Bloodborne Pathogens Exposure Control Plan

1.0 PURPOSE:
The Indiana University Bloodborne Pathogens (BBP) Exposure Control Plan is intended to:
1.1 Provide all IU workers with the necessary information, work rules and forms to enable them to comply with the requirements of the OSHA Bloodborne Pathogens Exposure Control Standard
1.2 Inform IU workers of the potential hazards associated with contact with human blood or “other potentially infectious materials” (OPIM).
1.3 Provide information on appropriate safe work practices when working with human blood or OPIM.

2.0 REGULATORY REFERENCES:
29 CFR 1910.1030, Occupational Safety and Health Act (OSHA) Standard for Occupational Exposure to Bloodborne Pathogens

3.0 SCOPE:
This document is intended as a master document, applicable to all affected personnel at Indiana University-Bloomington, and the IU regional campuses – IU Northwest, IU South Bend, IU Kokomo, IU East, and IU Southeast. It addresses all applicable regulatory requirements. Additional information needed by a specific department or group should be added in the appendices.

The Bloodborne Pathogens Exposure Control Plan applies to all workers, including part-time, temporary, probationary, and students, who may as part of their jobs come into contact with persons or items which are infectious or potentially infectious for bloodborne pathogens on a daily or near daily basis.

The OSHA standard focuses primarily on three viruses with bloodborne transmission: Hepatitis B virus, Hepatitis C virus, and Human Immunodeficiency Virus (HIV). There are other less common viruses with bloodborne transmission; risk from all can be minimized using the protocols and practices presented in this plan.

4.0 ELEMENTS OF THE PROGRAM:
Per OSHA, the program must include the elements listed below. Specific procedures and other information can be found in the appendices of this plan.
4.1 Recordkeeping (Section 6.2)
4.2 Exposure Determination (Appendix C)
4.3 Methods of Compliance (Appendix D1 and D2)
4.4 HIV, HBV and HCV in research laboratories (Appendix E)
4.5 Hepatitis B vaccination information (Appendix F)
4.6 Post-exposure follow-up (Appendix G)
4.7 Labels and Signs (Appendix H)
5.0 ADMINISTRATION, RESPONSIBILITIES AND COMPLIANCE:
5.1 Office of Environmental Health and Safety Management (EHS)
5.1.1 Review and update the campus Exposure Control Plan annually and as new information becomes available.
5.1.2 Provide overall administrative guidance and supervision for the Exposure Control Plan for all workplaces.
5.1.3 Aid departments or sub-units in determining those employment positions or tasks which qualify for reasonable anticipation of exposure to bloodborne pathogens.
5.1.4 Provide training to all those staff having potential occupational exposure to bloodborne pathogens and whose departments or sub-units do not provide training internally.
5.1.5 Aid these departments or sub-units in determining appropriate personal protective equipment, work practices, engineering controls, and housekeeping schedules.
5.1.6 Maintain training records and Hepatitis B vaccination records for all workers covered by this program.

5.2 Workers with human blood or OPIM potential exposure
5.2.1 Comply with all elements of the Exposure Control Plan as they apply to work-related tasks and procedures with potential exposure; this will include
  5.2.1.1 Following appropriate work practices;
  5.2.1.2 Using personal protective equipment (PPE);
  5.2.1.3 Using appropriate engineering controls.
  5.2.1.4 Attending annual, required training sessions on controlling exposure to bloodborne pathogens in the workplace; and
  5.2.1.5 Reporting all exposure incidents to the work supervisor or other responsible individual immediately, or as soon as feasible, after they occur.

5.3 Indiana University Health Center
Indiana University’s Health Center has responsibility for medical aspects of this program as they apply to non-paid students. NOTE: Paid workers are covered through contracted services at IU Health Urgent Care East (formerly PromptCare) or other contractors at regional campuses.

5.3.1 Provide Hepatitis B vaccination for unpaid students working with potential BBPs.
5.3.2 Maintain student records relative to Hepatitis B vaccination.
5.3.3 Evaluate students reporting exposure incidents and provide appropriate diagnostic tests, treatment, and follow-up evaluation and counseling.
5.3.4 Maintain student records relative to post-exposure incidents and treatment.
5.3.5 Make recommendations to EHS with regard to BBP issues affecting the university.

5.4 IU Health Urgent Care Facility (See Appendix K for providers at regional campuses)
This facility is currently contracted to provide work-related medical care for IU-paid workers including:

5.4.1 Provide Hepatitis B vaccination for workers working with potential BBPs.
5.4.2 Maintain worker records relative to Hepatitis B vaccination.
5.4.3 Evaluate workers reporting exposure incidents and provide appropriate diagnostic tests, treatment, and follow-up evaluation and counseling.
5.4.4 Maintain worker records relative to post-exposure incidents and treatment.
5.5 Health Care Facilities at Regional Campuses
Facilities used by regional campuses are listed in Appendix K.

5.6 IU Biosafety Office
5.6.1 Advise BSL-2 (and higher) laboratories that anticipate exposure to human tissues, fluids, cell lines, or pathogens of the need to comply with the requirements of the OSHA BBP standard.
5.6.2 Advise the workers in BSL-2 (and higher) laboratories who have potential occupational exposure to bloodborne pathogens to seek training from EHS.
5.6.3 Advise workers in BSL-2 (and higher) with potential occupational exposure of the opportunity for Hepatitis B vaccination.
5.6.4 Observe the use of personal protective equipment, work practices, engineering controls and housekeeping practices, and notify EHS of non-compliance with the regulation.

5.7 Institutional Biosafety Committee (IBC)
5.7.1 Assist EHS members of the IBC in identifying biological protocols that use materials or procedures addressed by the BBP standard so that EHS can contact affected personnel and make them aware of the regulatory requirements.
5.7.2 Make recommendations regarding the content of the BBP Exposure Control Plan as necessary if changes are needed.
5.7.3 Make recommendations regarding high-risk zoonotic diseases that may be covered under the BBP Exposure Control Plan.

