recirculated to any other area of the building, shall be discharged to the outside, and shall be dispersed away from occupied areas and air intakes. The proper direction of the airflow shall be verified (i.e., into the work area).

(e)(5) **Training Requirements**. Additional training requirements for employees in HIV and HBV research laboratories and HIV and HBV production facilities are specified in paragraph (g)(2)(ix).

(f) **Hepatitis B Vaccination and Post-exposure Evaluation and Follow-up -**

(f)(1) **General**.

(f)(1)(i) The employer shall make 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.

(f)(1)(ii) The employer shall ensure that all medical evaluations and procedures including the hepatitis B vaccine and vaccination series and post-exposure evaluation and follow-up, including prophylaxis, are:

(f)(1)(ii)(A) Made available at no cost to the employee;

(f)(1)(ii)(B) Made available to the employee at a reasonable time and place;

(f)(1)(ii)(C) Performed by or under the supervision of a licensed physician or by or under the supervision of another licensed healthcare professional; and

(f)(1)(ii)(D) Provided according to recommendations of the U.S. Public Health Service

current at the time these evaluations and procedures take place, except as specified by this paragraph (f).

(f)(1)(iii) The employer shall ensure that all laboratory tests are conducted by an accredited laboratory at no cost to the employee.

(f)(2) **Hepatitis B Vaccination**.

(f)(2)(i) Hepatitis B vaccination shall be made available after the employee has received the training required in paragraph (g)(2)(vii)(I) and within 10 working days of initial assignment to all employees who have occupational exposure unless the employee has previously received the complete hepatitis B vaccination series, antibody testing has revealed that the employee is immune, or the vaccine is contraindicated for medical reasons.

(f)(2)(ii) The employer shall not make participation in a prescreening program a prerequisite for receiving hepatitis B vaccination.

(f)(2)(iii) If the employee initially declines hepatitis B vaccination but at a later date while still covered under the standard decides to accept the vaccination, the employer shall make available hepatitis B vaccination at that time.

(f)(2)(iv) The employer shall assure that employees who decline to accept hepatitis B vaccination offered by the employer sign the statement in Appendix A.

(f)(2)(v) If a routine booster dose(s) of hepatitis B vaccine is recommended by the U.S. Public Health Service at a future date, such booster dose(s) shall be made available in accordance with section (f)(1)(ii).

(f)(3) **Post-exposure Evaluation and Follow-up**. Following a report of an exposure incident, the employer shall make immediately available to the exposed employee a confidential medical evaluation and follow-up, including at least the following elements:

(f)(3)(i) Documentation of the route(s) of exposure, and the circumstances under which the exposure incident occurred;

(f)(3)(ii) Identification and documentation of the source individual, unless the employer can establish that identification is infeasible or prohibited by state or local law;

(f)(3)(ii)(A) The source individual's blood shall be tested as soon as feasible and after consent is obtained in order to determine HBV and HIV infectivity. If consent is not obtained, the employer shall establish that legally required consent cannot be obtained. When the source individual's consent is not required by law, the source individual's blood, if available, shall be tested and the results documented.

(f)(3)(ii)(B) When the source individual is already known to be infected with HBV or HIV, testing for the source individual's known HBV or HIV status need not be repeated.

(f)(3)(ii)(C) Results of the source individual's testing shall be made available to the exposed

employee, and the employee shall be informed of applicable laws and regulations concerning disclosure of the identity and infectious status of the source individual.

(f)(3)(iii) Collection and testing of blood for HBV and HIV serological status;

(f)(3)(iii)(A) The exposed employee's blood shall be collected as soon as feasible and tested after consent is obtained.

(f)(3)(iii)(B) If the employee consents to baseline blood collection, but does not give consent at that time for HIV serologic testing, the sample shall be preserved for at least 90 days. If, within 90 days of the exposure incident, the employee elects to have the baseline sample tested, such testing shall be done as soon as feasible.

(f)(3)(iv) Post-exposure prophylaxis, when medically indicated, as recommended by the U.S. Public Health Service;

(f)(3)(v) Counseling; and

(f)(3)(vi) Evaluation of reported illnesses.

