

BLOODBORNE PATHOGENS EXPOSURE CONTROL PLAN

FOR UMDNJ-RWJMS

RESEARCH LABORATORIES

PISCATAWAY/NEW BRUNSWICK CAMPUSES

Adapted from the Employer Guide and Model Exposure
Control Plan, Bloodborne Pathogens Standard 29 CFR Part 1910.1030
by the New Jersey Department of Health Public Employees
Occupational Safety and Health Program

Environmental & Occupational
Health & Safety Services (EOHSS)

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Introduction

Human Immunodeficiency Virus (HIV) which causes Acquired Immune Deficiency Syndrome (AIDS), Hepatitis C, and Hepatitis B warrant serious concern for personnel occupationally exposed to blood and certain other body fluids that could be contaminated with bloodborne pathogens. It is estimated nationally that more than 5.6 million in health care and public safety occupations are potentially exposed. In recognition of these potential hazards, the New Jersey Public Employees Occupational Safety and Health Act has adopted the Occupational Safety and Health Administration (OSHA) regulation [Bloodborne Pathogens 29 Code of Federal Regulations (CFR) 1910.1030] to help protect New Jersey public workers from these health hazards.

The major intent of this regulation is to prevent the transmission of bloodborne diseases within potentially exposed workplace occupations. The standard is expected to reduce and prevent employee exposure to the Human Immunodeficiency Virus (HIV), Hepatitis B Virus (HBV) and other bloodborne diseases. The Occupational Safety and Health Administration (OSHA) estimates the standard could prevent more than 200 deaths and about 9,000 infections per year from HBV alone. The standard requires that employers follow universal precautions, which means that all blood or other potentially infectious materials must be treated as being infectious for HIV and HBV. Each employer must determine the application of universal precautions by performing an employee exposure evaluation. If employee exposure is recognized, as defined by the standard, then the standard mandates a number of requirements. One of the major requirements is the development of an Exposure Control Plan (ECP), which mandates engineering controls, work practices, personal protective equipment, HBV vaccinations and training. The standard also mandates practices and procedures for housekeeping, medical evaluations, hazard communication, and recordkeeping.

Using this Exposure Control Plan

Through out this document you will find blank spaces where laboratory-specific information must be provided. Until this information is provided and all laboratory personnel are familiar with the specifics, the Plan can not in either a legal or practical sense serve as a sufficiently detailed infection control guide. It is strongly recommended that once the Plan is "completed", the Principal Investigator conduct a brief laboratory specific review of the Plan. This should be feasible over the course of a lunch break.

If your laboratory is already working under a safety plan that includes the same information as this Plan, simply attach this document to it and continue to use your existing safety plan. Alternatively, you can amend your current plan by adding the completed "filled-in blanks" to your existing plan. A laboratory's final Exposure Control Plan version must, at a minimum, cover the same details as this Plan.

Policy

In accordance with the UMDNJ Bloodborne Pathogens Policy (00-01-45-50:00) (http://www.umdnj.edu/oppmweb/Policies/HTML/HealthSafety/00-01-45-50_00.html), UMDNJ laboratories are committed to providing a safe and healthful work environment for our entire staff. 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 OSHA Bloodborne Pathogens Standard, Title 29 Code of Federal Regulations 1910.1030. The Exposure Control Plan is a key document to assist clinics, laboratories and departments in implementing and ensuring compliance with the standard, thereby protecting our employees. This ECP includes:

- I. Employee exposure determination
- II. Procedures for evaluating the circumstances surrounding an exposure incident, and
- III. Schedule and method for implementing the specific sections of the standard, including:
 - C Methods of compliance
 - C Hepatitis B vaccination and post-exposure follow-up
 - C Training and communication of hazards to employees
 - C Recordkeeping

Program Administration

Either the names or job titles of the individuals responsible for each of the areas listed below should be inserted in the spaces. If practical, the responsibilities for the complete program may also be held by one individual.

- C (RI and/or designee - name[s]) _____ is (are) responsible for the implementation and completion (providing information in the blank spaces) of the ECP. (He/she/they) _____ will maintain and update the written ECP at least annually and whenever necessary to include new or modified tasks and procedures.
- C Employees covered by the Bloodborne Pathogens Standard will receive an explanation of this ECP during their initial training session. It will also be reviewed during annual refresher training. A copy of the Plan will be kept in the laboratory. (It is in the same binder as the Laboratory Safety Plan).
- C Those employees who are reasonably anticipated to have contact with or exposure to blood or other potentially infected materials listed on page 4 are required to comply with the procedures and work practices outlined in this ECP.
- C **(RI and/or designee)** _____ will be responsible for completing the "Employee Exposure Determination" (page 5) and the "Cleaning Schedule (page 18), ensuring that effective disinfectants are used.
- C **UMDNJ-RWJMS Employee Health Services (employees), UMDNJ Family Practice Center (RWJMS students) or Rutgers Busch/Livingston Health Center or Hurtado Health Center (students)** will be responsible for ensuring that all medical actions required are performed and that appropriate medical records are maintained.
- C **The Principal Investigator in conjunction with Environmental and Occupational Health and Safety Services (EOHSS)** will be responsible for training, documentation of training, and making the written ECP available to employees, and PEOSH representatives.
- C The Responsible Investigator/Environmental Services will maintain and provide adequate supplies of all necessary personal protective equipment, engineering controls (i.e., sharps containers, etc.), labels, and red bags as required by the Standard.