5.7 Principal Investigators, Program Managers and others with responsibilities for work assignments
5.7.1 Identify those jobs that fit the definition of "occupational exposure" described in OSHA 1910.1030 and identify those employment positions within each department or appropriate sub-unit. Specify those tasks or procedures in which occupational exposure is likely to occur. (See Appendix C)
5.7.2 Customize the Exposure Control Plan for specific areas by adding appropriate information for each department or sub-unit in the appendices of this document.
5.7.3 Ensure that all existing and new workers are informed and trained in all elements of the Exposure Control Plan, as described in Section 6.0 of this document.
5.7.4 Provide ongoing evaluation of the elements provided in appendices and update or modify them as needed to reflect current knowledge on effective infection control procedures, work practice controls, personal protective equipment and engineering controls which are likely to reduce the frequency of exposure incidents.

5.8 Directors, Deans, Department Heads and other Senior Administrators
5.8.1 Assume overall responsibility for compliance with the Bloodborne Pathogens Exposure Control Plan and the associated OSHA regulation.
5.8.2 Enforce all elements of the Exposure Control Plan within the work setting and initiate progressive disciplinary proceedings when necessary as outlined by Human Resources Administration.
6.0 REQUIRED TRAINING AND RECORDKEEPING:

6.1 Training
6.1.1 All individuals must be trained before beginning any job or task with the potential for exposure to bloodborne pathogens and at least annually after that. Training must be provided by a “knowledgeable individual” per OSHA definition.
6.1.2 Training material must be appropriate in content and vocabulary to educational level, literacy, and language of the individuals receiving training.

Training must include:
6.1.3 Information on accessing the text of the OSHA BBP regulation;
6.1.4 An explanation of the contents of the OSHA regulation;
6.1.5 A general explanation of the epidemiology and symptoms of bloodborne diseases;
6.1.6 An explanation of the modes of transmission of bloodborne pathogens;
6.1.7 An explanation of this exposure control plan and a means by which the trainee can obtain a written copy of same;
6.1.8 An explanation of appropriate methods for recognizing tasks that may involve exposure to blood and other potentially infectious materials;
6.1.9 An explanation of appropriate engineering controls, administrative controls and use of PPE;
6.1.10 Information on the Hepatitis B vaccine;
6.1.11 Information on appropriate actions and reporting should exposure to blood or OPIM occur, including post-exposure follow-up; and
6.1.12 An explanation of signs and symbols used in the facility.

6.2 Recordkeeping
6.2.1 Training records for initial and annual BBP training shall be maintained in the EHS training database.
6.2.2 Records of Hepatitis B vaccination (Decline/Accept) are confidential in nature and are maintained by the EHS in a secure manner.
6.2.3 Records of potential exposure to BBPs must, per OSHA, be maintained. At IU this is the responsibility of the Workers’ Compensation Group. The Workers’ Compensation Group also notifies the Biosafety Office and the EHS BBP Program Coordinator. Such records are kept confidential.
6.2.4 Medical records are considered private and are maintained by the physician. Exposure statistics must be provided by physicians to EHS who maintains appropriate records and reporting.
APPENDIX A: DEFINITIONS

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

**BBP - Bloodborne Pathogens** - pathogenic microorganisms that are present in human blood and can cause disease in humans. These include, but are not limited to, Hepatitis B Virus (HBV), Hepatitis C Virus (HCV), 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.

**Contaminated Laundry** – laundry that has been soiled with blood or other potentially infectious materials or may contain sharps.

**Contaminated Sharps** - any contaminated object that is sharp or has the potential to be a sharp that can penetrate the skin including, but not limited to, needles, scalpels, broken glass, broken capillary tubes, and exposed ends of dental wires.

**Decontamination** - the use of physical or chemical means to remove, inactivate, or destroy bloodborne pathogens on an item or surface 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.

**Engineering Controls** – controls such as sharps containers, self-sheathing needles, safer medical devices that isolate or remove the bloodborne pathogen hazards from the workplace.

**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 worker’s performance of duties.

**Hand Washing Facilities** – a facility providing an adequate supply of running, potable water, soap, and single-use towels or hot-air drying machines.

**HBV** - Hepatitis B Virus

**HCV** – Hepatitis C Virus

**HIV** - Human Immunodeficiency Virus

**Occupational Exposure** - any reasonably anticipated skin, eye, mucous membrane, or parenteral contact (i.e., piercing through the skin or splashing of mucous membrane) with blood or other potentially infectious materials (see below) that may result from the performance of a worker’s duties.

**EHS** – Indiana University Office of Environmental Health and Safety Management

**OPIM** - Other Potentially Infectious Material
Other Potentially Infectious Material (OPIM) - materials other than blood, which pose a potential health risk including:

- 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;
- Any unfixed tissue or organ (other than intact skin) from a human (living or dead);
- 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;
- Blood or body fluids of animals that have been intentionally or are suspected of having been exposed to human bloodborne pathogens in research, in production of biologicals, in the in vivo testing of pharmaceuticals, or other procedures.

PPE - Personal Protective Equipment - specialized clothing or equipment worn by a worker for protection against a hazard.

Regulated Waste - liquid or semi-liquid blood or other potentially infectious material; contaminated items that would release blood or other potentially infectious material 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 material.

Research Laboratory – a laboratory producing or using research-laboratory-scale amount of HIV, HBV, or HCV. Research laboratories are not production facilities.

Sharps with engineered injury protection – a 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.

Sterilize - the use of a physical or chemical procedure to destroy all microbial life.

Source Individual – any individual, living or dead, whose blood or other potentially infectious materials may be a source of occupational exposure to the worker.

Universal Precautions - An approach to infection control which treats all blood and other potentially infectious materials as if known to be infectious for HIV, HBV, and other bloodborne pathogens. This approach includes the use of barrier precautions by workers to prevent direct skin, parenteral, or mucous membrane contact with blood or other body fluids that are visibly contaminated with blood.