(f)(4) **Information Provided to the Healthcare Professional**.

(f)(4)(i) The employer shall ensure that the healthcare professional responsible for the employee's Hepatitis B vaccination is provided a copy of this regulation.

(f)(4)(ii) The employer shall ensure that the healthcare professional evaluating an employee after an exposure incident is provided the following information:

(f)(4)(ii)(A) A copy of this regulation;

(f)(4)(ii)(B) A description of the exposed employee's duties as they relate to the exposure incident;

(f)(4)(ii)(C) Documentation of the route(s) of exposure and circumstances under which exposure occurred;

(f)(4)(ii)(D) Results of the source individual's blood testing, if available; and

(f)(4)(ii)(E) All medical records relevant to the appropriate treatment of the employee including vaccination status which are the employer's responsibility to maintain.

(f)(5) **Healthcare Professional's Written Opinion**. The employer shall obtain and provide the employee with a copy of the evaluating healthcare professional's written opinion within 15 days of the completion of the evaluation.

(f)(5)(i) The healthcare professional's written opinion for Hepatitis B vaccination shall be limited to whether Hepatitis B vaccination is indicated for an employee, and if the employee has received such vaccination.

(f)(5)(ii) The healthcare professional's written opinion for post-exposure evaluation and follow-up shall be limited to the following information:

(f)(5)(ii)(A) That the employee has been informed of the results of the evaluation; and

(f)(5)(ii)(B) That the employee has been told about any medical conditions resulting from exposure to blood or other potentially infectious materials which require further evaluation or treatment.

(f)(5)(iii) All other findings or diagnoses shall remain confidential and shall not be included in the written report.

(f)(6) **Medical Recordkeeping**. Medical records required by this standard shall be maintained in accordance with paragraph (h)(1) of this section.

(g) **Communication of Hazards to Employees -**

(g)(1) **Labels and Signs -**

(g)(1)(i) **Labels**.

(g)(1)(i)(A) Warning labels shall be affixed to containers of regulated waste, refrigerators and freezers containing blood or other potentially infectious material; and other containers used to store, transport or ship blood or other potentially infectious materials, except as provided in paragraph (g)(1)(i)(E), (F) and (G).

(g)(1)(i)(B) Labels required by this section shall include the following legend:

(g)(1)(i)(C) These labels shall be fluorescent orange or orange-red or predominantly so, with lettering and symbols in a contrasting color.

(g)(1)(i)(D) Labels shall be affixed as close as feasible to the container by string, wire, adhesive, or other method that prevents their loss or unintentional removal.

(g)(1)(i)(E) Red bags or red containers may be substituted for labels.

(g)(1)(i)(F) Containers of blood, blood components, or blood products that are labeled as to their contents and have been released for transfusion or other clinical use are exempted from the labeling requirements of paragraph (g).

(g)(1)(i)(G) Individual containers of blood or other potentially infectious materials that are placed in a labeled container during storage, transport, shipment or disposal are exempted from the labeling requirement.

(g)(1)(i)(H) Labels required for contaminated equipment shall be in accordance with this paragraph and shall also state which portions of the equipment remain contaminated.

(g)(1)(i)(I) Regulated waste that has been decontaminated need not be labeled or color-coded.

(g)(1)(ii) **Signs**.

(g)(1)(ii)(A) The employer shall post signs at the entrance to work areas specified in paragraph (e), HIV and HBV Research Laboratory and Production Facilities, which shall bear the following legend:

(Name of the Infectious Agent)
(Special requirements for entering the area)
(Name, telephone number of the laboratory director or other responsible person.)

(g)(1)(ii)(B) These signs shall be fluorescent orange-red or predominantly so, with lettering and symbols in a contrasting color.

(g)(2) **Information and Training**.

(g)(2)(i) Employers shall ensure that all employees with occupational exposure participate in a training program which must be provided at no cost to the employee and during working hours.

(g)(2)(ii) Training shall be provided as follows:

(g)(2)(ii)(A) At the time of initial assignment to tasks where occupational exposure may take place;

(g)(2)(ii)(B) Within 90 days after the effective date of the standard; and

(g)(2)(ii)(C) At least annually thereafter.