Materials which are Covered under this Plan

Bloodborne Pathogens are defined as pathogenic micro-organisms that are present in human blood and can infect and cause disease in humans. These pathogens include, but are not limited to, Hepatitis B virus (HBV), and Human Immunodeficiency Virus (HIV).

The following materials have been implicated in the occupational transmission of bloodborne pathogens and are covered under this Plan.

- a. Any unfixed tissue or organ (other than intact skin) from a human (living or dead);
- b. HIV-containing cells or tissue cultures, organ cultures, and HIV or HBV-containing cultures medium or other solutions; and
- c. Blood, organs, or other tissue from experimental animals infected with HIV or HBV.
- d. Other Potentially Infectious Materials (OPIM), including the following human body fluids:
 1. semen
 2. vaginal secretions
 3. cerebrospinal fluid
 4. synovial fluid
 5. pleural fluid
 6. pericardial fluid
 7. peritoneal fluid
 8. amniotic fluid
 9. saliva in dental procedures
 10. any body fluid visibly contaminated with blood
 11. all body fluids in situations where it is difficult or impossible to differentiate between body fluids;
- e. Human Cell Lines: Biosafety Level and Bloodborne Pathogen Program applicability

Human cell lines and human cell strains from primary explants are handled at Biosafety Level 2 (BSL2). Human cell lines obtained from commercial sources, even when they have been screened for bloodborne pathogens may become contaminated with adventitious agents while they are in use in the laboratory. Cell lines obtained from non-commercial sources (colleagues passing along an interesting clinical specimen) undergo even less screening. Therefore, all cell cultures should be handled at BSL2 and contaminated materials must be autoclaved before disposal in Regulated Medical Waste containers. Conducting operations at BSL 2 will also reduce the chances of the culture contamination.

A checklist of BSL2 facility and work practice requirements is available at:
<http://www2.umdnc.edu/eohssweb/publications/BL2.htm>

Laboratories using primary explants and human cell strains (non-transformed cells) and cell lines propagated from primary explants must also comply with the provisions of the Bloodborne Pathogens standard unless the strains have been characterized* to be free of bloodborne pathogens.

Materials Excluded From the Bloodborne Pathogen Program

Established human cell lines which are characterized* to be free of contamination are not covered by the Bloodborne Pathogen Standard as long as documentation that such cell lines do not contain bloodborne pathogens is available and is kept in the laboratory.

For example, in order to handle human HeLa cells, without having to comply with the requirements of the bloodborne pathogens standard (BPS), human HeLa cells should be documented to be pure HeLa cells and shown to be free of bloodborne pathogens by testing.

*Characterization of human cell lines for inclusion or exclusion from compliance with the BPS, would include screening of the cells lines or "strains" for viruses characterized as bloodborne pathogens by the Standard, including human immunodeficiency viruses, hepatitis viruses or EBV, if the cells are capable of propagating such viruses. Most cell lines are screened for human mycoplasmas and are free of bacterial and mycotic contaminants. Testing may include antigenic screening for viral or agent markers, co-cultivation with various indicator cells that allow contaminants to grow, or using molecular technology (polymerase chain reaction or nucleic acid hybridization) to identify latent viruses capable of infecting humans such as Herpes viruses(e.g., EBV), or papilloma members of the Papovavirus group, etc. Cell lines that are procured from commercial vendors or other sources with documented testing to be free of human bloodborne pathogens and which have been protected by the employer from environmental contamination may be excluded from the bloodborne pathogen program.

Source: OSHA Clarification Letter
<http://www.osha-slc.gov/OshDoc/Interp_data/l19940621.html>

ATCC information on their testing of cell lines for bloodborne pathogens is available at:
<<http://www.atcc.org/SearchCatalogs/faqCellBiology.cfm#Q53>>.

Employee Exposure Determination

Note: You are not required to complete both sections that follow; you may complete one or both sections, depending on the applicable situation.