Work Practice Controls – controls that reduce the likelihood of exposure by altering the manner in which a task is performed.
APPENDIX B: SPECIFIC PROCEDURES can be added by User
APPENDIX C: WORKER EXPOSURE DETERMINATION BY TASK
Each department shall list worker positions and tasks that create potential exposure. Each department shall then identify specific workers who are a part of the positions listed or are required to complete any listed tasks.

Workers identified in this manner must be included in this Bloodborne Pathogens Program and must comply with all aspects of the Exposure Control Plan. This exposure determination shall be made without regard to the use of personal protective equipment. All workers must be notified concerning their occupational exposure status per this analysis.

Department/Sub-Unit Exposure Determination List

Detailed Description of Tasks:
Task A:

Task (n)

Tasks with Potential Exposure

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<tr>
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<th>Task A</th>
<th>Task B</th>
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<th>Task (n)</th>
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<tr>
<td>Job 1</td>
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<td>Job (n)</td>
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Names of workers in each Job Category:
Job 1:

Job (n):

Supervisor’s Signature ___________________________________________ Date ____________
APPENDIX D1: PROCEDURES AND EQUIPMENT FOR REDUCING EXPOSURE RISKS (METHODS OF COMPLIANCE)

UNIVERSAL PRECAUTIONS
The basic tenant of “Universal Precautions” is treating all blood and other potentially infectious materials as if they are infected. Universal precautions shall always be used when working with blood or other potentially infectious materials.

This approach recognizes that there is no practical way to determine the infectious status of all blood or OPIM; thus, it is prudent to assume that the material is infectious.

Universal precautions include elements listed below, including use of engineering controls, work practice controls and personal protective equipment.

ENGINEERING CONTROLS
Engineering controls include all measures designed to reduce the potential for contact between workers and potentially infectious materials by either removing the hazard or isolating the worker from exposure. Examples of engineering controls include puncture-resistant sharps containers, Plexiglas splash shields, mechanical pipettes, self-sheathing needles, biological safety cabinets, and use of disposable barrier materials to cover and prevent contamination of environmental surfaces and equipment.

Appropriate engineering controls shall be provided by each department and should be used in preference to other control methods in order to limit occupational exposure. Provision of these controls is the joint responsibility of the supervisor and the department head.

Engineering control mechanisms shall be examined and maintained or replaced on a regular schedule to ensure their effectiveness. Each department or appropriate sub-unit shall be responsible for evaluation and maintenance of engineering controls in their area jointly with the supervisor and the department head. These responsibilities shall include:

- Scheduling of inspections. Biological safety cabinets are to be certified at least annually according to the National Sanitation Foundation.
- Written documentation of the following: inspection dates, evaluations, maintenance performed, and persons responsible.

WORK PRACTICE CONTROLS
Work practice controls are those measures which reduce the likelihood of exposure by altering the manner in which a task is performed. Specific work practices required in addition to those listed below shall be developed by each unit covered by this Exposure Control Plan and documented by addition to Appendix B.

The following work practice controls shall be instituted for workers with occupational exposure on a daily or near daily basis to blood and other potentially infectious material.
Hand Washing
Readily accessible hand washing facilities shall be provided for workers.

When hand washing facilities are not available, workers shall be provided with antiseptic wipes or an antiseptic hand cleanser and clean cloth/paper towels. When these alternatives are used, workers shall wash hands with soap and water as soon as feasible, as the antiseptic commonly used in these products is not believed to be totally effective against the Hepatitis B virus.

Hands and any other exposed skin surfaces must be washed with soap and running water and mucous membranes should be thoroughly flushed with water as soon as possible after contact with blood or other potentially infectious material.

Hands must be washed whenever there is visible contamination with blood or body fluids as follows:
- After completion of work;
- After removing gloves and between glove changes; Before leaving the work area;
- Before eating, drinking, smoking, applying cosmetics or lip balm, changing contact lenses;
- When using bathroom facilities;
- Before all other activities which entail hand contact with mucous membranes, eyes or breaks in the skin.

Handling Contaminated Sharps
Any object that is contaminated with blood or OPIM and is capable of penetrating the skin, is considered a contaminated sharp. Breakable equipment or supplies are potential sharps if they can create surfaces capable of penetrating the skin. Examples of sharps include needles, scalpels, broken capillary tubes, certain dental instruments, and exposed ends of dental wires. Needle sticks are an efficient means of transmitting bloodborne diseases. Because of their high potential for transmitting bloodborne pathogens to workers, contaminated sharps should be handled as follows:
- Contaminated needles and other contaminated sharps or potential sharps shall not be recapped, removed or bent unless no alternative is feasible or unless required by a specific medical procedure (e.g. procedures such as blood gas analysis, inoculation of a blood culture bottle, or administration of incremental doses of medication to a single patient);
- In situations where recapping or needle removal is required, it shall be accomplished only by means of a mechanical device or a one-handed technique;
- All contaminated sharps shall be transferred to rigid, puncture-resistant, labeled, leak-proof containers immediately or as soon as possible after use. They may not be stored or handled prior to decontamination in such a way as to require workers to reach their hands into the container to retrieve the item.

Written Procedures or Protocols
When practical, proper performance of an at-risk task should be documented in a written procedure and workers should be required to follow the procedure. Procedures should include cautions and warnings to identify steps which are particularly hazardous.
Shipping Blood or OPIM
Specimens of blood and other human tissues, fluids, and cell lines must be shipped per International Air
Transport Association (IATA) regulations. These materials can be shipped as “Exempt Human Specimens”
provided they do not contain infectious agents or are not reasonably expected to contain infectious agents.
Specimens that are known to contain infectious agents, or are reasonably expected to contain infectious
agents, are classified as "Category B" (specimens contaminated with disease-causing agents) or "Category
A" (specimens contaminated with infectious agents that can cause serious or lethal disease and present a
health risk for the community) and must comply with the requirements below appropriate to those
categories.

“Exempt Human Specimens”:
• IATA Triple Packaging
  o Leak-proof primary container; fragile primary containers must be individually wrapped
  o Leak-proof secondary receptacle; Ziploc bags must be sealed to ensure they will not open
    and spill contents during shipment
  o Outer package must be of adequate strength for capacity, mass, and intended use, and
    have minimum dimensions of 4 inches x 4 inches
• Shipping documentation must include an itemized list of the contents and include the words "Exempt
  Human Specimen”.