(g)(2)(iii) For employees who have received training on bloodborne pathogens in the year

preceding the effective date of the standard, only training with respect to the provisions of the standard which were not included need be provided.

(g)(2)(iv) Annual training for all employees shall be provided within one year of their previous training.

(g)(2)(v) Employers shall provide additional training when changes such as modification of tasks or procedures or institution of new tasks or procedures affect the employee's occupational exposure. The additional training may be limited to addressing the new exposures created.

(g)(2)(vi) Material appropriate in content and vocabulary to educational level, literacy, and language of employees shall be used.

(g)(2)(vii) The training program shall contain at a minimum the following elements:

(g)(2)(vii)(A) An accessible copy of the regulatory text of this standard and an explanation of its contents;

(g)(2)(vii)(B) A general explanation of the epidemiology and symptoms of bloodborne diseases;

(g)(2)(vii)(C) An explanation of the modes of transmission of bloodborne pathogens;

(g)(2)(vii)(D) An explanation of the employer's exposure control plan and the means by which the employee can obtain a copy of the written plan;

(g)(2)(vii)(E) An explanation of the appropriate methods for recognizing tasks and other activities that may involve exposure to blood and other potentially infectious materials;

(g)(2)(vii)(F) An explanation of the use and limitations of methods that will prevent or reduce exposure including appropriate engineering controls, work practices, and personal protective equipment;

(g)(2)(vii)(G) Information on the types, proper use, location, removal, handling, decontamination and disposal of personal protective equipment;

(g)(2)(vii)(H) An explanation of the basis for selection of personal protective equipment;

(g)(2)(vii)(I) Information on the hepatitis B vaccine, including information on its efficacy, safety, method of administration, the benefits of being vaccinated, and that the vaccine and vaccination will be offered free of charge;

(g)(2)(vii)(J) Information on the appropriate actions to take and persons to contact in an emergency involving blood or other potentially infectious materials;

(g)(2)(vii)(K) An explanation of the procedure to follow if an exposure incident occurs, including the method of reporting the incident and the medical follow-up that will be made

available;

(g)(2)(vii)(L) Information on the post-exposure evaluation and follow-up that the employer is required to provide for the employee following an exposure incident;

(g)(2)(vii)(M) An explanation of the signs and labels and/or color coding required by paragraph (g)(1); and

(g)(2)(vii)(N) An opportunity for interactive questions and answers with the person conducting the training session.

(g)(2)(viii) The person conducting the training shall be knowledgeable in the subject matter covered by the elements contained in the training program as it relates to the workplace that the training will address.

(g)(2)(ix) Additional Initial Training for Employees in HIV and HBV Laboratories and Production Facilities. Employees in HIV or HBV research laboratories and HIV or HBV production facilities shall receive the following initial training in addition to the above training requirements.

(g)(2)(ix)(A) The employer shall assure that employees demonstrate proficiency in standard microbiological practices and techniques and in the practices and operations specific to the facility before being allowed to work with HIV or HBV.

(g)(2)(ix)(B) The employer shall assure that employees have prior experience in the handling of human pathogens or tissue cultures before working with HIV or HBV.

(g)(2)(ix)(C) The employer shall provide a training program to employees who have no prior experience in handling human pathogens. Initial work activities shall not include the handling of infectious agents. A progression of work activities shall be assigned as techniques are learned and proficiency is developed. The employer shall assure that employees participate in work activities involving infectious agents only after proficiency has been demonstrated.

(h) **Recordkeeping** -

(h)(1) **Medical Records**.

(h)(1)(i) The employer shall establish and maintain an accurate record for each employee with occupational exposure, in accordance with 29 CFR 1910.1020.

(h)(1)(ii) This record shall include:

(h)(1)(ii)(A) The name and social security number of the employee;

(h)(1)(ii)(B) A copy of the employee's hepatitis B vaccination status including the dates of all the hepatitis B vaccinations and any medical records relative to the employee's ability to receive vaccination as required by paragraph (f)(2);

(h)(1)(ii)(C) A copy of all results of examinations, medical testing, and follow-up procedures as required by paragraph (f)(3);

(h)(1)(ii)(D) The employer's copy of the healthcare professional's written opinion as required by paragraph (f)(5); and

(h)(1)(ii)(E) A copy of the information provided to the healthcare professional as required by paragraphs (f)(4)(ii)(B)(C) and (D).