- A. As part of the exposure determination section of our ECP, the following is a list of all job titles in this laboratory in which all employees have occupational exposure. Refer to the “definitions” listed in Appendix B, to define “occupational exposure”.

_____	_____
_____	_____
_____	_____

- B. The following is a list of job classifications or job titles in which some employees have occupational exposure. Included are a list of tasks and procedures in which occupational exposure may occur for these individuals.

Job Classification	Tasks and Procedures
_____	_____
_____	_____
_____	_____

All exposure determinations for A and B were made without regard to the use of Personal Protective Equipment (PPE).

Note: Category B would include, for example, specific Research Teaching Specialists who handle human blood or other potentially infectious materials (even sporadically) while other RTSs handle only formalin-fixed material in another area of the laboratory. Outside Contractors or vendors (i.e., plumbing contractor, etc.) must be notified of potential contact with blood or other potentially infectious materials so they can take appropriate precautions.

Note: "Good Samaritan" acts which result in exposure to blood or other potentially infectious materials from assisting a fellow employee (i.e., assisting a co-worker with nosebleed, giving CPR or first aid) are not covered by the Bloodborne Pathogens Standard. However, Post-Exposure Evaluation and Follow-up should be provided in such cases.

Substitution & Engineering Controls

Engineering controls remove or isolate a hazard with a minimum of worker effort. For example, sharps containers reduce the risk of accidental injury from discarded needles, slides, and other sharp objects.

Sharps are any material capable of piercing skin, including but not limited to needles, razor blades, Pasteur pipettes, and capillary tubes. Percutaneous injuries, most frequently the result of needle sticks, have caused the majority of the documented occupationally acquired HIV infections

In 2000, the OSHA BBP standard was revised to require use of safety sharps (safety sharps are engineered to protect the user from needlesticks or other sharps injuries) in the presence of blood or other potentially infectious material. This requirement is enforced by NJ PEOSH for all NJ state institutions. EOHSS has posted a factsheet on this law at: <<http://www2.umdnj.edu/eohssweb/publications/safemedicaldevice.htm>>. Laboratories are not exempt from this requirement.

Responsible Investigators must decide whether there is a safety sharp alternative for each blood or OPIM procedure and, whenever possible, must switch to using only the safety sharp for that procedure. EOHSS will periodically inform Responsible Investigators of new devices as they become commercially available. The Responsible Investigator must ensure that personnel receive adequate training in the use of the new devices and must get input from users about whether the new devices make the job safer. EOHSS is available to provide guidance on these issues.

Use of sharps containers is required, even when safety sharps are utilized. They must be easily accessible to personnel and must be located at or near the immediate area where sharps are used. Sharps containers in research (not clinical) labs must be autoclaved before disposal if they were used with blood, OPIM, or BL2 or higher materials.

Another type of substitution, easily implemented, is the replacement of glass items with plastic ones, whenever possible.

Examples of engineering controls include, but are not limited to:

C	Self-sheathing needles	C	Mechanical needle recapping devices
C	Biological Safety Cabinets* (*Must be certified at least annually)	C	Centrifuge Safety Devices (safety cups, sealed rotors)
C	Spill Trays	C	Specimen Transport Bags
C	Chemical Disinfectant Traps*	C	Vacuum Line Filters*

C Safety Scalpels

* See Appendix C for "Effective Use of Biological Safety Cabinets".

The specific engineering controls used in this laboratory are listed below (delete or add items as necessary):

- | | |
|--|------------------------------|
| Biological Safety Cabinets | Sharps Containers |
| Spill pans and trays | Autoclaves |
| Centrifuge Safety Devices | Secondary containers |
| Specimen transports | Bags |
| Splash Guards | Mechanical Pipetting Devices |
| "Bench-Kote" or other work surface coverings | |

OTHERS (Specify):

Work Practice Controls

All employees will utilize Universal 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.

Other Work Practice Controls include, but are not limited to:

- C Washing hands immediately or as soon as feasible after removal of gloves.
 - C Washing body parts as soon as possible after skin contact with blood or other potentially infectious materials occurs.
 - C Prohibiting the recapping, shearing, breaking, or bending of needles.
 - C Posting labels and signs in accordance with the Standard's provisions (see page 21).
 - C Equipment and work surface decontamination.
 - C Prohibiting eating, drinking, food and beverage storage, smoking, application of cosmetics, and handling contact lenses in work areas, and refrigerators or freezers where blood or other potentially infectious materials are present.
 - C Performing all procedures involving blood or other potentially infectious materials in such a manner as to minimize splashing, splattering, and generation of droplets of these substances.
 - C Placing specimens of blood or other potentially infectious materials in a container which prevents leakage during collection, handling, processing, storage, transport or shipping.
 - C Using secondary containers (sturdy containers, specimen transport bags) for the prolonged storage or transports of blood or other potentially infectious material.
 - C Ensuring that equipment which may have become contaminated with blood or other potentially infectious materials are decontaminated prior to servicing or shipping. Items not completely decontaminated will be labeled per section (g)(1)(I)(H) of the Standard.
 - C Using mechanical pipetting devices only.
 - C Adhering to established procedures for housekeeping and decontamination.
 - C Other Work Practice Controls used in this laboratory include:
-