“Category B” shipments must conform to the requirements for “Exempt Human Specimens” plus the
additional requirements listed below:
• IATA Category B Triple Packaging
  o A primary container no larger than one liter
  o The primary or secondary container must withstand an internal pressure of 95 kPa at
    minus 40 C to minus 55 C
  o Outer packaging must be rigid, at least 100 mm (or 4 inches) in two dimensions; maximum
    size no larger than 4 liters or 4 kilograms
  o The package must pass the drop test, i.e., withstand being dropped from a height of 1.2
    meters
  o The outer packaging or air way bill must include the name and telephone number of the
    responsible person (3rd party contracted-vendor, available by phone 24 hours a day, seven
    days a week; contact the Biosafety Office or EHS for information)

Contact the Biosafety Office for assistance with Category B classification, identification and
documentation, and for additional shipping requirements for Category A shipments.

Contaminated equipment or samples must be decontaminated, if feasible, using approved methods prior
to servicing or shipment. When such contamination is not feasible, the equipment must be clearly
labeled as a Biohazard to alert workers and transportation service personnel of the need to use universal
precautions when transporting these items.

For detailed shipping and labeling instructions for biohazardous materials contact the Biosafety
Office: 812-856-1258 or 812-856-3630, or by email at Biosafe@indiana.edu
**Other Work Practice Controls**

All procedures involving direct handling of blood or other potentially infectious material should be accomplished in a manner which minimizes splashing, spraying, spattering, or aerosol production of other potentially infectious material.

Mouth pipetting/suction of other potentially infectious material and all other material is prohibited.

Eating, drinking, smoking, applying cosmetics, and handling contact lenses are prohibited in work areas where blood or OPIM are used or stored.

Food or drink storage is prohibited in work areas (e.g., refrigerators, freezers, shelves, cabinets, counter tops, bench tops) where blood or OPIM are used or stored.

Refrigerators or freezers used for storage of blood or specimens may not be used for storage of food or drink.

**NOTE:** Other work practice controls may be appropriate to the task being performed. These should be documented, added to this section, and made available to all affected workers.
**Personal Protective Equipment (PPE)**

Personal protective equipment includes any item which the worker wears or uses on his/her person to provide barrier protection of the skin or mucous membranes from contamination by blood or other potentially infectious material. Examples include gloves, gowns, lab coats, face shields, masks, eye protection, mouthpieces, resuscitation bags, pocket masks, and other ventilation devices.

The use of appropriate PPE is required as supplementary protection in all situations where occupational exposure remains after institution of both engineering controls and work practice controls. The use of appropriate PPE is required for all workers when engaged in tasks involving contact with blood, body fluids, or any potentially infectious material where occupational exposure is reasonably anticipated.

The only exception to this requirement shall be those rare and extraordinary occasions when, in the professional judgment of the worker, wearing of required PPE would have posed an increased hazard to the worker or coworkers. Such situations must be investigated and documented to determine whether such occurrences can be prevented.

Each department or appropriate sub-unit shall determine appropriate types of PPE necessary to provide barrier protection for their workers and provide this PPE at no cost to the worker. Appropriate PPE shall be readily accessible to all workers for whom it is required and shall be provided in appropriate sizes.

The determination of the exact types of PPE is dependent on the procedure(s) being performed by each worker and the type and amount of exposure which is anticipated. PPE shall be judged as appropriate only if it does not permit blood or other potentially infectious materials to pass through or reach the worker'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 shall be used.

Departments shall provide clean, laundered and/or disposable PPE at no cost to the worker. Only those items of clothing intended to protect the worker's person, work clothes, or street clothes against contact with blood or OPIM are considered to be PPE in this context.

**Gloves**

Gloves must be worn by all workers when performing tasks involving contact with blood, OPIM, or when handling or touching contaminated items or surfaces.

The type of gloves (e.g. sterile surgical, non-sterile examination, or utility gloves) selected should be impervious to liquids and strong enough to withstand the rigors of the task to be performed. Vinyl or nitrile gloves are intended to cover skin defects on the hands and are not intended to protect from sharps.

The following guidelines are recommended by the Centers for Disease Control (Morbidity and Mortality Weekly Report, Vol. 24, 6/24/88)
Sterile gloves should be used for procedures involving contact with normally sterile areas of the body.

Examination gloves should be used for procedures involving contact with mucous membranes, unless otherwise indicated, and for other patient care or diagnostic procedures that do not require the use of sterile gloves.

Surgical and examination gloves may not be re-used. Washing gloves with soap or detergents may cause enhanced penetration of liquids through undetected holes in the glove. Disinfecting agents may cause deterioration.

Use general-purpose utility gloves (e.g., rubber household gloves) for housekeeping chores involving potential blood contact and for instrument cleaning and decontamination procedures. Utility gloves may be decontaminated and reused but should be discarded if they are peeling, cracked, discolored, punctured, torn, or if there is other evidence of deterioration.

Gloves shall be changed under the following circumstances:

- Between patient contacts;
- If visibly contaminated with blood or body fluids (although certain repetitive tasks in laboratory settings may be completed before gloves are changed, i.e., wiping the probe on a whole blood analyzer);
- When physical damage to the integrity of the glove is observed (e.g., tearing, surface defects).

Contaminated disposable gloves should be discarded into a biohazard container immediately after removal.

Workers with known minor skin defects (e.g., cuts, abrasions, burns, dermatitis, or exudative lesions) on arms, hands, face or neck should cover these areas with a water-resistant occlusive bandage in addition to the use of personal protective equipment.

Workers with weeping or exudative lesions or dermatitis, which cannot be securely covered, shall refrain from direct patient care and handling clean or soiled patient equipment (Indiana State Board of Health 410 IAC 1-4-8 Precautions).

**Masks, Eye Protection, and Face Shields**

These barrier devices are intended to protect the eyes, nose and mouth from blood or body fluid droplets. Examples are disposable facemasks, plastic or disposable face shields, protective eyeglasses with non-permeable side vents, and goggles.