(h)(1)(iii) Confidentiality. The employer shall ensure that employee medical records required by paragraph (h)(1) are:

(h)(1)(iii)(A) Kept confidential; and

(h)(1)(iii)(B) Not disclosed or reported without the employee's express written consent to any person within or outside the workplace except as required by this section or as may be required by law.

(h)(1)(iv) The employer shall maintain the records required by paragraph (h) for at least the duration of employment plus 30 years in accordance with 29 CFR 1910.1020.

(h)(2) **Training Records**.

(h)(2)(i) Training records shall include the following information:

(h)(2)(i)(A) The dates of the training sessions;

(h)(2)(i)(B) The contents or a summary of the training sessions;

(h)(2)(i)(C) The names and qualifications of persons conducting the training; and

(h)(2)(i)(D) The names and job titles of all persons attending the training sessions.

(h)(2)(ii) Training records shall be maintained for 3 years from the date on which the training occurred.

(h)(3) **Availability**.

(h)(3)(i) The employer shall ensure that all records required to be maintained by this section shall be made available upon request to the Assistant Secretary and the Director for examination and copying.

(h)(3)(ii) Employee training records required by this paragraph shall be provided upon request for examination and copying to employees, to employee representatives, to the Director, and to the Assistant Secretary.

(h)(3)(iii) Employee medical records required by this paragraph shall be provided upon

request for examination and copying to the subject employee, to anyone having written consent of the subject employee, to the Director, and to the Assistant Secretary in accordance with 29 CFR 1910.1020.

(h)(4) **Transfer of Records**.

(h)(4)(i) The employer shall comply with the requirements involving transfer of records set forth in 29 CFR 1910.1020(h).

(h)(4)(ii) If the employer ceases to do business and there is no successor employer to receive and retain the records for the prescribed period, the employer shall notify the Director, at least three months prior to their disposal and transmit them to the Director, if required by the Director to do so, within that three month period.

(h)(5) **Sharps Injury Log**.

(h)(5)(i) The employer shall establish and maintain a sharps injury log for the recording of percutaneous injuries from contaminated sharps. The information in the sharps injury log shall be recorded and maintained in such manner as to protect the confidentiality of the injured employee. The sharps injury log shall contain, at a minimum:

(h)(5)(i)(A) the type and brand of device involved in the incident,

(h)(5)(i)(B) the department or work area where the exposure incident occurred, and

(h)(5)(i)(C) an explanation of how the incident occurred.

(h)(5)(ii) The requirement to establish and maintain a sharps injury log shall apply to any employer who is required to maintain a log of occupational injuries and illnesses under 29 CFR 1904.

(h)(5)(iii) The sharps injury log shall be maintained for the period required by 29 CFR 1904.6.

(i) **Dates -**

(i)(1) **Effective Date**. The standard shall become effective on March 6, 1992.

(i)(2) The Exposure Control Plan required by paragraph (c) of this section shall be completed on or before May 5, 1992.

(i)(3) Paragraph (g)(2) Information and Training and (h) Recordkeeping shall take effect on or before June 4, 1992.

(i)(4) Paragraphs (d)(2) Engineering and Work Practice Controls, (d)(3) Personal Protective Equipment, (d)(4) Housekeeping, (e) HIV and HBV Research Laboratories and Production Facilities, (f) Hepatitis B Vaccination and Post-Exposure Evaluation and Follow-up, and (g)(1) Labels and Signs, shall take effect July 6, 1992.

APPENDIX A TO SECTION 1910.1030 - HEPATITIS B DECLINATION (MANDATORY)

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. However, I decline hepatitis B vaccination at this time. I understand that by declining this vaccine, I continue to be at risk of acquiring hepatitis B, a serious disease. If in the future I continue to have occupational exposure to blood or 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.

_____

Name of Individual declining Hepatitis B vaccine series Signature

_____

Date Laboratory where employed