Personal Protective Equipment

Personal Protective Equipment (PPE) must be provided at no cost to affected personnel, be easily accessible, and used whenever the potential for occupational exposure remains after engineering and work practice controls have been instituted, or if these controls are not feasible. In addition to understanding the appropriate uses of various types of PPE, it is equally important to realize that all PPE items have certain limitations that should be considered in making a selection.

Use the blank spaces on page 11 to list the PPE to be used for each task conducted in the laboratory. The type of PPE for a given task will depend on the risk entailed in a particular operation which in turn can be assessed by, for example, addressing the following questions:

What is the volume of infectious material in use?

What is titer of the material in use? (The viral titer of tissue culture supernatants may be several orders of magnitude higher than the titer in clinical specimens.)

When the identity of the infectious agent is known, what is its natural route of infection?

How hazardous is the agent, both in terms of transmissibility and severity of illness?

What are chances of accidental exposure for different types of activities? That is, will one liter flasks of liquid growth media be manipulated outside of a Biological Safety Cabinet or will the activity be streaking plates from a microfuge tube inside a Cabinet?

Gloves -Always inspect for holes and tears before donning. They are subject to losing their “barrier protection” quality with prolonged use or as the result of exposure to laboratory chemicals; therefore gloves must be changed frequently during prolonged operations and as soon as possible if they become torn, punctured, or contaminated with blood or other infectious material. They do not provide protection against percutaneous injury.

Glove selection - There are certain occasions where a glove designed for barrier protection is not the appropriate choice. For example, gloves designed for barrier protection against infectious materials offer limited resistance to significant amounts of hazardous chemicals. In a clinical setting, it may be inappropriate to use a barrier glove or any glove at all for taking a patient’s blood pressure or pulse. EOHSS can provide assistance in glove use and selection for these occasions.

Latex allergies - Until recently, latex gloves were considered the “gold standard” for the provision of barrier protection, but because of their availability and low cost, it

became routine to use them for every task. A significant number of wearers have become sensitized to latex rubber proteins or the chemicals used in manufacturing the gloves. EOHSS can provide information on substitutes for latex gloves that provide the same level of barrier protection against infectious materials as latex without putting the wearer at risk for sensitization. Always use non-powdered gloves regardless of the glove material used.

Laboratory coats - Coats that fasten in the rear offer greater protection than front-buttoning ones. If the potential exists for large amounts of splashing, a water-proof plasticized apron should be worn over a rear-fastened laboratory coat. Laboratory coats are not to be worn outside of the laboratory if they have been used while working with bloodborne pathogens or any other pathogenic organism. Frankly contaminated laboratory coats should either be discarded as regulated medical waste or decontaminated by the wearer. Further information on the handling of contaminated PPE can be found in the “Laundry” section on page 20.

Eye protection-

Safety glasses with side shields are the minimum level of eye protection for handling blood or other potentially infectious materials. They do not protect the eyes from large splashes.

Splash-proof goggles, by virtue of their tighter fit around the eyes, are required for activities with an elevated risk of splash exposure.

Face shields should be worn to supplement, not replace goggles in the highest splash-risk situations.

Contact lenses will inhibit the ability of any eye washing to flush infectious organisms or hazardous chemicals from the eyes. Their use in the laboratory is not recommended.

Masks - provide protection against droplet/splash exposure of the nose and mouth. They do not provide a barrier to organisms transmitted by inhalation (e.g., tuberculosis).

Head and shoe covers - These are appropriate in high exposure situations where a large degree of splashing can be anticipated.

Appropriate personal protective equipment is required for the following tasks; the specific protective equipment to be used is listed after the task:

Task	Personal Protective Equipment
_____	_____

First aid responders must have quick access to kits containing impervious gloves, resuscitation bags or mouthpieces, eye protection, aprons, disinfectant towelettes for hand washing, and red bags or biohazard-labeled bags.