Workers shall wear protective face shields or masks, and eye protection whenever splashes, spray, spatter or droplets of blood or OPIM may be generated, and eye, nose or mouth contamination can be reasonably anticipated. Plexiglass splash shields, either bench mounted or hung from the ceiling or from a ring stand, may be used in place of facial personal protective equipment. These protective devices shall be used while uncapping all blood or body fluid samples when the risk of droplet formation and spattering is present (e.g., when uncapping sample tubes).
Workers shall remove masks, eye protection, and face shields when leaving the work area. All disposable masks and shields shall be discarded in a biohazardous waste container when visibly contaminated or penetrated by blood or OPIM. Reusable eye wear and shields, which are visibly contaminated, should be washed with soap and water using gloved hands.

**Protective Body Clothing**

Protective body clothing, such as gowns, lab coats, lab jackets, or aprons, shall be provided when needed to cover and protect work clothing and exposed skin from contamination with potentially infectious blood or body fluids. Use of protective clothing may be required during patient treatment, when handling contaminated materials, or during decontamination procedures.

Protective gowns or laboratory coats may be made of cloth or of disposable impervious material depending on the degree and type of contamination anticipated. Protective clothing items should be long-sleeved and kept fastened at all times to maximize protection of exposed skin and work clothes.

Protective clothing shall be changed immediately, or as soon as possible, after becoming visibly contaminated with blood or body fluids.

All protective clothing items shall be removed before leaving the laboratory or work area; contaminated or soiled gowns or coats may not be worn in public areas. Public areas include, but are not limited to, worker break rooms, lounges, eating areas, storage areas, and rest rooms.

Contaminated gowns or coats shall be laundered or disposed of according to Biosafety Committee policy for biohazardous waste or contaminated linen. Disposable gowns shall be discarded in biohazard containers or bags. Protective clothing may not be taken home to be washed or discarded.

**Cardiopulmonary Resuscitation Masks**

Workers whose tasks include participation in cardiopulmonary resuscitation (CPR) shall use a one-way mask when performing mouth-to-mouth resuscitation. Masks shall be provided and made readily available wherever the need for CPR may be reasonably expected to occur (Source: Indiana Department of Health 410 IAC 1-4-8).

**Housekeeping**

All work areas shall be maintained in a clean and sanitary condition. To ensure this, each department or sub-unit shall establish and implement a written schedule for specific cleaning and methods of decontamination for affected work areas. Frequency and methods of decontamination should be based on the location within the facility, the type of surface to be cleaned, type of soil present, and tasks or procedures being performed in the work area. These schedules and instructions must be responsive to the following elements:

- All equipment and working surfaces must be cleaned, and then decontaminated after contact with blood or OPIM.
Contaminated work surfaces must be decontaminated with an appropriate disinfectant at the following times:

- After completion of procedures;
- Immediately, or as soon as possible, after surfaces are overtly contaminated or after any spill of blood or OPIM; and
- At the end of a work shift if the surface may have become contaminated since the last cleaning.

Solutions which are acceptable disinfectants include, but are not limited to the following:

- Sodium hypochlorite, five-tenths percent (0.5%) concentration, by volume (common household bleach should be diluted 1 part bleach to 10 parts water). The solution shall be dated and shall not be used if it is more than 24 hours old.
- Only chemical agents that have an Environmental Protection Agency (EPA) registration number and a TB kill claim as required by the Center for Disease Control (CDC) may be used.

The use of protective barrier coverings such as plastic wrap, aluminum foil, or imperviously-backed absorbent paper is useful in covering work surfaces or for covering equipment or items which may be difficult to clean and decontaminate effectively. When such coverings are used, they must be removed and replaced as soon as they become overtly contaminated, or at the end of the shift if they have become contaminated during the shift.

All bins, pails, cans, or other receptacles which are re-used and which may become contaminated must be inspected and decontaminated on a regularly scheduled basis. These receptacles should also be cleaned and decontaminated immediately or as soon as possible once visible contamination is detected.

Broken glassware that might be potentially contaminated should never be picked up with unprotected hands. Mechanical means such as a brush and dustpan, tongs, or forceps should be used. These items should then be disposed of in a puncture-resistant container, as for contaminated sharps.

Reusable sharps that become contaminated should not be stored or processed in such a way that workers are required to reach by hand into containers where these sharps have been placed.
APPENDIX D2: CONTAINING AND HANDLING REGULATED WASTE
Containers for Contaminated Sharps
All contaminated sharps and potential sharps must be discarded immediately after use, or as soon as possible into containers which meet the following requirements:

- Closable and not able to be opened except by use of tools;
- Puncture-resistant;
- Leak-proof on bottom and sides to prevent leakage of contaminated liquids;
- Labeled using the universal biohazard symbol and the word "biohazard".

Sharps containers must be easily accessible, maintained in an upright position during use, and replaced routinely so that they are not overfilled.

When moving contaminated sharps containers, the containers must be closed so that contents do not spill or protrude.

If leakage of the primary container is possible, it must be placed into a second container that is closable, labeled, and shall safely contain all contents without leaking.

Reusable containers should not be opened, emptied, or cleaned manually or in any manner that would expose workers to the risk of injury.

Other Regulated Waste Containers
Regulated waste shall be placed in containers that can be closed and labeled using the universal biohazard symbol and the word "biohazard". Containers must be constructed to contain all contents and prevent leakage of fluids during handling, storage, transport or shipping. Containers must be closed prior to being handled, stored, or transported.

If outside contamination of a regulated waste container occurs, it must be placed in a second container that meets the requirements stated above.

Waste Treatment and Disposal

IU Health Center Procedures
Biohazardous waste generated in the IU Health Center is removed by a licensed vendor and disposed of in accordance with OSHA Standard 1910.1030. Similar arrangements exist at the regional campuses.

Non-IU Health Center Procedures
Biohazardous waste generated on campus at other than the IU Health Center may be autoclaved on site or collected and transported for treatment. If waste is autoclaved, the container must be labeled as "treated" prior to disposal with general refuse. Syringe and sharps cannot be disposed of with general refuse, but must be autoclaved and incinerated.