All employees using PPE must observe the following precautions:

- C Wash hands immediately or as soon as feasible after removal of gloves or other personal protective equipment.
- C Remove protective equipment before leaving the work area and after a garment becomes contaminated.
- C Place used protective equipment in appropriately designated areas or containers when being stored, washed, decontaminated, or discarded.
- C Wear appropriate gloves when it can be reasonably anticipated that you may have contact with blood or other potentially infectious materials 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.
- C Double-gloving should be employed for work with high titer and/or highly infectious materials; consideration should be given to the effect of the resultant loss of dexterity.
- C Following any contact of body areas with blood or any other infectious materials, wash 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.
- C Utility gloves may be decontaminated for reuse if their integrity is not compromised. Discard them if they show signs of cracking, peeling, tearing, puncturing, or deterioration.
- C Never wash or attempt to decontaminate disposable gloves for reuse.
- C Wear appropriate face and eye protection when splashes, sprays, spatters, or droplets of blood or other potentially infectious materials pose a potential hazard to the eye, nose, or mouth.
- C If a garment(s) is contaminated by blood or other potentially infectious materials, it 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 pull-over 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. However, 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 constitutes exposure. Employees shall be trained to cut such a contaminated scrub to aid removal and prevent exposure to the face.

Training

All employees who have or are reasonably anticipated to have occupational exposure to bloodborne pathogens will receive training conducted by EOHSS or Department or laboratory-based trainers. (All trainers must attend a Trainer's Training which is provided by EOHSS). The training program will cover, at a minimum, the following elements:

1. An explanation of the requirements of the OSHA Bloodborne Pathogens Standard;
2. An explanation of the epidemiology, transmission, and symptoms of bloodborne diseases;
3. A review of the Exposure Control Plan;
4. An explanation of the appropriate methods that can be used to recognize and evaluate tasks and activities with potential exposure;
5. An explanation of the use and limitations of the different methods of control, including, but not limited to, engineering controls, work practices and personal protective equipment;
6. Information on the appropriate actions and procedures to follow if an exposure occurs;
7. Information on the Hepatitis B vaccine, including efficacy, safety, and that the vaccine will be free of charge to employees;
8. An explanation of the signs and labels required by the standard;
9. An opportunity for interactive questions and answers; and
10. Additional training for employees in HIV and HBV research laboratories which is specific to the practices and operations of the laboratory.

An Employee Education and Training Record (attendance sheet) will be completed for each employee upon completion of training. This document will be kept with the employee's records at EOHSS. Departmental- or laboratory-based trainers are responsible for the forwarding of attendance sheets to EOHSS.

Hepatitis B Vaccination

Hepatitis B vaccines currently in use (as opposed to the first ones licensed) contain no human source material. The immunization series involves three intramuscular injections with the second injection given one month after the first and the third one administered five months after the second. The vaccine is effective > 95% of the time when all three doses are given and immunity is thought to last at least fifteen years after documented proof of immunity. It may be contraindicated for those with allergies to yeast (the immunogenic antigen is cultivated in cells of *S. cerevisiae*); pregnant women should consult their physician before receiving the vaccine, as should those who are immunocompromised.

The hepatitis B vaccination series must be made available at no cost within 10 days of initial assignment to employees who have occupational exposure to blood or other potentially infectious materials, unless:

- C the employee demonstrates immunity (due to previous infection or immunization); or
- C medical reasons prevent taking the vaccination

Volunteers with potential exposure must also have documentation of immunity or must obtain the vaccine series.

Hepatitis B vaccines (and antibody testing) are currently being given to Piscataway/ New Brunswick campus employees at the Employee Health Services (445-0123), or for students at the Rutgers Hurtado Health Center (932-7401).

As required by the University Policy on HIV, HBV and HCV 00-01-45-52:00 at http://www.umdnj.edu/oppmweb/Policies/HTML/HealthSafety/00-01-45-52_00.html, all house staff, faculty and staff who have direct patient contact, (as defined in the University Policy on HIV, HBV and HCV), or who have contact with potentially infectious body fluids or laboratory materials must be immunized against hepatitis B or be able to demonstrate immunity. Hepatitis B vaccination booster doses must be made available if recommended by the United States Public Health Service.

Post Exposure Evaluation

The UMDNJ University Policy, Appendix E, "Chemoprophylaxis After Potential Occupational/Educational HIV Exposure" (00-01-40-40:10) addresses post exposure evaluation and follow-up procedures. It was recently revised (9/24/96) to incorporate the CDC's recommended addition of protease inhibitors to the anti-HIV regimen to attempt to prevent HIV infection in the event of exposure. Treatment with chemoprophylactic drugs is voluntary.

Should an exposure incident occur, decontamination should immediately be performed at the nearest sink, eyewash, or safety shower. Exposed individuals should then notify their supervisor or Responsible Investigator and medical personnel as follows:

Employees: Contact the RWJMS Employee Health Service at 445-0123 or beeper number (732) 989-1775 during business hours, or ask the page operator at Robert Wood Johnson University Hospital (828-3000) to page the Infectious Disease Fellow during non-business hours. Employees will be seen initially by both the Infectious Disease Fellow and Employee Health Services and will receive follow-up care and counseling, as well as medications, at the Employee Health Service.

Residents: All non-RWJUH residents will receive initial evaluation at the hospital where their exposure occurred, according to the protocol of the affiliated hospital. They will receive their initial medication at the affiliated hospital. Residents stationed at RWJUH should follow the instructions for employees, listed above. All residents will receive follow-up counseling, blood work, and appropriate medication at the Employee Health Service.

Students:

M.D. & M.D.-Ph.D.: Contact the Family Practice Center during business hours (9-5) at (732) 828-5962. Follow the instruction employees during non-business hours., Then notify the Family Practice Center, Ferrin Mall, One Penn Plaza, New Brunswick, NJ (828-5962) of the incident within 48 hours for follow-up counseling.

GSBS & Rutgers/UMDNJ
Masters or Ph.D.:

Contact Rutgers Hurtado Health Center. Follow the instructions for employees during non-business hours. Then notify Hurtado Health Center (932-7401) within 48 hours for follow-up counseling.

Note: Post-Exposure Prophylaxis is most effective if taken within a few hours after the exposure. Therefore an exposure to blood or body fluids should be handled as a medical

emergency. Even if there is any delay in reporting the exposure, personnel are encouraged to consult with Employee Health Services because there are still advantages in obtaining the post-exposure prophylaxis.

Risk and Claims should then be notified of the incident as soon as possible by calling (973) 972-6145. Once notified, they will provide the exposed individual with specific follow-up instructions. Each exposure must also be documented on a UMDNJ Incident Report form.

If indicated, testing on a voluntary basis, for anti-HIV and anti-HCV antibodies will be conducted at: baseline, six weeks, 12 weeks, six months, and twelve months. HBV antibody testing, or vaccine, booster, or immunoglobulin will be administered as appropriate.

After business hours (i.e., when Employee Health Services and Hurtado Health Center are not open), the exposed individual should go directly to the RWJUH Emergency Room if immediate medical attention is required. If needed, Risk and Claims will arrange for follow-up after the individual has been initially treated at either Employee Health Services, Hurtado Health Center or the RWJUH Emergency Room.

The Responsible Investigator, Department Chair, EHS (employees) or Hurtado Health Center (students) and EOHSS will review the circumstances of the exposure incident to determine if procedures, protocols and/or training need to be revised to prevent a reoccurrence of the incident.

SUMMARY: POST EXPOSURE EVALUATION

- C Documentation of exposure routes and how exposure incident occurred;
- C Identification and documentation of source individual's infectivity, if possible;
- C Collection and testing of employee's blood for HBV and HIV serological status (employee's consent required);
- C Post-exposure prophylaxis when medically indicated;
- C Counseling; and
- C Evaluation of reported illnesses.

Healthcare Professionals

EOHSS will ensure that health care professionals responsible for employee's hepatitis B vaccination and post-exposure evaluation and follow-up are given a copy of the OSHA Bloodborne Pathogens Standard.

The Responsible Investigator or designee in conjunction with the exposed person will also ensure that the health care professional evaluating an employee after an exposure incident receives the following:

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

Healthcare Professional's Written Opinion

The Responsible Investigator or supervisor shall ensure that the affected person is provided with a copy of the evaluating healthcare professional's written opinion within 15 days after completion of the evaluation.

For hepatitis B vaccinations, the healthcare professional's written opinion will be limited to whether the employee requires or has received the hepatitis B 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 employee's PI/supervisor.

Housekeeping/Cleaning/Disinfection

The Responsible Investigator's designee and the laboratory staff are required by the Standard to develop and implement a written schedule for cleaning and decontaminating work surfaces. A pre-existing Cleaning Schedule can be substituted for this one provided that it includes the same details, regardless of the format.

CLEANING SCHEDULE

Area (Bench top, centri- fuge, safety cabinet)	Scheduled Cleaning Times*	Cleaners & Disinfectants Used	Specific Instructions
	completion of procedures after overt contamination end of work shift, if needed AND:		
	completion of procedures after overt contamination end of work shift, if needed AND:		
	completion of procedures after overt contamination end of work shift, if needed AND:		
	completion of procedures after overt contamination end of work shift, if needed AND:		

Note: A list of approved sterilants and disinfectants* can be obtained from the Environmental Protection Agency (EPA) at (800-447-6349) or by contacting EOHSS.