If an autoclave is unavailable for treatment on site, collection and transportation must be handled by the originating department and prior arrangements made for disposal with the Office of Environmental Health and Safety Management. Note: any waste that contains human tissues or fluids must be disposed of as regulated waste which will be collected by EHS and disposed of in accordance with OSHA Standard 1910.1030.
Laundry
All workers who have contact with contaminated laundry must wear protective gloves and other appropriate personal protective equipment. All contaminated laundry shall be handled as little as possible with minimum agitation during handling. All contaminated laundry shall be bagged or put into containers at the location where it is used. It should not be sorted or rinsed prior to being placed in bags or containers. Bags or containers for contaminated laundry shall be clearly labeled or color-coded as containing potentially infectious material. When contaminated laundry is wet or when it is determined that there is a reasonable likelihood of leakage from the bag or container, it must be placed and transported in bags or containers which shall prevent liquids from soaking through or leaking to the exterior.
APPENDIX E: HIV, HBV, AND HCV RESEARCH LABORATORIES

Any research laboratories or production facilities which are involved in the culture, production, concentration, experimentation, or manipulation of HIV or HBV must comply with the following OSHA special regulations affecting its activities in addition to the other requirements set forth in this plan. These regulations do not apply to clinical or diagnostic labs, which are engaged solely in the analysis of blood, tissues, or organs.

SAFETY REQUIREMENTS FOR HIV, HBV AND HCV RESEARCH AND PRODUCTION FACILITIES

Standard Microbiological Practices
These facilities shall comply with standard microbiological practices as set forth by the CDC for Biosafety Level 2 (BSL-2). All regulated waste shall either be incinerated or decontaminated by a method such as autoclaving, which is known to destroy bloodborne pathogens.

Special Practices
The following special practices shall also be instituted:
- Laboratory doors shall be kept closed when work involving HIV, HBV, or HCV is in progress.
- Contaminated materials which leave the site must be placed in durable, leak-proof, labeled containers that are closed before leaving the work area.
- Access to the work area shall be limited to authorized persons. Written entry and exit procedures and policies shall be established and implemented.
- Warning signs containing the universal biohazard symbol shall be posted on all access doors whenever potentially infectious materials or infected animals are present in the work area or containment module.
- All activities involving OPIM shall be conducted in biological safety cabinets or other physical-containment devices. No work with these OPIM shall be conducted on the open bench.
- Appropriate PPE must be used in the work area and animal rooms. PPE may not be worn outside the work area and must be decontaminated before being laundered.
- Gloves are required when handling infected animals or making hand contact with OPIM.
- Vacuum lines shall be protected with liquid disinfectant traps and high-efficiency particulate air (HEPA) filters (or filters of equivalent or superior efficiency). Filters shall be checked routinely and maintained or replaced as needed.
- 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 (those in which the needle is integral to the syringe), and preferably self-sheathing syringes shall be used for the injection or aspiration of other potentially infectious materials. Needles and syringes shall be handled with extreme caution at all times. Needles may not be bent, sheared, replaced in the sheath or guard, (unless resheathed by a one-handed method) or removed from the syringe after use. The needle and syringe shall be promptly placed in a puncture-resistant container and autoclaved or otherwise decontaminated before incineration.
• All spills shall be contained immediately and cleaned up by appropriate professional staff or by others who have been properly trained and equipped to work with concentrated potentially infectious materials.
• All spills or accidents, which result in an exposure incident, shall be reported immediately to the laboratory director, departmental chair, manager or supervisor.
• A biosafety manual shall be prepared or adopted and reviewed and updated at least annually. Personnel shall be advised of potential hazards, shall be required to read instructions on practices and procedures and shall be required to follow them.

Safety Equipment
Each laboratory shall contain: readily available facilities for hand washing, an eye wash station, and access to an autoclave for decontamination of regulated waste.

Certified biological safety cabinets (Class I, II, or III) or other appropriate combinations of personal protection or physical containment devices (e.g., special protective clothing, respirators, centrifuge safety cups, sealed centrifuge rotors, containment caging for animals) shall be used for all activities with potentially infectious materials that pose a threat of exposure to droplets, splashes, spills, or aerosols. Biological safety cabinets shall be certified when installed or when moved and at least annually thereafter.

Safety Requirements for HIV, HBV, and HCV Production Facilities
The following criteria shall apply to all HIV/HBV/HCV Production Facilities:
• Work areas shall be separated from areas 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-door 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.
• Surfaces of doors, walls, floors and ceilings in the work area shall be water resistant and easily cleaned. Penetrations in these surfaces shall be sealed or capable of being sealed to facilitate decontamination.
• Each work area shall contain a sink for washing hands and a readily available eye wash station. The sink shall be foot, elbow, or automatically operated and shall be located near the exit door of the work area.
• Access doors to the work area or containment module shall be self-closing.
• An autoclave for decontamination of regulated waste shall be available within, or as near as possible, to the work area.
• A ducted exhaust-air ventilation system shall be provided which creates directional airflow that draws air into the work area through the entry area. Exhaust air shall not be re-circulated to any other area of the building, shall be discharged to the outside, and shall be dispersed away from occupied areas and air intakes.
Training Requirements for Workers in HIV/HBV/HCV Laboratories and Production Facilities

- Workers in HIV/HBV/HCV laboratories and production facilities are required to meet the following training criteria in addition to the training requirements of Section 6:
- Must demonstrate proficiency in standard microbiological practices and techniques and in the practices and operations specific to the facility must be established before workers are allowed to work with HIV or HBV.
- Must have had prior experience in handling human pathogens or tissue cultures before working with HIV, HBV or HCV.
- Workers who have had no prior experience handling human pathogens shall be provided with a training program. Initial work experience shall not include handling of infectious agents. A progression of work activities shall be assigned as techniques are learned and proficiency is developed. Workers shall not be allowed to participate in work activities involving infectious agents until after proficiency with such agents has been demonstrated.
APPENDIX F: HEPATITIS B VACCINATION/SCREENING

The Hepatitis B vaccine shall be made available to all workers identified as having potential occupational exposure on a daily or near daily basis to bloodborne pathogens. IU Health Urgent Care Facility provides these vaccinations for paid workers. The IU Health Center provides the vaccinations for unpaid students. Individual departments are responsible for the cost of this vaccine.