* Approved refers to a manufacturer's right to use terms such as "disinfectant", "tuberculocidal", "sporicidal", etc. on the product label. It is based on demonstrated anti-microbial activity in specified testing protocols. In addition, a 10% solution of household bleach, prepared fresh weekly, will provide effective decontamination for routine housekeeping and routine spill response.

Decontaminate work surfaces 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.

Remove and replace protective coverings such as plastic wrap and aluminum foil when contaminated.

Inspect and decontaminate, on a regular basis, reusable receptacles such as bins, pails, and cans that have a likelihood for becoming contaminated. When contamination is visible, clean and decontaminate receptacles immediately, or as soon as feasible.

Always 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.

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

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

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

Ensure that 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.

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

Discard all regulated waste according to UMDNJ policy.

Laundry

The following contaminated articles will be laundered:

- C _____
- C _____
- C _____

Note: Employers responsible for the cost of providing, cleaning, laundering, and disposal of any personal protective equipment required to protect employees from bloodborne pathogens. Employees must not take home items for laundering.

Laboratory coats and other reusable PPE that are grossly contaminated with Bloodborne Pathogens or other infectious materials must be autoclaved or otherwise decontaminated by laboratory personnel knowledgeable of the hazard before being sent to be laundered.

Otherwise, all generators of laundry must have determined if the receiving facility uses universal precautions. If Universal Precautions are not used, then clearly mark laundry sent off-site with orange biohazard labels or use red bags.

Note: Disposable protective clothing can be used to eliminate or greatly reduce the need for laundering.

Labels and Signs

Labels

Warning labels must be affixed to the following items:

- C containers of regulated waste
- C sharps disposal containers
- C refrigerators and freezers containing blood and other potentially infectious materials
- C other containers used to store, transport, or ship blood or other potentially infectious materials
- C contaminated equipment awaiting repair (note the area contaminated)
- C laundry bags and containers

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

These labels are not required when:

- C red bags or red containers are used
- C individual containers of blood or other potentially infectious materials are placed in a labeled container during storage, transport, shipment or disposal
- C containers of blood, blood components, or blood products are labeled with their contents and have been released for transfusion or other clinical use

Signs

All laboratories covered by the Bloodborne Pathogens Standard and those working at Biological Safety Level-2 or higher must display a sign at the entrance to the work area incorporating the features required for "Labels" as well as:

- C the name of the infectious agent(s)
- C special requirements for entering the area
- C the name and phone number of the Responsible investigator or other responsible person.

Recordkeeping

Medical Records

Medical records are maintained for each employee with occupational exposure in accordance with 29 CFR 1910.20.

Employee Health Services (EHS) and Rutgers Hurtado Health Center are responsible for maintenance of the required medical records. EHS is located in the EOHSIClinic, Frelinghuysen Avenue, Piscataway campus; and Hurtado Health Center is located on Bishop Place, New Brunswick campus.

In addition to the requirements of 29 CFR 1910.20, the medical record will include:

- C The name and social security number of employee;
- C A copy of the employee's hepatitis B vaccinations and any medical record 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;
- C 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 maintained for at least the duration of employment plus 30 years in accordance with 29 CFR 1910.20.

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 EOHSS and the departmental office. The training record shall include the dates of the training sessions; contents or a summary of the sessions; names and qualifications of persons conducting the training; and 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.

Transfer of Records

If _____ (insert name of your department) is ever dismantled and there is no successive department which will receive and retain the records for the prescribed period, the school or unit will be responsible for ensuring that the records are maintained as required by the standard. The Dean's Office will be responsible for the maintenance or assignment of the records in this situation.

APPENDIX A OF THE BBP PLAN

OSHA Bloodborne Pathogens Standard: 29 CFR Part 1910.1030

APPENDIX B OF THE BBP PLAN

DEFINITIONS

Biosafety Level (BL): One of four combinations of laboratory practices and techniques, safety equipment, and laboratory facilities recommended by the Centers for Disease Control and the National Institutes of Health in "Biosafety in Microbiological and Biomedical Laboratories", as being appropriate for minimizing the risk of infectious disease when microorganisms are worked with. BL-1 applies to agents that do not ordinarily cause human disease. BL-2 is appropriate for agents that can cause human disease, but whose potential for transmission is limited. BL-3 applies to agents that may be transmitted by the respiratory route, which can cause serious infection. BL-4 is used for the diagnosis of exotic agents that pose a high risk of life-threatening disease, which may be transmitted by the aerosol route and for which there is no vaccine or therapy..

BMBL: The CDC-NIH publication, "Biosafety in Microbiological and Biomedical Laboratories, 4th edition" lists the appropriate biosafety levels for numerous microorganisms, and the work practices that should be implemented

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

Bloodborne Pathogens - pathogenic micro-organisms that are present in human blood and can infect and cause disease in humans. These pathogens include, but are not limited to, Hepatitis B virus (HBV), and Human Immunodeficiency Virus (HIV).