Vaccinations shall be available to all existing workers with occupational exposure after receiving training regarding the risk of exposure to bloodborne pathogens and within 10 working days of initial assignment to jobs with occupational exposure. Vaccination is not indicated for workers who have already had the HBV series, who have had antibody testing documenting immunity to HBV, or who have medical contraindications to the vaccine. Pre-screening is not a prerequisite for receiving the vaccination.

Workers may choose to accept or decline the vaccination, and must document this choice using the “Hepatitis B Vaccination Policy” form found below and online at:

http://www.ehs.iu.edu/forms.shtml

Workers that accept the vaccinations must fill out an “Authorization for Treatment/Testing (Non-Injury/Illness)” form at:

http://hr.iu.edu/workers/authform.html

Any worker who initially declines the recommended vaccination may elect to accept it at a later date if still employed in a position with potential occupational exposure.
Hepatitis B vaccine is available to all workers who could be expected to come into contact with human blood and other potentially infectious materials in the course of their work. There is NO CHARGE to the worker.

To accept the Hepatitis B vaccine you must:

1. Fill out an “Authorization for Treatment/Testing (Non-Injury/Illness)” form at:
   
   http://hr.iu.edu/workers/authform.html

2. Have your supervisor complete this form.

   ___________________________________________, who is a worker in
   ___________________________________________Department is _____ is not _____ eligible to receive the HBV
   immunization series.

   Date ____________________ Signature, Worker ____________________

   Date ____________________ Signature, Supervisor ____________________

3. Return to the appropriate address below.

   Employees should call IU Health Urgent Care East (812-353-6888) to schedule an appointment for vaccination;

   Students should call the IU Health Center (812-855-7688) to schedule the appointment.

Personnel must return this form to the Office of Environmental Health and Safety Management, 1514 E, Third Street.

New employees will not be given Hepatitis B vaccine until authorization for employment is satisfactory.

If you do not wish to have the vaccine at this time, please sign the refusal form.

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REFUSAL SECTION FOR HEPATITIS B VACCINE

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, unless I have been previously vaccinated for Hepatitis B, 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.

Date ____________________ (Print) Name and I.D.# ____________________ Signature ____________________
APPENDIX G: POST-EXPOSURE EVALUATION AND FOLLOW-UP

Medical Examination after Exposure
Exposure incidents are defined as any specific occupational incident involving eye, mouth, other mucous membrane, skin, or parenteral contact with blood or other potentially infectious materials. Workers are required to immediately report all exposure incidents to their work supervisor. Supervisors shall send the employee to IU Health Urgent Care Facility or the IU Health Center, as appropriate. The “Employer Authorization for Treatment” form is required and may be obtained at:
http://hr.iu.edu/workers/index.html

Following a report of an exposure incident, the IU Health Urgent Care Facility or the IU Health Center, as appropriate, shall provide a confidential medical evaluation and follow-up to the worker.

Exposure incidents must be documented by the employee’s supervisor on an Occupational Injury-Illness Report form available in each department or online at:
http://hr.iu.edu/workers/index.html

At the time of medical evaluation, the completed form shall be provided to IU Health Urgent Care or the IU Health Center. If the incident occurred in a BSL-2 (or higher) laboratory, a copy shall be provided to EHS.

The following information must be included:
- The routes of exposure
- The circumstances under which the exposure incident occurred
- Identification and documentation of the source individual if possible, whenever possible, and with consent of the individual, the source should be tested to determine HIV, HBV, and HCV status unless it is already known. The results of these tests shall be disclosed to the exposed worker but may not be otherwise disclosed to preserve the confidentiality of the source individual.

Collection and Testing of Blood for HIV/HBV/HCV Status
The testing of the exposed worker's blood shall be done as soon as feasible after obtaining consent. If the worker consents to baseline blood testing, but not to HIV testing, the samples must be stored and preserved for 90 days. If within that time the worker consents to further testing, it shall be done as soon as possible.

Post-Exposure Prophylaxis and Follow-Up
When post-exposure prophylaxis is medically indicated, IU Health Urgent Care or IU Health Center for students, protocols for post-exposure prophylaxis to HBV or HIV shall be followed.

A written evaluation of the exposure incident shall be provided to the worker within 15 days of the completion of evaluation. IU Health Urgent Care or the IU Health Center shall provide counseling to the individual with exposure.
Procedure for Medical Follow-up to Potential Exposure to BBP

- Make site bleed, if practical.
- Wash the area thoroughly.
- Notify supervisor/department head of the accident.
- The supervisor should fill out the Indiana University Occupational Injury-Illness Report:
  - [http://rmweb.indiana.edu/orm/Forms/incident.cfm](http://rmweb.indiana.edu/orm/Forms/incident.cfm) and forward the report to IU Health Urgent Care or the IU Health Center. If the injury occurred in a BSL-2 (or higher) research laboratory, a copy should also be sent to the Risk Officer for the Biosafety Committee (Office of the Vice President for Research Administration).
- The injured person must immediately go to IU Health Urgent Care or the IU Health Center, (as appropriate) for post-exposure evaluation. If the injury occurs after normal working hours, the person must go to the IU Health Bloomington Hospital.
- The injured person should take any materials, devices or specimens that may assist in determining the person’s risk status to the medical treatment facility.
- The attending medical professional will determine appropriate treatment, depending on the information available and the medical status of the injured person.
- The treatment facility will provide results of any testing within 15 days of the initial visit. If additional medical procedures are advised by the attending physician, the injured person must follow that medical advice.
Physician’s Evaluation of Bloodborne Injury

NOTE: This information is typical of that obtained by an attending physician addressing a potential bloodborne pathogens exposure and is provided for information only.