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

Exposure Incident - a specific eye, mouth, other mucous membrane, non-intact skin, or parenteral contact with blood or other potentially infectious materials that results from the performance of an employee's duties.

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

Other Potentially Infectious Materials (OPIM) - Materials which have been implicated in the occupational transmission of bloodborne pathogens.

1. The following human body fluids:

- a. semen
 - b. vaginal secretions
 - c. cerebrospinal fluid
 - d. synovial fluid
 - e. pleural fluid
 - f. pericardial fluid
 - g. peritoneal fluid
 - h. amniotic fluid
 - i. saliva in dental procedures
 - j. any body fluid visibly contaminated with blood
 - k. all body fluids in situations where it is difficult or impossible to differentiate between body fluids;
2. Any unfixed tissue or organ (other than intact skin) from a human (living or dead);
 3. HIV-containing cells or tissue cultures, organ cultures, and HIV or HBV-containing cultures medium or other solutions; and
 4. Blood, organs, or other tissue from experimental animals infected with HIV or HBV.

Regulated Waste -

1. Liquid or semi-liquid blood or OPIM;
2. Contaminated items that would release blood or other potentially infectious material in a liquid or semi-liquid state if compressed;
3. Items that are caked with dried blood or other potentially infectious material and are capable of releasing these materials during handling;
4. Contaminated sharps; and
5. Pathological and microbiological wastes containing blood or other potentially infectious material.

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

APPENDIX C OF THE BBP PLAN EFFECTIVE USE OF BIOLOGICAL SAFETY CABINETS

Allow cabinet to run for five minutes before starting in order to purge ambient air. Wipe down cabinet interior with 70% ethanol.

Place all items required for the procedure inside cabinet before starting work. In the event of a spill, include a container of disinfectant (10% "Clorox")*. Allow appropriate contact time and allow cabinet air to circulate for five minutes before resuming work.

Cover work surface with an absorbent, plastic-lined bench pad, but be sure not to block the front or rear grill; this will interrupt the integrity of the protective air-flow "curtain".

Arrange materials so that contaminated items do not pass over clean items.

Perform work four to six inches in back of front intake grill; move arms slowly.

Excess heat will cause turbulence and damage HEPA filters. If a Bunsen burner must be used, a model with a easily adjustable pilot light should be used. Alternatively, a "micro incinerator" can be used.

Protect the building vacuum system by placing a cartridge filter between vacuum trap and valve. (See diagram below).

Upon completion of work, wipe the interior with 70% alcohol.

BSCs are not chemical fume hoods. Unless one designed for 100% exhaust is used, vapors will be continually recirculated within the cabinet and exhausted into the laboratory.

Always shut off UV light when working in the BSC.

Cabinets must be certified annually to not only protect against infectious disease hazards but to also maintain the cabinet's ability to prevent the contamination of research material.

APPENDIX E OF THE BBP PLAN

use

http://www.umdnj.edu/oppmweb/Policies/HTML/HealthServ/00-01-40-40_10

**UMDNJ POLICY: CHEMOPROPHYLAXIS AFTER POTENTIAL
OCCUPATIONAL/EDUCATIONAL HIV EXPOSURE**

Appendix F

BIOLOGICAL SAFETY AND BLOODBORNE PATHOGENS REFERENCES

AIHA Laboratory Health and Safety Committee Biosafety Website:

<http://www2.umdnj.edu/eohssweb/aiha/technical/biosafety.htm>

Updated U.S. Public Health Service, Guidelines for the Management of Occupational Exposures to HBV, HCV, and HIV and Recommendations for Postexposure Prophylaxis, MMWR, June 29, 2001

<http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5011a1.htm>

Centers for Disease Control/National Institutes of Health (CDC/NIH). 1999. Biosafety in Microbiological and Biomedical Laboratories, 4th ed.

<http://www.cdc.gov/od/ohs/biosfty/bmbl4/bmbl4toc.htm>

NIOSH Alert: Preventing Needlestick Injuries in Health Care Settings, 1999

<http://www.cdc.gov/niosh/2000-108.html>

Centers for Disease Control/National Institutes of Health (CDC/NIH). 1995. Primary Containment for Biohazards: Selection, Installation and Use of Biological Safety Cabinets.

<http://www.orcbs.msu.edu/biological/bsc/BSC.htm>

Fleming, D et. al., eds. 1994 Laboratory Safety, Principles and Practices, 2nd ed. AMS Press, Washington, DC.

Block, S.S. 1991. Disinfection, Sterilization, and Preservation, 4th ed. Lea and Febiger, Philadelphia.