Employee’s Name
Employee’s University ID No.

Description of Injury/Exposure:

Employee History:
History of Hepatitis B: Yes No
Previous Hepatitis B vaccine: Date completed Booster?(date)
HB AB/AG Date Results
HIV-AB Date Results
Anti-HCV Date Results
Liver function tests: Normal Abnormal Not Indicated RPR

Source Patient History(if available)
History of Hepatitis B: Yes No
History of +HIV: Yes No
Previous Hepatitis B vaccine: Date completed Booster?(date)
HB AB/AG Date Results
HIV-AB Date Results
Anti-HCV Date Results
Liver function tests: Normal Abnormal Not Indicated RPR

RECOMMENDATIONS: (After review of above data)

• No treatment because evaluation suggests you were very unlikely to be exposed to any disease
• No treatment because you already have adequate immunity to Hepatitis B
• H-BIG: 1 dose 2 doses at 28 days
• Hepatitis B vaccine series (0-1-6 months) started Reason(s) for Hepatitis B vaccine:
• Hepatitis B vaccine booster; Date:
• Recommended HIV follow-up: baseline, 6 weeks, 3-6-12 months
• HIV counseling: yes no

Medical treatment recommended

Physician ___________________________ Date ___________________________
APPENDIX H: BIOHAZARD COMMUNICATION

Labels
Warning labels shall be affixed to containers of regulated waste, refrigerators and freezers containing blood or other potentially infectious material. Labeling also applies to other outer containers used to store, transport or ship blood or other potentially infectious materials. Labels are also required for equipment to be serviced or transported that has parts that are unable to be decontaminated. These labels must identify which portions of the equipment remain contaminated.

These labels must meet the following criteria.
- Include the biohazard legend depicted below:

| ![Biohazard Symbol](image)

- Have a fluorescent orange or orange-red colored background with lettering or symbols in a contrasting color.
- Be affixed as close as feasible to the container by string, wire, adhesive, or other method that prevents their loss or unintentional removal.

The following are exceptions to the labeling requirements.
- 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.
- Individual containers of blood or OPIM that are placed in a labeled container during storage, transport, shipment or disposal are exempted from the labeling requirement.

Signs
Signs that are fluorescent orange or orange-red, with lettering or symbols in a contrasting color, and bearing the biohazard legend (see above) shall be posted at the entrance to work areas for HIV and HBV research laboratories and production facilities.
APPENDIX I: FORMS, LINKS TO FORMS

Hepatitis B Vaccination Form:

http://www.ehs.indiana.edu/em/HepB_Form_12_2010.pdf

See Appendix F, this document

Occupational Injury Reporting Form for potential BBP Exposures:

Note: This form is to be used for reporting all sharps and needle sticks.

http://rmweb.indiana.edu/orm/Forms/Incident.cfm
**APPENDIX J: SAFETY NEEDLE/SHARPS EVALUATION FORM**

Name of Device: ___________________________  Name of Manufacturer: ________________

Applications of Device: ____________________________________________________________

Number of Times Used: _______

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

Please explain all problems with the device in the comments section.

1. The safety feature can be activated using a one-handed technique.  1 2 3 4 5 NA
2. The user’s hands remain behind the needle/sharp until activation of the safety mechanism is complete.  1 2 3 4 5 NA
3. The safety feature does not interfere with normal use of this product.  1 2 3 4 5 NA
4. Use of this product requires you to use the safety feature.  1 2 3 4 5 NA
5. A clear and unmistakable change (either audible or visible) occurs when the safety feature is activated.  1 2 3 4 5 NA
6. The device is easy to handle while wearing gloves.  1 2 3 4 5 NA
7. The device is easy to handle when wet.  1 2 3 4 5 NA
8. The device does not require more time to use than a non-safety device.  1 2 3 4 5 NA
9. The safety feature operates reliably.  1 2 3 4 5 NA
10. The exposed sharp is blunted or covered after use and prior to disposal.  1 2 3 4 5 NA
11. The safety feature works well with a wide variety of hand sizes and with a left-handed person as easily as with a right-handed person.  1 2 3 4 5 NA
12. Use of this product does not increase the number of sticks to the patient.  1 2 3 4 5 NA
13. Sterilization (if applicable) of this device is as easy as a standard device.  1 2 3 4 5 NA
14. The product does not require extensive training to be operated correctly.  1 2 3 4 5 NA
15. The device can be used without causing more patient discomfort than a conventional device.  1 2 3 4 5 NA

Would you recommend using this device?  

Yes  No

Comments:

Evaluator’s Name: ___________________________  Job Title: ___________________________

Department: ___________________________  Date: ___________________________

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*June 2011*  

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*Bloodborne Pathogens Exposure Control Plan*
APPENDIX K: ADDITIONAL REFERENCES AND RELATED PROGRAMS,

FREQUENTLY USED CONTACT INFORMATION:
IU Biosafety Office 856-5360
Environmental Health and Safety 855-6311
IU Health Urgent Care East 353-6888
IU Health Center 855-7688

FACILITIES USED BY REGIONAL CAMPUSES:
IU Kokomo Howard Regional Health System
   3500 South LaFountain Street
   Kokomo Indiana 46902
   765-453-0702

IU Southeast Immediate Care Center
   Floyd Memorial Hospital
   5130 Charlestown Road Suite 2
   New Albany Indiana 47150
   812-949-1577

IU East Reid Memorial Hospital and Health Care Services
   1401 Chester Boulevard
   Richmond IN 47374
   765-983-300

IU South Bend Memorial Center for Occupational Health
   2301 North Bendix Suite 500
   South Bend IN 46628
   765-647-1675

IU Northwest FirstMed Occupational Medicine and Urgent Care
   4519 West 5th Avenue
   Gary IN 46406
   219-944-1400

   751 E. 81st Place
   Merrillville IN 46410
   219-769-4400

   1217 US Hwy 41
   Schererville IN 46375
   219-322-6767

Source for complete text of 29 CFR 1910.1030, Occupational Exposure to Bloodborne Pathogens: