UNMC BLOODBORNE PATHOGENS EXPOSURE PLAN

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UNMC
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Bloodborne Pathogens Exposure Control Plan

UNMC follows the Occupational Safety and Health Administration's (OSHA) Bloodborne Pathogens Standard 29CFR 1910.1030, the Centers for Disease Control (CDC) guidelines, and legal requirements when making decisions regarding the rights and responsibilities of individuals potentially exposed to or currently under treatment for a bloodborne pathogen/disease. To ensure compliance with these authoritative regulations and provide guidance to UNMC staff, researchers, and students, a Bloodborne Pathogens Exposure Control Plan (ECP) has been designed to eliminate or minimize exposure to bloodborne pathogens such as the following:

- Hepatitis B Virus (HBV)
- Hepatitis C Virus (HCV)
- Human Immunodeficiency Virus (HIV), as well as other potentially infectiousbloodborne agents

All UNMC staff, researchers, and students who might be exposed to bloodborne pathogens need to become familiar with the Bloodborne Pathogens Exposure Control Plan. The ECP is intended to provide adequate information to prevent employees and students from exposure to human or infectious blood and body fluids, including human cell lines, tissue, research materials, or other potentially infectious materials. (Refer to IBC Policy 43 Human Cell Policy). All human and non-human primate derived materials (including tissues, cells, and cell lines) must be handled in accordance with the OSHA Bloodborne Pathogens Standard. (See Appendix II) The ECP describes the federal standard and provides information on how the standard is to be implemented. Refer to Appendix I for clarification of terminology or abbreviations.

I. Responsibilities Regarding Exposure Risk

A. Under the federal standard, UNMC is required to:
   1. Develop an ECP.
   2. Use warning labels and signs to identify hazards.
   3. Implement methods to comply with provisions for worker protection, includingstandard precautions.
   4. Provide training regarding the safe handling of sharps, specimens, contaminated laundry, regulated waste, and other engineering controls.
   5. Provide education and ongoing review of safety medical devices.
   6. Provide access to Hepatitis B vaccine at no cost to those employees who areat risk of exposure.
   7. Provide medical evaluation counseling and treatment after exposureincidents.
   8. Maintain medical evaluations and BBP training records.

B. Each principal investigator, laboratory director, manager, or supervisor isresponsible to:
   1. Determine employees and students within the department who are at risk ofexposure to bloodborne pathogens.
   2. Ensure all employees and students performing work with the potential forexposure to BBP have completed the BBP training.
   3. Maintain adequate supplies of personal protective equipment (PPE) for useby employees at no cost.
   4. Provide training on the use of appropriate PPE to ensure it's used correctlywhen needed.
   5. Encourage the reporting of exposure incidents involving employees, physicians, students, or visitors. Aid in the investigation and follow-up ofincidents.
   6. Specialty laboratories such as HIV, HCV, and HBV research and productionfacilities must follow additional regulations listed in Paragraph II and Appendixes II and III.

C. To minimize the risk of occupational exposure to blood and body fluids, theemployee/student must:
   1. Comply with the procedures and protocols outlined in the UNMC ECP.
   2. Attend all bloodborne pathogen in-service training sessions or completeonline training.
   3. Utilize appropriate PPE.
   4. Report all exposure incidents and complete post-exposure evaluation andfollow-up if Employee Health or a healthcare provider requested.
   5. Follow safe work practices.

NOTE: Employees not complying with the plan are subject to disciplinary action following UNMC Corrective and Disciplinary Action policy #1098.

D. Exposure Risk Determination

   1. The principal investigator, laboratory director, manager, or supervisor is responsible for determining jobs within their department that risk occupationalexposure to bloodborne pathogens to employees and students.
   2. Exposure categories shall be determined without regard to mitigation by theuse of PPE.
   3. All employees and students will be placed in an exposure category upon employment or transfer by their department or college. This information will be stated in the employee and student's job description and given to HumanResources (HR) and Nebraska Medicine Employee Health (EH).
   4. The following exposure categories will be determined by the duties, tasks, and procedures that place, may place, or do not place an individual at risk ofoccupational exposure.

Exposure risk is indicated within each job description. In addition, each job description classifies the potential of Bloodborne pathogen exposure. The Bloodborne pathogen risk classifications are as follows:

a. Category I — employees within this job classification are at risk because they frequently execute tasks that involve occupational exposure to blood or Other Potentially Infectious Material (OPIM). Examples: nurses, physicians, dentists, phlebotomists, pathologists, emergency response staff, plumbers, janitors, etc.
b. Category II employees within this job classification are at risk because they occasionally execute tasks involving occupational exposure to blood or OPIM. Examples: Professional Research Assistants, technicians, receptionists.
c. Category III — employees within this job classification are unlikely to be at risk because they do not execute tasks that involve occupational exposure to blood or OPIM. Examples: administrative professionals, parking attendants

II. **Research Laboratories Conducting HIV/HBV/HBC Research and Production**
Research laboratories working with human/animal source materials that could potentially contain BBP are subject to the BBP Standard. In addition, HIV, HBV, and HCV Research Laboratories and Production Facilities have additional specific requirements outlined by OSHA and are presented below:

A. Definition of HIV/HBV/HCV Research and Production Laboratories

A research laboratory means a laboratory that produces or uses research laboratory scale amounts of HIV, HBV, or HBC. Although research laboratories may not have the volume found in production facilities, they deal with solutions containing higher viral titers than those normally found in patient's blood.

Academic research laboratories are included in this definition. Laboratories that conduct research on blood and other Body fluids unrelated to HIV, HBV, or HCV, or that use unconcentrated blood or blood components as the sourceof HIV, HBV, or HBC

Production Facilities are not considered research laboratories (CPL 2-2.44D, pg 51). Instead, production facilities engage in industrial scale, large volume, or high concentration production of HIV, HBV or HBC, (CPL 2-2.44D, pg 51).

B. Biosafety Manual

A UNMC Biosafety Manual has been prepared, adopted and is periodically reviewed. It must be reviewed and updated at least annually or as often as necessary. Personnel shall be advised of potential hazards, required to read instructions on practices and procedures, and required to follow them.

C. General Requirements

1. Research laboratories dealing with human pathogens must determine the level of risk.
2. They must meet the requirements of the Biosafety Committee in addition to meeting the following criteria:
    a. Laboratory doors must be closed when work involving HIV, HBV, and HBC is in progress.
    b. Contaminated materials that can be decontaminated at a site away from the work area must be placed in a durable, leak-proof, labeled, or color-coded container that is closed before being removed from the work area.
    c. Written policies must be established to ensure access to the work area is limited to authorized persons who:
        1) Have been advised of the potential biohazard.
        2) Have been trained in necessary procedures.
        3) Meet specific entry requirements.
        4) Comply with entry and exit procedures.

D. Work Areas

1. Work areas and animal rooms shall be separated from areas that are open to unrestricted traffic flow within the building and warn of the hazards associated with bloodborne pathogens.
2. Passage through two sets of doors shall be the basic requirement for entry into the work area from access corridors or other contagious areas.
3. Separation of the high-containment work area from access corridors to other areas or activities may also be provided by a double-doored clothes-change room (showers may be included), airlock, or other access facility that requires passing through two sets of doors before entering the work area.
4. Surfaces of doors, walls, floors, and ceilings in the work area shall be water resistant so that they can be easily cleaned. Penetrations in these surfaces shall be sealed or capable of being sealed to facilitate decontamination.
5. Access doors to the work area or containment module shall be self-closing.

E. Identifying Biohazardous Agents

1. A universal biohazard symbol must be posted on all access doors when other potentially infectious materials or infected animals are present in the work area or containment module.
2. The biohazard sign shall also include:
    a. Special requirements for entering the area.
    b. The name and telephone number of the laboratory director or other responsible person.
3. The sign shall be fluorescent orange-red or predominantly so, with lettering or symbols in a contrasting color.

F. Ventilation System

A ducted exhaust-air ventilation system shall be provided.

1. This system shall create directional airflow that draws air into the work area through the entry area.
2. The exhaust air shall not be recirculated to any other area of the building, shall be discharged to the outside, and shall be dispersed away from occupied areas and air intakes.
3. The proper direction of the airflow shall be verified (i.e., into the work area).
4. Routine maintenance and/or replacement of all filters and traps shall be included in maintaining the air ventilation system.

G. Biological Safety Cabinets

Work with blood, body fluids, tissues or other potentially infectious material is not permitted on the open bench. Work must be conducted in certified biological safety cabinets or other physical-containment devices within the containment module. Certified biological safety cabinets (Class I, II, or III) or other appropriate combinations of personal protection or physical containment devices, such as special protective clothing, respirators, centrifuge safety cups, sealed centrifuge rotors, and containment caging for animals, shall be used for all activities with other potentially infectious materials that pose a threat of exposure to droplets, splashes, spills, or aerosols.

H. Certification of Biological Safety Cabinets (BSC)

Specific containment equipment is required to minimize or eliminate exposureto the viruses.

1. If the Biosafety Officer/EHS/IBC determines that biological safety cabinets (BSC) have been chosen as the means of containment, they must be certified (Class I, Class II, or Class III, as appropriate) when installed or moved, and at least annually.
2. The Biosafety Officer/EHS/IBC should check that a dated tag is affixed to the BSC indicating who performed the certification.

3. Alternatively, a certification report attesting to a minimum inward face velocity of at least 75 linear feet per minute and the integrity of the HEPA filters should be reviewed by the compliance officer.
4. The report must be dated and signed by the trained technician performing the measurements and integrity tests.
5. Alternatively, appropriate combinations of PPE or physical containment devices, (examples listed in the Federal Standard) will be accepted.

I. Appropriate Clothing

1. Appropriate protective clothing must be worn in the work area and animal rooms.
   a. Protective clothing, including laboratory coats, gowns, smocks, uniforms, or other appropriate protective clothing shall be worn in the work area and animal rooms.
   b. This protective clothing must not be worn outside or removed from the work area unless bagged for decontamination.
   c. Protective clothing must be decontaminated before laundering.
2. Gloves must be worn when handling infected animals and when making hand contact with other potentially infectious materials. Special care must be taken to avoid skin contact and needle punctures.

J. Sharps

Use of needles and syringes should be kept to a minimum and handled properly, as required. Puncture-resistant containers that sharps are placed in must be properly autoclaved or decontaminated before being discarded, reused, or incinerated.

K. Autoclave

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

L. Waste Disposal

Before disposal, waste from work areas and animal rooms must be either incinerated or decontaminated by a method such as autoclaving which is known to effectively destroy bloodborne pathogens.

M. Vacuum Lines

1. Vacuum lines must be protected with liquid disinfectant traps and high-efficiency particulate air (HEPA) filters, or filter of equivalent or superior efficiency.
2. These items must be checked routinely and maintained or replaced as needed.

N. Infectious Spills
   1. Spills must be contained and cleaned up immediately by appropriate professional staff or others properly trained and equipped to work with potentially concentrated forms of infectious materials.
   2. Any employee or student with a potential bloodborne pathogen exposure should contact the OUCH pager at 402-888-6824 (OUCH). Employees with other injuries should report to Nebraska Medicine Employee Health during regular business hours. Students with other injuries should report to UNMC Student Health during regular hours. If an injury that is not a bloodborne pathogen exposure should occur over a weekend, holiday, or during off hours, the employee or student should report to TNMC emergency room.
   3. Any employee or student that suffers an injury in the lab involving lab animals, or is exposed to a hazardous biological or chemical that results in an exposure incident must be reported immediately to the laboratory director, the Director of Comparative Medicine (402-559-4034).
   4. A UNMC incident report must be completed in accordance with UNMC policies. Incident reports can be found at online.

0. Hand and Eye washing Facilities
   1. Hand and eye washing facilities must be readily available in each laboratory, as well as an autoclave for decontaminating waste.
      a. Each work area shall contain a sink for washing hands that is foot, elbow, or automatically operated and shall be located near the exit door of the work area. The hand washing facility must be supplied with at least tepid water, soap, and hand towels.
      b. Each work area shall have an eyewash facility readily available. The eyewash must supply a sufficient quantity of water to completely flush the eyes.
         i. A fifteen-minute supply of continuous, free-flowing water is acceptable.
         ii. The hands must be free to hold the eyelids open to aid in the complete flushing of the eyes.
   2. Eyewash and exposure showers must meet certain design criteria. Contact the UNMC Environmental Health and Safety for details.

P. HIV, HBV and HBC Requirements for Training
   1. Employees must demonstrate proficiency in standard microbial practices and techniques and in the practices and operations specific to the facility before being allowed to work with HIV, HBV, or HBC.

2. Likewise, employers shall assure that employees have prior experience in the handling of human pathogens or tissue cultures before working with HIV or HBV.
3. The employer shall provide a training program to employees who have no prior experience in handling human pathogens.
4. Employees shall not handle human pathogens as part of their initial work activities until they have received HIV, HBV and HBC training.
5. Work activities shall progress as techniques are learned and proficiency is developed. It is the employer's responsibility to see that employees participate in work activities involving infectious agents only after proficiency has been demonstrated.

III. HEALTHCARE WORKERS INFECTED WITH BLOODBORNE PATHOGENS

In the event that a healthcare worker is infected with a bloodborne pathogen, they should notify Employee Health or the Advisory Council in accordance with Nebraska Medicine Healthcare Workers Infected With Bloodborne Pathogen Policy, IC 16 and UNMC Policy 1104 AIDS, HIV, and Other Bloodborne Pathogens Policy.

IV. HEPATITIS B VACCINATION

A. UNMC offers Hepatitis B vaccination at no cost to all employees who are at risk of exposure to blood, body fluids, tissues, infected animals, including human cell lines, tissues, etc. with unknown pathogen status and other potentially infectious materials (OPIM) during the course of performing their duties.

B. A declination form is signed and placed in the employee's health record in Nebraska Medicine Employee Health if the vaccine is refused. After signing a declination form an employee may opt to be vaccinated. If they remain in a job designated by their manager to be at risk for exposure to bloodborne pathogens the vaccine will be provided free of charge by Employee Health.

C. Hepatitis B Vaccination of Students. Colleges shall follow UNMC policy regarding the vaccination of students with the potential for exposure to blood and other infectious material. UNMC Student Health will provide information to students regarding efficacy, safety, methods of administration and the benefits of being vaccinated.

1. A series of three vaccinations and a positive titer are to be completed at the student's expense prior to matriculation. If a student has started the series and cannot complete it before the semester begins, with permission from Student Health (402-559-5158) and at the expense of the student, the student must complete the series and have a positive titer within the first two semesters of enrollment. Should a student have a negative titer following the first three Hepatitis B vaccinations, the student will be required to complete the second series of three vaccinations and a Hepatitis B antibody titer within one to two months of the last dose of the vaccine, as recommended by the Centers for Disease Control.

2. Students must have at least two Hepatitis B vaccinations before having patient contact.
3. Hepatitis B Vaccination is **not** given when:
    - The student has documentation of previously completed vaccination series.
    - Antibody testing reveals the student is immune.
    - The student has documented proof the vaccine is contraindicated for medical reasons.
4. In accordance with the U.S. Public Health Service (USPHS) guidelines, routine booster doses of Hepatitis B vaccine are not recommended or given except as necessary when part of a post-exposure evaluation. If a booster dose(s) is recommended by the U.S. Public Health Service (USPHS), appropriate steps will be taken to comply with the recommendations.
5. Students who do not respond to the primary vaccination series (per titer) will be revaccinated with a second (three-dose) vaccination series and repeat titer. Nonresponders to the second vaccination series are then tested for HBsAG. If the HBsAG is negative, no further vaccination is necessary. If the HBsAG is positive, the student is counseled regarding precautions to prevent HBV infection.

D. Hepatitis B Vaccination of Employees
1. If no prior Hepatitis B titer has been recorded, the Hepatitis titer is offered at the post-offer health assessment or job transfer health assessment for all worker and volunteers who may be exposed who may be exposed to blood, body fluids, tissues, or other potentially infectious materials during the course of performing their duties and without regard to the frequency of such exposures. The vaccine is given in the standard dose and through the standard route of administration as recommended in the CDC guidelines (Appendix V).
2. Hepatitis B vaccination is not given when:
    a. The employee has documentation of previously completed vaccination series and proof of reactive titer after vaccination.
    b. Antibody testing reveals the employee is immune.
    c. The vaccine is contraindicated for medical reasons.
    d. The employee signs declination form (Appendix IV).
    e. The employee has had two series of the vaccination series and maintains a nonreactive titer.
3. With all new hires or transfer positions, Nebraska Medicine Employee Health will maintain documentation stating whether the employee started the Hepatitis B vaccination, declined, was considered not applicable, or is immune by titer.
4. Nebraska Medicine Employee will document when Hepatitis B immunization is given in the Employee Health electronic medical record.
5. Any employee who declines Hepatitis B vaccination must sign a Hepatitis B vaccine declination form. This form is placed in the employee's health record in Nebraska Medicine Employee Health.

6. If an at-risk employee initially declines Hepatitis B vaccination, but at a later date decides to accept the vaccination, the vaccine will be provided at that time without cost to the employee.
7. All employees with ongoing potential exposure risk to blood and OPIM will betested for HBsAB one to two months after completion of the three-dose vaccination series per USPHS guidelines. ((MMWR 2005; 54:1-17)
8. Employees who do not respond to the primary vaccination series (per titer) are offered revaccination with a second (three-dose) vaccine series and retested for HBsAB. Nonresponders to the second series of the vaccine are then tested for HBsAG. If the HBsAG is negative, the employee is informed as to their susceptibility to Hepatitis B disease. If the HBsAG is positive, they are medically evaluated.
9. Currently, routine booster doses of Hepatitis B vaccine are not recommended or given except as necessary when part of a post-exposure evaluation. Should a booster dose(s) be recommended by the U.S. Public Health Service (USPHS) at a future date, such booster dose(s) will be provided according to standard recommendations for medical practice and at no cost to the employee.

IV. HUMAN IMMUNODEFICIENCY VIRUS CONSENT FOR TESTING

Informed consent for HIV testing must be obtained on all routine testing (See Nebraska Medicine example - Appendix IX). When a healthcare worker exposure occurs and the source individual refuses to give consent for testing, Nebraska law allows the blood of source individual to be tested without consent, if a specimen is available to test. (1998 Nebraska Revised Statute, 71-514.03).

V. EXPOSURE CONTROL PRECAUTIONS (METHODS OF COMPLIANCE)

A. Standard Precautions
In accordance with CDC/OSHA, Standard Precautions will be observed. This refers to the practice of regarding all blood and body fluids as potentially infectious. Standard Precautions shall be utilized when handling any blood and/or body fluids, tissues, OPIM or when in contact with mucous membranes or non-intact skin of **all** patients/persons/animals.

B. Engineering Controls
1. Engineering controls provided by UNMC reduce the likelihood of exposure in the workplace either by removing or isolating the worker from the hazard. It is the employer's responsibility to see that these controls are examined and maintained or replaced on a regular schedule to ensure their effectiveness. Examples of engineering controls include, but are not limited to, self-sheathing needles, hand pipettes, biosafety cabinets (BSCs), plastic capillary tubes, and sharps disposal containers.
2. UNMC requires safe work practices to reduce the risk of occupational exposure during all procedures or tasks that involve contact with blood or other potentially infectious materials, including handling and processing of specimens and repair of contaminated equipment.

C. Work Practice Controls
   1. Work practice controls reduce the likelihood of exposure by changing the procedure for performing a task. Work practice controls act on the course of the hazard but rely on the change in the behavior of the employer and employee or student to eliminate exposure. Examples of work practice controls are hand washing, disposal of sharps in sharps disposal containers, performing procedures to minimize droplet and aerosol generation, and eliminating hand-to-hand instrument passing during animal operations or autopsies.
   2. Mouth pipetting/suctioning of blood or OPIM is prohibited.
   3. Sharps Disposal
      a. Recapping
         - Do not shear, bend, break, or cut used needles.
         - Contaminated needles are not removed from disposable syringes or vacutainer holders by hand.
         - In very rare instances that recapping is necessary, use a one-handed technique (e.g., do not use a two-handed technique).
         - In specific situations where recapping or removal of needles from syringes is necessary, it must be accomplished with the use of a mechanical device that protects the hand or a safe one-handed recapping technique (e.g., when the specimen is contained in the needle).
         - Exceptions to this must be approved by the UNMC Safety Leadership Team.
      b. Reusable Sharps
         - Reusable sharps must be placed in appropriate, puncture-resistant and leak-proof containers until they are reprocessed.
         - Containers used to transport or store reusable sharps must be placed in the designated biohazard area.
         - Containers must be accessible and located as close as possible to the area where sharps are used.
         - The containers must be red or labeled to include the biohazard sign.
         - Contaminated instrument/reusable sharps are not to be stored or reprocessed in such a manner that would require personnel to reach into the container with their hands.
         - The employee and student should never reach into, or force items into a sharps container. They must be kept upright throughout use, replaced routinely, and not allowed to overfill.
      c. Disposable Sharps
         - Disposable sharps must be discarded immediately, or as soon as feasible, into containers that are closable, puncture-resistant, color-coded or labeled, and leak-proof on the sides and bottom.
         - Blunted, sheathed or retracted safer devices are considered sharps and must be discarded in sharps containers.
         - Vacutainers with an attached needle are single use and are disposed of as one unit.

d. Sharps Disposal Containers
   - The campus may contract for company exchange of reusable sharps containers per OSHA guidelines
   - Sharps disposal containers are closable, puncture resistant, and leak-proof on the side and bottom.
   - Sharps disposal containers must be convenient and widely available in all areas where there may be the handling of blood/body fluids/ or OPIM.
   - Sharps containers must be accessible to employees and located as close as feasible to the immediate area where sharps are used (e.g., research lab workstation) or where sharps may be found although not routinelyused (e.g., laundry).
   - Sharps containers must be approved by Infection Control & Epidemiology and the UNMC Environmental Health and Safety.
   - The sharps containers must be labeled with a biohazard sign or be red in color. These containers must remain upright throughout use. Containers are properly closed and removed to the appropriate pick-up point when they are three-fourths full.
   - It is the responsibility of any employee to remove and replace sharps containers when they are three-fourths full. Disposable sharps containers are appropriately sealed and placed into the biohazardous waste containers. Reusable sharps containers must be closed, then taken to the designated location and placed on the appropriate cart shelve for disposal.
   - Gloves are worn when sharps containers require removal.

e. Safer Medical Devices

The primary investigator or designee must determine the effectiveness of safer medical devices in the situations in which they will be used. Safer medical devices should include the following design characteristics:

   - A fixed safety feature that provides a barrier between the hands and the needle after use; the safety feature should allow or require the worker's hands to remain behind the needle at all times.
   - The safety feature is part of the device and not an accessory.
   - The safety feature is in engaged before disassembly and remains in effect after disposal to protect users and trash handlers, and for environmental safety.
   - The safety feature is as simple as possible and requires little or no training to use effectively.
   - Training shall be provided with the introduction of new safer medical devices and as needed thereafter

f. Broken glassware requires the use of mechanical means (e.g., brush and a dustpan or tongs) to clean up safely.
g. Eyewash stations are readily available in research areas using blood and other potentially infectious materials, chemicals, or radioactive material.
h. Biosafety cabinets are tested at least annually, and following installation, repairs that could potentially effect function, or after relocation.

D. Hand Hygiene

1. Hand washing (hand hygiene) is the single most important means of preventing the spread of infection. Hands must be washed or disinfected, even after gloves are used. Gloves do not take the place of hand hygiene measures
2. Routine hand washing for visibly soiled hands consists of the use of soap, running water and friction for at least 15 seconds.
3. Alcohol-based hand sanitizers are NOT reliable in killing bacterial or fungal spores (e.g., *Clostridium difficile* and *Bacillus anthracis*). Gloves are required when staff come in contact with *Clostridium difficile* or other spore-forming bacteria or fungi. After gloves are removed, hands should be washed with an antimicrobial soap and water.
4. Examples of when hand washing is to occur include, but are not limited to the following:
   - When coming on duty and at the completion of duty
   - After completing a procedure
   - After handling any blood, body fluid, tissue, or other potentially infectious material
   - Before invasive procedures
   - Between all research material contacts
   - Immediately following the removal of gloves or other protective equipment
   - Whenever hands are soiled
   - Before performing any procedure
   - After the use of the toilet
   - After blowing or wiping the nose
   - Before eating, drinking, applying cosmetics, handling contact lenses, or smoking.
   - when they are visibly soiled
5. Hand washing facilities are readily available in all areas where exposures may occur. Hand washing facilities are also to be provided at a reasonable proximity to employee's normal work area.
6. Hand cream application is permitted in clinical and laboratory areas provided hands are thoroughly washed immediately prior to application, however, care should be taken not to contaminate the hand cream during application. Lotion bottles are limited in size to eight ounces or smaller to prevent bacterial growth. Lotion bottles are to be discarded after use and are not be refilled or reused.
7. Persons working in healthcare areas who come into direct contact with patients are prohibited from wearing artificial fingernails or extenders, especially in high-risk patient populations (e.g., immunocompromised). Natural nails are to be maintained at a short (1/4) inch or less length. If nail polish is worn, it must not be chipped or peeling.
8. Hand jewelry should be kept at a minimum (e.g., wedding band) in patient care areas to enhance hand hygiene.

E. Shipping Human Specimens, Specimens Infected with Bloodborne Diseases, and OPIM

High consequence (Category A) pathogens handled by lab personnel are handled in accordance with applicable Department of Justice, Department of Transportation, Federal Aviation Administration, and International Air Transport Association requirements. Designated personnel handling these packages receive training as determined necessary by the UNMC Biosafety Officer, UNMC Chemical Safety Director and undergo background checks as required by law.

1. Specimens of blood, body fluids, tissues, or other potentially infectious materials are placed in an impervious container that is leak-proof during collection, handling, processing, storage, transport, and/or shipping. Specimens that are transported outside of the facility must be marked with a biohazard sign or color-coded. For instructions on transporting specimens, cadavers, and anatomical material, review the UNMC Appropriate Use of Human Anatomical Material Policy #8007.
2. Specimens placed in a primary container must be placed in a labeled or color-coded secondary container that prevents leakage when the inside container becomes contaminated or is punctured.
3. Specific biohazardous labeling of specimens is not required because employees are trained to follow Standard Precautions when handling all specimens and they recognize the container as containing specimens of blood, body fluid, tissues or other potentially infective material. However, biohazardous labeling is required if the specimen is leaving UNMC.
4. Biohazard labeling of individual specimen containers during collection or processing of such specimens is not required. If the specimen container is stored, transported, shipped, or packaged in a secondary container, securely closing and labeling (or color-coding) is required for the secondary containers. For example, if blood tubes are transported in the phlebotomy tray, the individual tubes would not require biohazard labeling; however, the tray needs to be labeled. Labeling includes the use of a red container or a biohazard symbol (see discussion of labeling under Signs and Labeling).
5. The shipment of materials such as blood body fluid, tissue or other potentially infectious material requires the worker to follow regulatory requirements for the applicable mode of transportation (e.g., air, ground). See the UNMC Hazardous Material/Dangerous Goods Shipping Plan for further details.
6. Specimen transport within the pneumatic tube system requires the following process (Refer to Nebraska Medicine Pneumatic Tube System policy, IC24): Properly secure and label the primary specimen/pharmaceutical container.
    - Double-bag specimens and blood components (to provide additional containment in the event of specimen spill/break/leakage).
    - Each bag is zipped closed.
    - The requisition is placed between the first and second bag.
    - Use foam liners to cushion specimens and pharmaceuticals sent through the tube system.
    - Latch the carrier securely, making certain nothing protrudes through the tube closure.
    - Needles are never sent through the tube system

7. Infectious substance affecting humans or animal (Category A), Biological substances (Category B), Exempt human or animal specimens and dry ice, shipped off campus through carrier(s) (e.g., Federal Express, UPS, World Courier, etc.) will be packaged and labeled in accordance with Department of Transportation (DOT) and/or International Air Transportation Association (IATA) shipping regulations for these materials. If any of the above, is to be transported outside the institution, laboratory personnel packaging and signing the Shippers Declaration or other required shipping paper (air waybills), will have received certified training on appropriate packaging and shipping of such items. To maintain current status for shipping, renewal classes are required every two years after initial training. For further information, refer to the UNMC Hazardous Material/Dangerous Goods Shipping Plan.

8. High consequence (Category A) pathogens handled by lab personnel are handled in accordance with applicable Department of Justice, Department of Transportation, Federal Aviation Administration and International Air Transport Association requirements. Designated personnel handling these packages receive training as determined necessary by the UNMC Biosafety Officer, UNMC Chemical Safety Director and undergo background checks as required by law.

F. General

1. In order to eliminate or minimize transmission of bloodborne pathogens from contaminated environmental surfaces, activities such as eating, drinking, smoking, applying cosmetics, (exception, hand lotion), and handling contact lenses are prohibited in laboratory areas, patient care areas, and other areas where there is potential for exposure to blood, tissues, body fluids, and OPIM.
2. In addition to direct contamination of food or drink by blood or other potentially infectious material (OPIM), containers of food and beverage may also become contaminated, resulting in unsuspected contamination of the hands. In order to prevent food and drink from being contaminated by the leakage/spilling of specimen containers, contact with contaminated items, or the performance of activities (e.g., laboratory analysis) that could generate splashes, sprays, or droplets of blood or OPIM, food and drink shall not be stored in cabinets, shelves, countertops, bench tops, refrigerators, or freezers where blood and other potentially infectious materials are present.
3. Employees must perform procedures in a way that reduces the risk of generation of droplets or aerosols.
4. The use of sprays, brushes, and high pressure in equipment lines is particularly hazardous as it may cause unnecessary splashing, spraying, spattering, or generation of droplets/aerosols of blood or OPIM.
5. The primary investigator or a designee must ensure that protective shields are readily available where needed and in good repair.
6. Lab exhaust hoods and biological safety cabinets (BSC) are inspected at least inspected annually by Facilities Management. Lab personnel must not modify or repair hoods or BSCs. BSCs and fume hoods must be kept neat, clean and free of materials/excess equipment that are not pertinent to the work.

G. Contaminated Equipment
   1. Contaminated equipment is decontaminated regularly, immediately after spills, and prior to servicing.
   2. Surfaces that cannot be decontaminated must be labeled as biohazardous in order to inform downstream servicing/repair employees of the hazard and precautions they need to take when working on the equipment.

VI. PERSONAL PROTECTIVE EQUIPMENT (PPE)

A. Provision and Maintenance
   1. PPE of appropriate size will be provided by the employer. Protective equipment that requires washing (such as aprons or gowns) will be laundered by a contracted laundry service.
   2. Employees and students are responsible for inspecting the integrity of PPE before use. Damaged or defective equipment should be repaired, destroyed, or replaced immediately.

B. Appropriateness for the Task
   1. Under normal conditions of use, PPE should not permit blood, body fluids, tissues, or other OPIM to reach work clothes, street clothes, undergarments, skin, eyes, or mucous membranes.
   2. Supervisors/Primary Investigators and employees need to perform a risk assessment to identify procedures that could potentially generate splashes, sprays, droplets, or aerosols and provide/utilize protective clothing as appropriate. PPE should be worn for the duration of the procedure.
   3. PPE must be properly donned and doffed to minimize exposure.

C. Appropriate Use of PPE
   1. PPE must be appropriate for the task, fit correctly, be removed and properly discarded when the task is finished.
   2. UNMC may select and provide any combination of appropriate PPE that is sufficient to protect employees and students from the anticipated exposures.
   3. PPE provided in appropriate sizes and kept accessible and in convenient locations.
   4. Supervisors/Primary Investigators or designee must train employees and students on the proper selection, use, and indications for PPE.
   5. Supervisors or primary investigators are responsible to make sure that workers/students wear PPE when needed.
   6. In rare and extraordinary circumstances, if an employee declines to use PPE due to their professional judgment of an increased hazard to self or others, the situation must be examined and investigated to prevent this from happening again. To ensure that such situations are investigated, an online incident report form is located on the Environmental Health and Safety website should be filled out including all pertinent information and stating briefly the nature of the incident within 48 hours after the event. If an exposure occurs, an incident report must also be completed.

D. Gloves

Gloves must be worn when there is a reasonable likelihood of hand contact with blood, body fluids, tissues or other potentially infectious material. This includes, but is not limited to, contact with mucous membranes, or non-intact skin, and handling of contaminated items or surfaces.

1. Disposable single-use gloves are used (sterile or non-sterile), depending on the purpose of use (such as working with cultures or infected animals).
2. Powdered gloves are now banned by the FDA and must not be used.
3. Gloves must be replaced as soon as practical when contaminated, or as soon as feasible if they are torn, punctured, or when the ability to provide an effective barrier is lost.
4. Disposable gloves must not be washed or decontaminated for reuse.
5. Gloves are changed after each procedure or when the integrity of the glove has been compromised.
6. Gloves are removed when a procedure is completed.
7. Hands are washed immediately following the removal of gloves.
8. If the employee/student experiences issues with or has an allergic to thegloves provided, this must be documented in an incident report and the individual seen in Nebraska Medicine Employee Health. Reasonableaccommodations will be made to provide an alternative product.
9. Gloves must be discarded if there are signs of cracking or peeling, being torn or punctured, having discoloration, or exhibit other signs of deterioration.

E. Protective Clothing

1. Employees must wear protective clothing such as (but not limited to) gowns, aprons, lab coats, or similar outer garments.
2. Fluid retardant gowns, aprons, and other protective clothing must be worn during tasks and procedures that are likely to generate splashes of blood, body fluids, or other potentially infective materials.
3. Surgical caps and hoods, shoe covers, and/or boots must be worn in instances when gross contamination can reasonably be expected - such as autopsies or surgical procedures.
4. In some situations, it may be necessary for protective clothing or specific areas of the clothing to have reinforcement (e.g., sleeves, elbow, or chest area) to prevent liquid penetration, such as during autopsy or during lengthy animal surgical procedures where soaking of clothing are likely. Laboratory coats should be used as a protective cover in areas of the laboratory where the riskof splashes is minimal.
5. Protective clothing is removed immediately when penetrated by blood, body fluids, other potentially infectious materials, or hazardous chemicals, and is not worn outside the work area.

F. Masks/Respirators and Eye Protection
   1. Masks/Respirators must be worn in combination with eye protection devices, such as goggles or glasses with solid side shields, or chin-length face shields whenever there is the possibility that splashes, spray, , or droplets of blood or other infectious materials could be generated which could contaminate eye, nose, and/or mouth (mucous membranes).
   2. Eye protection shall be worn during procedures that are likely to generate droplets/aerosols of blood, body fluid, or any other potentially infectious materials. Procedures requiring the use of eye protection for Standard Precautions include, but are not limited to, the following:
      a. Emptying tubing or containers with blood, body fluids, tissues, or other potentially infectious materials for disposal
      b. Suctioning
      c. Insertion of invasive devices as well as other invasive procedure
      d. Preparing specimens for examination
      e. Dissection
      f. Pouring fluids
      g. Adding fluids together
      h. Vortexing solutions
      i. While performing scrubbing in the operating room
      j. During work on the sewer system, such as plunging a drain or snaking a pipe.

   3. Approved types of eye protection for blood, body fluids, tissues, and other potentially infectious materials include the following: goggles, face shields, and glasses with side shields. Ordinary prescription glasses should not be used as the only source of protection; however, some protective devices that fit over glasses are acceptable. A potential user needs to contact the UNMC Environmental Health and Safety for more information.
   4. Departmental supervisors are responsible for having appropriate eye protection available.

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VIII. HOUSEKEEPING

The clinical care areas and research labs are maintained in a clean condition.

A. Removal and Disposal of PPE

PPE must be removed before leaving the work area.

   1. Gloves and other disposable PPE are properly disposed of in an appropriate waste container.
   2. Reusable PPE such as lab coats should be left in an area designated for storing lab coats.
   3. Lab coats or gowns going to the laundry should be placed in a laundry bag at the point of use for later transport to the laundry.

B. Cleaning and Maintenance
   1. Biohazardous waste containers provided by the UNMC biohazardous waste contractor are cleaned and decontaminated before being returned for reuse on campus.
   2. All buckets, pails, cans and other receptacles used for research or patient care and are related to research or patient care that are intended for reuse must be inspected and decontaminated on a regularly scheduled basis, or cleaned and decontaminated immediately if there is visible contamination.
   3. While extraordinary attempts to disinfect or sterilize environmental

surfaces such as walls or floors are rarely indicated, routine cleaning and removal of soil may be necessary.

4. Environmental Services, in conjunction with the primary investigator/department supervisor, must determine and implement an appropriate written schedule of cleaning and decontamination based upon:
   a. The location within the facility, (e.g., animal procedure room versus outside corridor)
   b. Type of surface to be cleaned, (e.g., hard-surfaced flooring versus carpeting)
   c. Type of soil present, (e.g., gross contamination versus minor splattering) Note: Primary users are responsible for cleaning areas of gross contamination in research areas.
   d. Tasks and procedures being performed, (e.g., laboratory analyses versus routine clerical duties).

C. Blood Spills/Other Potentially Infectious Material (OPIM) spills

1. Spills are cleaned immediately, and the area is cleaned and disinfected with a disinfectant appropriate for BBPs. Pay close attention to compatibility of the disinfectant used with other cleaners as this may result in the reaction releasing toxic vapors. PPE should be worn when cleaning any potentially biohazardous substance.

Small Spill	**Large Spill**
• Cordon off area and don PPE • Cover spill with absorbent material • Flood with appropriate disinfectant • Allow it to stand for recommended contact time • Reapply disinfectant for final clean-up • Wash hands	• Restrict area access and post warning on entry • Don PPE and apply absorbent material • Remove contaminated clothing/wash skin contact areas • Inform PI and/or supervisor AND Security/Public Safety Dispatch immediately: 402-559-5555

Information on addressing biological spills can in the Emergency Procedures Guide - Biological/Mercury/Radioactive Spills tab https://info.unmc.edu/safety/safety-office/policies-resources/emergprepguide.pdf

2. Gross contamination must be cleaned up first with a soap and water solution, to ensure the disinfectant is completely effective, and then the spill is to be cleaned with the bleach solution. Acceptable solutions for disinfection, cleaning, and decontamination of the clinical environment, clinical equipment, and work surfaces in clinical area at UNMC are determined by the Department of Infection Control & Epidemiology. The principal investigator in conjunction with UNMC Biosafety determines acceptable solutions for disinfection, cleaning, and decontamination of spaces, equipment, and work surfaces in the research environment.

D. Protective Coverings

Protective coverings, such as plastic wrap, aluminum foil, or imperviously backed absorbent paper are acceptable methods of protecting items and surfaces against contamination. However, these coverings must be replaced as soon as possible after they become contaminated or at the end of the work shift if they have become contaminated during the procedure. This does not eliminate the need to decontaminate the surface area if overtly contaminated and at regular intervals.

E. Biohazardous Waste Containers

The federal standard requires that Biohazardous Waste containers used to collect regulated waste be closable. It is not necessary to cover trash containers during use, however it is a good idea to keep them covered when not in use to prevent items from falling in and people having to retrieve items. Container must be covered prior to removal to prevent spillage during handling, storing, transporting, or shipping.

F. Handling Broken Glass

1. Since contaminated broken glass is capable of inflicting percutaneous injury and direct inoculation of bloodborne pathogens into the bloodstream, broken glassware which may be contaminated must not be picked up directly with the hands.
2. Only mechanical means are to be used to clean up broken glassware, sharps, or other infectious waste (brush, dustpan, tongs, forceps, etc.) and must be properly decontaminated or discarded after use and the broken glass placed in a sharps container, or be disposed of accordance with UNMC Policy #2005 - Waste Handling Policy.
3. Vacuum cleaners are not appropriate for cleanup of contaminated broken glass.

IX. LAUNDRY

A. Standard Precautions will be used with soiled laundry and reusable protective clothing is worn to prevent exposures.
B. Remove all sharps from linen (e.g., including checking scrub pockets) before placing into the linen hamper.
C. All used laundry will be considered contaminated. Contaminated laundry must not be taken home. Laundry guidelines include:
   1. Appropriate PPE will be used by employees for protection against occupational exposure when handling laundry.
   2. Contaminated laundry is placed in containers at the location where it is used but sorting or rinsing laundry is prohibited.
   3. Bags or containers from areas other than patient care areas in which laundry is placed and transported must be labeled or color-coded, sufficiently to permit employees to recognize the containers as having contaminated contents.
   4. Laundry is collected in cloth linen or plastic laundry bags at the point of use before transportation.
   5. Double bagging is not necessary unless the bag is torn or the outside is contaminated.

6. Wet contaminated laundry must be placed and transported in bags or containers that prevent soak-through or leakage to the exterior.
7. Bagged linen will be transported to the laundry facility in appropriate containers.
8. All used laundry is treated as contaminated and is handled as little as possible.
9. Employees who have contact with contaminated laundry must wear gloves and other appropriate PPE.

X. SIGNS AND LABELS

A. Labeling

Specific labeling (biohazard symbol or the use of red bags or containers) is required to warn of potential hazards. Contaminated equipment, biohazardous waste containers, refrigerators, freezers, or other containers used to store, transport, or ship blood, body fluids, tissues, or other potentially infectious materials must be labeled. The standard requires:

- Warning labels must include the universal biohazard legend and symbol followed by the term biohazard.
- Biohazard label must be fluorescent orange or orange-red, or predominantly so, with lettering or symbols in contrasting color.
- The labels must be either an integral part of the container or affixed as close as feasible to the container by a string, wire, adhesive, or another method to prevent their loss or unintentional removal.
- Red bags or container may be substituted for specific labeling.
- Biohazard signs are attached to refrigerators and freezers containing blood, body fluids, tissues, or other potentially infectious materials. Biohazard symbols are also placed on equipment potentially contaminated with infectious materials, such as centrifuges, transportation containers, BSCs, incubators, etc.
- Regulated infectious waste is placed in red or labeled biohazard containers.
- Contaminated equipment sent for servicing or repair must be decontaminated as described above or labeled with a biohazard sign stating which parts are contaminated.
- Specimens transported out of UNMC shall be labeled with a biohazard sign.
- Specimens, infectious or other, shipped off campus by carrier(s) (e.g., UPS, Federal Express, etc.) will be packaged and labeled in accordance with the Department of Transportation (DOT) and the International Air Transportation Association (IATA). See the UNMC Hazardous Material/Dangerous Goods Shipping Plan for further direction.

B. Extracted Teeth
   1. Extracted teeth which are being discarded or used as specimens are subject to the containerization and labeling provisions of the standard. Extracted teeth may be given to the patients. In these situations, the teeth are not subject to the containerization and labeling provisions of the standard.

C. Labeling is not required for:
   1. Individual containers of blood, body fluids, tissues, or other potentially infectious materials that are placed in secondary labeled containers during storage, transport, shipment, or disposal.
   2. Laundry bags or containers if the facility uses Standard Precautions for handling all laundry.
   3. Standard precautions applies to all equipment used with blood, body fluids, including human cell lines, tissue, and research materials, OPIM, and all human and non-human primate derived materials (including tissues, cells, and cell lines) within the facility with the presumption that such equipment is always considered contaminated.

XI. REGULATED WASTE

Biohazardous waste will be managed and disposed of in accordance with DOT, EPA, OSHA, and State of Nebraska Regulations. For more information refer to UNMC Policy #2005 - Waste Handling Policy.

IX. BLOOD AND BODY FLUID POST-EXPOSURE EVALUATIONS FOLLOW-UP(alsorefer to NM policy)

A. Bloodborne Pathogen Exposure: A bloodborne pathogen exposure incident is defined as a specific eye, mouth, or other mucous membrane, non-intact skin, or parenteral contact with blood or other potentially infectious materials that may result from the performance of an employee/student job duties (e.g., Category I or II).

B. In the event of a blood or body fluid exposure, the employees and student should:
   1. Wash the affected area immediately with soap and water (eyes and other mucous membranes should be flushed with water).
   2. **DO NOT WAIT**. Report **immediately** to Nebraska Medicine Employee Health or call the post-exposure paging system for risk assessment and assistance in determining needed health care follow-up.

The post-exposure paging system is accessed as follows:

Number	Location
*9-(402)-888-OUCH (6824)	On campus
(402)-888-OUCH (6824)	Calling from off campus
1-(402)-888-OUCH (6824)	Calling from long distance

   3. Inform the appropriate supervisor/instructor.
   4. Document the exposure on a UNMC incident report form.

5. Principal investigators using biohazardous agents in the research setting are required to report any violation of the NIH guideline or any research-related accident/illness to the UNMC Office of Regulatory Officers. See IBC-24 Reporting Adverse Event. The post-exposure paging system is available 24 hours a day, 7 days a week.

C. Risk Management
    1. Nebraska Medicine Employee Health nurses/case managers will assist in the risk assessment of an exposure incident to determine when medical evaluation and follow-up is necessary.
    2. **There is no fee involved for reporting or follow-up care related to a bloodborne pathogen exposure.**
    3. The employee and student may receive further directions regarding treatment and follow-up from the exposure.
D. Post-Exposure
    1. An immediate confidential, post-exposure medical evaluation and follow-up is required following an exposure incident.
    2. Follow-up should include at least the following elements:
        a. Identification and documentation of the source individual.
        b. Detailed documentation will include a minimum of the following: the route of exposure, device and its brand name involved, the circumstances under which the exposure occurred, engineering controls, PPE in use, work practices, the location of the incident, and procedure being performed.
        c. Testing the source individual's blood as soon as feasible to determine Hepatitis B virus (HBV), Hepatitis C virus (HCV), and HIV infectivity. See the algorithm for determining HIV status. (Appendix VI).
        d. Written consent to test for HIV will be obtained from the source individual by Nebraska Medicine Employee Health/Risk Management (Appendix IX).

E. HUMAN IMMUNODEFICIENCY VIRUS CONSENT FOR TESTING
    1. Informed consent for HIV testing must be obtained on all routine testing at Nebraska Medicine. When a healthcare worker exposure occurs and the source individual refuses to give consent for testing, Nebraska law allows the blood of source individual to be tested without consent, if a specimen is available to test. (Appendix VII-VIII and Appendix IX. 1998 Nebraska Revised Statute, 71-514.03).
    2. If blood is not available for testing, and consent for testing is refused, University Nebraska Medical Center Risk Management will be consulted immediately by the Case Manager.
F. When Status is known:
    1. When the HBV, HCV, and HIV status of the source individual is known prior to the injury, the status will be documented.
    2. Repeat testing is not necessary.
G. Availability of Information
    1. The results of the source individuals testing will be made available to the exposed healthcare worker and student.
    2. The healthcare worker and student will also be informed of applicable law, regulations, and policies concerning disclosure of the identity, and the infectious status of the source individual.

H. Baseline Blood Collection and Testing of Student/Personnel
   1. Collection and testing of the exposed healthcare worker/student blood for HBV, HCV, and HIV serological status shall be collected.
   2. The exposed employee and student blood shall be collected as soon as feasible and tested for HBsAB (when antibody status is unknown), HCV, and HIV after consent is obtained.
   3. If the employee or student consents to baseline blood collection but does not give consent at that time for HIV serologic testing, the blood sample shall be preserved for at least 90 days.
   4. If, within 90 days of the exposure incident, the employee or student elects to have the baseline sample tested, such testing shall be done as soon as feasible.

I. HIV Post-Exposure Prophylaxis
   1. Post-exposure prophylactic medications, when indicated, will be offered as per current recommendations from the Centers for Disease Control and Prevention/U.S. Public Health Services, or other professional governing bodies.
   2. **These medications should be started within two (2) hours of the exposure**. See algorithms for **post-exposure prophylaxis** and **determining HIV status.** (Appendix VI).

J. Counseling
   1. Every healthcare worker or student will be provided necessary counseling regarding their exposure.
   2. Such counseling will include, when appropriate:
      a. Recommendations for treatment
      b. Follow-up care and testing
      c. Reporting of illness
      d. Safer-sex guidelines
      e. Any other information necessary and relevant to the exposure.
   3. The healthcare worker or student will be given an opportunity to ask questions.
   4. Additional counseling will be provided as necessary and/or as requested in the post-exposure period.
   5. Employee Assistance Program (EAP) is also available if desired.

K. Evaluation of Reported Illness
   1. Employees and students will be advised to report illnesses in the post-exposure period.
   2. These illnesses will preferably be evaluated in Nebraska Medicine Employee Health. The Emergency Department or the individual's personal physician may also be seen; however, Nebraska Medicine Employee Health should be notified.
   3. In the event the illness is determined to be a result of the employee/student previously reported exposure, UNMC Worker Compensation representative or other designated Case Manager(s) will be notified.

L. Post-exposure follow-up is offered with any occupational exposure incident.
   1. All evaluations, procedures, vaccinations, and post-exposure management are confidentially provided to the employee through Nebraska Medicine Employee Health at a reasonable time and place at no cost to the employee/student and according to the current recommendations provided by the U.S. Public Health Service.
   2. All medical evaluations and procedures are performed by or under the supervision of a licensed physician or another licensed healthcare professional. All laboratory tests and treatment are performed by an accredited laboratory and are processed at no cost to the employee/student/volunteer.

M. Information Provided to the Healthcare Professional
   1. A copy of 29 CFR 1910.1030 (Bloodborne Pathogen Standard) will be kept on file in Nebraska Medicine Employee Health. All medical care records due to an occupational exposure or for Hepatitis B prophylaxis will be kept according to this federal standard.
   2. A UNMC incident report must be completed (preferably by the involved employee/student) for every blood and body fluid exposure.
   3. Information on the report shall include:
      a. A description of the exposed individual's duties as they relate to the exposure incident
      b. Documentation of the route of exposure and injury site
      c. Device and brand name
      d. Circumstances under which the exposure occurred
      e. All medical records relevant to the appropriate treatment of the employee including vaccination status.

N. Written Opinion
   1. Nebraska Medicine Employee Health will provide a written post exposure report to the employee/student within 15 days of the **completion** of the initial evaluation.
   2. This report will identify:
      a. Whether Hepatitis B vaccination was recommended
      b. Whether or not the employee/student received the vaccination.
   3. Nebraska Medicine Employee Health case managers must also note that the employee or student has been informed of the results of the evaluation and told of any medical condition resulting from exposure to blood or any other potentially infectious materials which may require further evaluation or treatment.
   4. All other findings or diagnoses will be kept as confidential (as required by state and federal regulations) and shall not be included in the written report (Appendix IX).

O. Records
   1. Following completion of a post-exposure follow-up, all exposure records will be maintained and in accordance with 29 CFR 1910.20.
   2. This record will be located in Nebraska Medicine Employee Health for employees and students and will consist of a copy of the information provided to the employee or student as well as the individuals name, social security number, and a copy of the individuals Hepatitis B status; dates of all Hepatitis B vaccinations, and any records relative to the individual's ability to receive vaccination (however, student Hepatitis B vaccination records will be maintained in UNMC Student Health).
   3. The exposure record shall also include a copy of all results of any post-exposure evaluations, including examinations and medical testing, and follow-up procedures as well as a copy of the written opinion provided by Nebraska Medicine Employee Health healthcare professional.

P. Record Retention
   1. All records are confidential and employee records are retained for the duration of employment plus 30 years, in accordance with 29 CFR 1910.20.
   2. Student exposure records are maintained as required by law/statute.

Q. Record Confidentiality

   Medical records of occupational exposures will not be disclosed or reported without the employee's written consent, except as required by law.

X. TRAINING

A. Training
   1. All employees and students with potential occupational exposure to bloodborne pathogens must participate in a training program. Training is available online.
   2. UNMC incurs all training costs, including employee salary.
   3. The training will be required at the time of employment and annually thereafter.
   4. Additional training will be done when new tasks or modifications occur which may create new exposures. Research staff working with BBPs may require additional training.
   5. Training must be:
      a. Provided by developed by an individual who is knowledgeable in the subject matter.
      b. Available during regular working hours.
      c. Provided at a location reasonably accessible.
      d. Documented by appropriate records and kept for at least three years.

B. Training Records
   1. Training records are kept electronically in in Management Resources – Training & Certification for employees and MyRecords for Students.
   2. These records include:
      a. Dates of training sessions.
      b. Names and qualifications of persons conducting/developing the training program (this information is kept in the Environmental Health and Safety Department).
      c. Names and job titles of all persons attending the training sessions.
   3. Training records shall be maintained by the employer and made available for examination and copying upon request to OSHA investigators, the employee,

or an employee representative in accordance with 29 CFR 1910.20.

C. Trainers
   1. The EHS Safety Manager will be thoroughly familiar with the standard to develop training programs.

D. The Training Includes:
   1. Access to a copy of the OSHA Standard.
   2. Explanation of the epidemiology, symptoms, and mode of transmission of bloodborne pathogens.
   3. Explanation of the exposure plan and where the employee may find copies of the plan.
   4. Explanation of appropriate methods for recognizing tasks and other activities that may involve exposure to blood and body fluids.
   5. Explanation of the use and limitations of methods that will prevent or reduce exposure which includes appropriate engineering controls, work practices, and PPE.
   6. Explanation of the type, proper use, location, removal, handling, decontamination and disposal of PPE.
   7. Explanation of the basis for selection of PPE.
   8. Information on the Hepatitis B vaccine which includes the benefits of vaccination, efficacy, safety, a method of administration, and the fact that the vaccine is offered by UNMC free of charge to at-risk employees.
   9. Explanation of the appropriate actions needed and persons to contact in an emergency involving blood or possibly infectious materials.
   10. Explanation of procedure to follow should an exposure occur which includes reporting, evaluation, and available medical follow-up provided through the OUCH pager/Nebraska Medicine Employee Health Risk Management.
   11. Explanation of labels, sizes, and color-coding used to identify hazards.
   12. Provision of an opportunity for interactive questions and answers with the person conducting the training.
   13. A phone number to call if an individual has any questions during the training.

E. Appropriate Training Material
   1. Only material that is appropriate in content and vocabulary to the employee and student educational level, literacy, and language shall be used.
   2. If an employee or student is only proficient in a foreign language, the supervisor will make arrangements to have the information interpreted.

F. Training Methods
   1. Training is available online through UNMC's Employee Self Service (ESS).
   2. Training is approved by UNMC Environmental Health and Safety.

G. Accountability

   Employees, students, and their departmental managers are held accountable for initial and annual bloodborne pathogen training.

H. Who Shall Be Trained?
   1. The standard requires that employers shall ensure that all employees with occupational exposure risk must be trained.
   2. OSHA has explained that this includes full or part-time, temporary and per diem employees, volunteers and students.
   3. According to OSHA, professional credentials do not necessarily ensure that the individual is familiar with all the provisions of the standard.

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XI. COMPLIANCE

Employees not in compliance with the plan are subject to disciplinary action in accordance with UNMC Corrective and Disciplinary Action policy.

References:

1. "Occupational Safety and Health Administration's Bloodborne Pathogen Standard", Federal Register; 56:640003-4182; 29 CFR 1910.1030; December 6, 1991; Vol. 58; No. 235.
2. Morbidity and Mortality Weekly Report; "Public Health Service Guidelines for the Management of Healthcare Worker Exposure to HIV and Recommendations for Post-exposure Prophylaxis"; May 15, 1998; Vol. 47; No. RR-7.
3. 1998 Nebraska Revised Statutes, 71-514.03.
4. "Occupational Health and Safety in the Care and Use of Research Animals", National Research Council, 1997.
5. "OSHA Directives Enforcement Procedures for the Occupational Exposure to Bloodborne Pathogens", United States Department of Labor, Dir. No. CPL 2-2.44D.
6. "OSHA Instruction", United States Department of Labor, Dir. No., CPL 2-2.44D, November 5, 1999.

Appendix 1

Glossary

Blood: Human blood, human blood components, and products made from human blood, (Nebraska Medicine BBP Policy, 2001). The term "human blood components" includes plasma, platelets, and serosanguinous fluids (e.g., exudates from wounds). Also included are medications derived from blood, such as immune globulins, albumin, and factors 8 and 9, (OSHA CPL 2-2.44D).

Bloodborne Pathogens: Microorganisms that are present in human blood and that can cause diseases in humans; while HBV, HCV, and HIV are specifically identified in the standard, the term includes any pathogenic microorganism that is present in human blood or other potentially infectious material (OPIM) and can infect and cause disease in persons who are exposed to blood containing the pathogen.
Pathogenic microorganisms can also cause diseases such as malaria, syphilis, babesiosis, brucellosis, leptospirosis, arboviral infections, relapsing fever, Creutzfeldt-Jakob disease, adult T-cell leukemia/lymphoma (caused by HTLV-I), HTLV-I associated myelopathy, diseases associated with HTLV- II, and viral hemorrhagic fever, (OSHA CPL 2-2.44D).

CDC: Centers for Disease Control and Prevention

CFR: Code of Federal Regulations

Clinical Laboratory: A workplace where diagnostic or other screening procedures are performed onblood or other potentially infectious materials.

Contaminated: Marked by the presence or the reasonably anticipated presence of blood or otherpotentially infectious materials on an item or surface.

Contaminated Laundry: Laundry that has been soiled with blood or other potentially infectious materialsor that may contain sharps.

Contaminated Sharps: Any contaminated object that can penetrate the skin. This includes, but is not limited to, needles, scalpels, broken glass, broken capillary tubes and exposed ends of dental wires.

Decontamination/Disinfection: Rendering bloodborne pathogens on a surface or item to the point where they are no longer capable of transmitting infectious particles and the surface or item is renderedsafe for handling, use or disposal.

DOT: Department of Transportation

EAP: Employee Assistant Program (UNMC)

Engineering Controls: Means controls that isolate or remove the bloodborne pathogens hazard from the workplace. Examples include needleless devices, shielded needle devices, blunt needles, and plastic capillary tubes, (OSHA CPL 2-2.44D).

Exposure Incident: A specific eye, mouth, or other mucous membrane, non-intact skin, or parenteral contact with blood or other potentially infectious materials that results from an employee performing his or her duties, (Nebraska Medicine BBP Policy, 2002). "Non-intact skin" includes skin with dermatitis, hangnails, cuts, abrasions, chafing, acne, etc., (OSHA CPL 2-2.44D).

Hand washing Facilities: Locations that provide an adequate supply of running potable water, soap, and single-use towels or hot-air drying machines.

HBsAB: Hepatitis B Surface Antibody

HBsAG: Hepatitis B Surface Antigen

HBV: Hepatitis B virus

HCV: Hepatitis C virus

HEPA Filters: High-Efficiency Particulate Air filters

HIV: Human Immunodeficiency Virus

HIV, HBV and HCV Production Facilities: These facilities are engaged in industrial scale, large volume, or high concentration production of HIV, HCV or HBV.

HIV, HBV and HCV Research Laboratories: This refers to a laboratory which produces or uses research laboratory scale amounts of HIV, HBV or HCV. Although research laboratories may not have the volume found in production facilities, they deal with solutions containing higher viral titers than those normally found in patient's blood. Academic research laboratories are included in this definition.

Occupational Exposure: Reasonably anticipated skin, eye, mucous membrane, or parenteral contact with blood or other potentially infectious materials that may result from employees performing their duties, (Nebraska Medicine BBP Policy, 2002). The term "reasonably anticipated contact" includes the potential for contact as well as actual contact with blood or OPIM. Lack of history of blood exposures among designated first aid personnel of a particular manufacturing site, for instance, does not preclude coverage. "Reasonably anticipated contact" includes, among others, contact with blood or OPIM (including regulated waste) as well as incidents of needle sticks. For example, a compliance officer may document incidents in which an employee observes uncapped needles or contacts other regulated waste in order to substantiate "occupational exposure", (OSHA CPL 2-2.44D).

OSHA: Occupational Safety Health Administration

Other Potentially Infectious Material (OPIM):

A. The following human body fluids: semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal 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.

B. Any unfixed tissue or organ (other than intact skin) from a human (living or dead);
C. HIV-containing cell or tissue cultures, organ cultures, and HIV, HBV, or HBCC containing culture medium or other solutions;
D. Blood, organs or tissues of experimental animals who are infected with HIV, HBV, or HBC (OSHA 1910.1030).
E. Human and non-human primate (NHP) cells, cell lines, and tissues (Standard Interpretations Applicability of 1910.1030 to establish human cell lines)

Parenteral Exposure: Exposure occurring as a result of piercing the skin barrier (e.g., subcutaneous, intramuscular, intravenous routes) through such events as needle sticks, bites, cuts, and abrasions, (Nebraska Medicine BBP Policy, 2002). This definition includes human bites that break the skin, which is most likely to occur in violent situations such as may be encountered by security personnel in emergency rooms or psychiatric wards, (OSHA CPL 2-2.44D).

PEP: Post Exposure Prophylaxis

Personal Protective Equipment (PPE): Specialized clothing or equipment is worn by an employee or student to protect against a hazard.

Regulated Waste (Biohazardous Waste): Regulated waste refers to the following categories of waste which require special handling, at a minimum: liquid or semi-liquid blood or OPIM; items contaminated with blood or OPIM and which would release these substances in a liquid or semi-liquid state if compressed; items that are caked with dried blood or OPIM and are capable of releasing these materials during handling; contaminated sharps; pathological and microbiological wastes containing blood or OPIM.

Research Laboratory: A laboratory producing or using small but significant amounts of HIV, HCV, or HBV. Research laboratories may produce high concentrations of HIV, HCV, or HBV but not in the volume found in production facilities.

Sharps: Any object that can penetrate the skin, including, but not limited to, needles, scalpels, and broken capillary tubes.

Sharps Container: Made of a variety of products from cardboard to plastic. Each sharps container must be either labeled with the universal biohazard symbol and the word "biohazard" or be color-coded red.
Sharps containers must be rigid, break-resistant, closable, puncture resistant, and leak-proof on sides and bottom. Sharps containers must be able to be closed in such a manner as to be completely sealed.

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

Standard Precautions: An approach of infection control in which all human blood/body fluids or animals infected with infectious agents are treated as if known to be infectious from HIV, HBV, HCV and other bloodborne pathogens.

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

TB: *Mycobacterium tuberculosis*

Work Practice Controls: Mandated procedures or policies that reduce the likelihood of exposure by altering the manner in which a task is performed (e.g., by prohibiting recapping of needles using a two-handed technique).

Appendix II

All human and Nonhuman Primate (NHP) derived materials (including tissues, cells, and cell lines) must be handled following the OSHA Bloodborne Pathogens Standard and under BSL-2 containment. Animal Biosafety Level 2 (ABSL-2) containment and practices may be required when using these materials in animal experiments. For more information, refer to the UNMC Institutional Biosafety Committee (IBC) policy IBC-43: UNMC IBC Policy on Use of Human and Nonhuman Primate Tissues, Cells, and Cell Lines. **Questions?** Please contact **UNMC IBC** at 402-836-9403 email: ibcora@unmc.edu

Appendix III

Animal Research Laboratories

Animal Laboratories Shall Meet the Following Criteria:

A. Facility Design

The facility design of the laboratory should allow for compliance with federal, state, and local government safety requirements and meet relevant accreditation standards.

1. Adequate space should be made available for storage of hazardous materials and for the collection, storage, and processing of wastes.
2. Special consideration should be given to the ventilation system, space arrangement, layout, support areas, traffic patterns, and access to utilities and mechanical areas.
3. The selection of mechanical systems and equipment should be based on reliability, operational integrity, the projected length of service, and ease of maintenance.

B. Sharps

The use of hypodermic needles and syringes is permitted only for parenteral injection and aspiration of fluids from laboratory animals and diaphragm bottles.

1. Only needle locking syringes are permitted.
2. Needles must not be bent, sheared, recapped, or removed from the syringe following use.
3. Sharps must be discarded in accordance with UNMC Waste Handling Policy.

C. Personal Protective Equipment

Appropriate protective clothing must be worn in the work area and animal rooms. This may include laboratory coats, gowns, smocks, or uniforms. Protective clothing, including laboratory coats, gowns, smocks, uniforms, or other appropriate protective clothing shall be worn in the work area and animal rooms.

1. This protective clothing must not be worn outside or removed from the work area unless bagged for decontamination.
2. Protective clothing must be decontaminated before laundering.
3. Gloves must be worn when handling infected animals and when making hand contact with other potentially infectious materials.
4. Special care must be taken to avoid skin contact and needle punctures.

D. Infectious Waste

Before disposal, waste from work areas and animal rooms must be either incinerated or decontaminated by a method such as autoclaving.

E. Maintenance

A program of preventive maintenance should be developed to ensure continued safe operation of the facility.

F. Barriers

Barriers should be used to help confine potential contamination to areas where it is generated and to control access to these areas:

1. Animal biosafety level 3 facilities should use barriers to isolate animal areas from other, adjacent areas.
2. Principal barriers that should be used include:
   a. Exhaust air ventilation systems, which provide directional air flow.
   b. Architectural barriers that control access to the animal facility and can prevent unauthorized people from accessing the animal facility.

c. Airlocks that help to maintain air pressure differentials to ensure proper direction ofairflow.

G. Ventilated Cages

Ventilated caging systems which use exhaust fans to create a negative pressure gradient between the cage and the surrounding environment are useful in preventing the escape of bioaerosols from the animal environment when exhaust air is filtered with highly-efficiency- particulate-air (HEPA) filters.

H. Room Ventilation

Room ventilation is an important engineering control used not only to maintain comfortable temperature and humidity in the work area but also provides directional airflow and can prevent the migration of airborne contaminants to unprotected space in the facility.

1. Changing air continuously can reduce the concentration of airborne contaminants but does not replace the need for such containment devices such as chemical fume hoods, biologicalsafety cabinets, and filter top cages.
2. High ventilation rates are important for providing acceptable environmental conditions for personnel. Cage cleaning and cage washing can result in high concentrations of particulatecontaminants and very high heat loads from the cage washing equipment.
3. Local exhaust can be used in controlling contaminants at the point of generation. Canopy hoods and flexible exhaust ducts should be properly engineered and used to reduce occupational exposures to such hazards as animal dander and excreta liberated during cagecleaning, aerosols, and vapors generated during anesthesia or necropsy, and heat emanating from cage cleaning or waste decontamination. Local exhaust devices are particularly useful for controlling emissions from equipment or procedures that cannot reasonably be contained in a hood.

I. Work Practice Controls

Work practices are the most important element in controlling exposures.

1. Employees must understand the hazards associated with the procedures that they are performing, recognize the way in which they are exposed to those hazards, be able to selectwork practices that minimize exposures, and acquire, by means of training and experience, the discipline and skills necessary to sustain proficiency in the conduct of safe practices.
2. Categories of work practices to consider include:
   a. Practices to reduce the number of employees at risk of exposure:
      i. Restrict access to the work area.
      ii. Provide warnings of hazards and advice about special requirements.
   b. Practices to reduce exposures by direct and indirect contact:
      i. Keep hands away from mouth, nose, eyes, and skin. Do not handle contactlenses while in the laboratory area.
      ii. Wash hands when contaminated and when work activity is completed.
      iii. Decontaminate work surfaces before and after work and after spills of ahazardous agent.
3. Use appropriate methods to decontaminate equipment, surfaces, and wastes.
4. Substitute less-hazardous materials whenever possible.
5. Wear personal protection equipment (e.g., gloves, gowns, and eye protection).
   a. Practices to reduce percutaneous exposures:
      i. Eliminate the use of sharp objects whenever possible.
      ii. Use needles with self-storing sheaths or those designed to protect the user.

iii. Keep sharp objects in view and limit use to one open needle at a time.
iv. Use appropriate gloves to prevent cuts and skin exposure.
v. Select products with puncture-resistant features whenever possible.
vi. Use puncture-resistant containers for the disposal of sharps.
vii. Handle animals with care and proper restraint to prevent scratches and bites.

b. Practices to reduce exposure by ingestion
   i. Use automatic pipetting aids; never pipette by mouth.
   ii. No smoking, eating, or drinking should be allowed in work areas used for thecare and use of research animals.
   iii. Keep hands and contaminated objects away from face and mouth.
   iv. Protect mouth from splash and splatter hazards with mask and face shield whenperforming procedures that are likely to cause splatters or spraying.
   v. Perform hand hygiene frequently.

c. Practices to reduce exposure by inhalation:
   i. Use chemical fume hoods, biological safety cabinets, and other containmentequipment to control inhalation hazards.
   ii. Handle fluids carefully to avoid spills and splashes and the generation ofaerosols.
   iii. Use in-line HEPA filters to protect the vacuum system.

6. To prevent contamination of surfaces items transported between labs potentially contaminated equipment or product in a secondary, leak-proof container. Gloves must beremoved before leaving the lab to prevent contaminating surface that you touch.

J. Animal Handling

Safety precautions are necessary for animal handling and transport to prevent transmission ofzoonotic agents to employees.

1. Employees should wear appropriate PPE specific to the potential exposures that may beassociated with the animal being handled or transported.
2. These safety concerns apply to those who have access to the animal being transported aswell as those who receive and use them.

K. Housekeeping

Special attention must be made to housekeeping details. All animal care areas, including areas in which hazardous materials are used and stored, should be kept clean in order to prevent clutter from becoming contaminated, thus leading to employee exposure.

1. Work surfaces should be wiped with disinfectant before work begins, immediately after anyspill, and at the end of the workday.
2. Floors should be disinfected or decontaminated daily or weekly, as appropriate to thepotential hazards.
3. Appropriate dust suppression methods should be routinely used such as wet mopping andthe use of a HEPA-filtered vacuum cleaner.

L. Waste Disposal

Waste disposal should occur at scheduled intervals based on the amount of waste generated and the risk posed by the hazardous agents in the waste material.

1. Adequate space should be available for on-site collection, storage, treatment, and disposalof waste.
2. The disposal of hazardous wastes is subject to federal, state, and local regulations, whichchange frequently.
3. Environmental health and safety staff must keep all generators of hazardous wasteinformed of disposal procedures to ensure compliance with current requirements.

M. Cage Cleaning

When cleaning cages, contaminated shavings, feces, urine, and other potentially biohazardous, contaminated, or allergenic materials should be removed with methods that protect workers:

1. Biological safety cabinets are designed as bedding dump stations to protect workers fromhazardous aerosols that could be generated during cage cleaning.
2. Protective clothing will protect workers from contact and percutaneous exposure.
3. Eyes, face, and body must be protected when working with hazardous chemicals.
4. Sharp edges on cages and ancillary equipment should be identified and eliminated.
5. Changes may need to be made in ventilation and work practices to avoid excessive heatexposure in cage washing areas.
6. Appropriate footwear should be worn to prevent accidents on wet, slippery surfaces. Likewise, protective shoes should be worn when moving carts and other heavy objects.

7. PPE will protect the part of the body that is reasonably expected to come into contact with hazardous agents. Selection should be based on specific knowledge of the potential hazards, experience, and sound professional judgment.
    a. Non-powdered latex, vinyl, or other appropriate protective gloves should be worn for handling potentially contaminated animals or hazardous materials.
    b. Care must be taken to ensure that the glove material provides an adequate barrier against the expected hazard.
    c. Glove length is selected to protect the area at risk.
    d. Disposable vinyl or non-powdered latex examination or surgical gloves will not be reused.
    e. Heavy-duty rubber gloves are commonly used for washing cages as these gloves hold up well when cleaning and disinfecting.
8. Uniforms, gowns, or laboratory coats should be worn to protect workers from animal urine and feces.
    a. Such garb should not be worn outside the work area (unless it is covered).
    b. Protective clothing should be selected so that it provides an adequate barrier against the type and extent of exposure expected (e.g., cage washing personnel should wear heavy rubber aprons and gloves to wash cages).
    c. Decontamination verses disposal of protective equipment is an important consideration as prices for reprocessing contaminated laundry can be more expensive than providing disposable gowns.
9. Safety glasses should be considered minimal eye protection and worn to prevent injury from projectiles, minor splashes, or contact of contaminated hands with eyes.
    a. Goggles or face shields should be used for tasks involving infectious or hazardous liquids and especially when disinfectants and cleaning agents are used under pressure.
    b. Surgical masks can provide some protection of the mouth from splashes.
10. Employees who need respiratory protection from exposure to aerosols should be enrolled in a respiratory program that is in compliance with OSHA standards. The selections and use of proper respiratory protection equipment should be coordinated through UNMC Environmental Health and Safety and NM Employee Health. Managers must supply Nebraska Medicine Employee Health with a job description and a statement of necessity for fit testing for the position.

- High-risk including household contacts and sex partners of HbsAg-positive persons; users of illicit injectable drugs; heterosexuals with more than one sex partner in 6 months; men who have sex with men; people with recently diagnosed STDs; patients in hemodialysis units and patients with renal disease that may result in dialysis; recipients of certain blood products; healthcare workers and public safety workers who are exposed to blood; clients and staff of institutions for the developmentally disabled; inmates of long-term correctional facilities, and certain international travelers. Note: Prior serologic testing may be recommended depending on the specific level of risk and/or likelihood of previous exposure.
- All adolescents.

Note: In 1997, the NIH Consensus Development Conference, a panel of national experts, recommended that hepatitis B vaccination be given to all persons infected with hepatitis C virus.

Ed. Note: Do serologic screening for people who have emigrated from endemic areas. When HbsAg- positive persons are identified, offer them appropriate disease management. In addition, screen their household members and intimate contacts and, if found susceptible, vaccinate.

Appendix IV

Employee Health
Declination of Hepatitis B Vaccination

I understand that due to my occupational exposure to blood or other potentially infectious materials I may be at risk of acquiring Hepatitis B virus (HBV) infection. I have been given the opportunity to be vaccinated with Hepatitis B vaccine, at no charge to myself. However, I decline Hepatitis B vaccination at this time. I understand that by declining this vaccine, I continue to be at risk of acquiring Hepatitis B, a serious disease. If in the future I continue to have occupational exposure to blood or other potentially infectious materials and I want to be vaccinated with Hepatitis B vaccine, I can receive the vaccination series at no charge to me.

I release my employer and/or The Nebraska Medical Center, their employees and its medical staff from any and all adverse consequences that may arise as a result of my declining the vaccination. I understand that my signature below constitutes my acknowledgement that I have read and understood the Vaccination Information Statement (VIS) about Hepatitis B virus disease and vaccine.

Signature: _____

Dept: _____ **Date:** _____

Appendix V

Summary of Recommendations for Adult Hepatitis B Immunization

Vaccine Nameand Route	For Whom It Is Recommended	Schedule	Contraindicationsand Precautions
Hepatitis B Give IM Brands may be used interchangeably	• High-risk including household contacts and sex partners of HbsAg-positive persons; users of illicit injectable drugs; heterosexuals with more than one sex partner in 6 months; men who have sex with men; people with recently diagnosed STDs; patients in hemodialysis units and patients with renal disease that may result in dialysis; recipients of certain blood products; healthcare workers and public safety workers who are exposed to blood; clients and staff of institutions for the developmentally disabled; inmates of long-term correctional facilities, and certain international travelers. Note: Prior serologic testing may be recommended depending on the specific level of risk and/or likelihood of previous exposure. • All adolescents. Note: In 1997, the NIH Consensus Development Conference, a panel of national experts, recommended that hepatitis B vaccination be given to all persons infected with hepatitis C virus. Ed. Note: Do serologic screening for people who have emigrated from endemic areas. When HbsAg-positive persons are identified, offer them appropriate disease management. In addition, screen their household members and intimate contacts and, if found susceptible, vaccinate.	• Three doses are needed on a 0, 1, 6m schedule. • Alternative timing options for vaccination include: 0, 2, 4 months 0, 1, 4 months • There must be 4 weeks between dose #1 and #2, and 8 weeks between doses #2 and #3. Overall there must be at least 4 months between doses #1 and #3. • Schedule for those who have fallen behind: If the series is delayed between doses, do not start the series over. Continue from where you left off. • May be given with all other vaccines but at a separate site.	• Previous anaphylactic reaction to this vaccine or to any of its components. • Moderate or severe acute illness.

Appendix VI

TABLE 1. Recommended HIV postexposure prophylaxis (PEP) for percutaneous injuries

Exposure type	Infection status of source: HIV-positive, class 1*	HIV-positive, class 2*	Source of unknown HIV status†	Unknown source§	HIV-negative
Less severe¶	Recommend basic 2-drug PEP	Recommend expanded ≥3-drug PEP	Generally, no PEP warranted; however, consider basic 2-drug PEP** for source with HIV risk factors††	Generally, no PEP warranted; however, consider basic 2-drug PEP** in settings in which exposure to HIV-infected persons is likely	No PEP warranted
More severe§§	Recommend expanded 3-drug PEP	Recommend expanded ≥3-drug PEP	Generally, no PEP warranted; however, consider basic 2-drug PEP** for source with HIV risk factors††	Generally, no PEP warranted; however, consider basic 2-drug PEP** in settings in which exposure to HIV-infected persons is likely	No PEP warranted

* HIV-positive, class 1 — asymptomatic HIV infection or known low viral load (e.g., <1,500 ribonucleic acid copies/mL). HIV-positive, class 2 — symptomatic HIV infection, acquired immunodeficiency syndrome, acute seroconversion, or known high viral load. If drug resistance is a concern, obtain expert consultation. Initiation of PEP should not be delayed pending expert consultation, and, because expert consultation alone cannot substitute for face-to-face counseling, resources should be available to provide immediate evaluation and follow-up care for all exposures.

† For example, deceased source person with no samples available for HIV testing.

§ For example, a needle from a sharps disposal container.

¶ For example, solid needle or superficial injury.

** The recommendation "consider PEP" indicates that PEP is optional; a decision to initiate PEP should be based on a discussion between the exposed person and the treating clinician regarding the risks versus benefits of PEP.

†† If PEP is offered and administered and the source is later determined to be HIV-negative, PEP should be discontinued.

§§ For example, large-bore hollow needle, deep puncture, visible blood on device, or needle used in patient's artery or vein.

Centers for Disease Control and Prevention. Updated U.S. Public Health Service Guidelines for the Management of Occupational Exposures to HIV and Recommendations for Postexposure Prophylaxis. *MMWR* 2005; 54: 1-17

TABLE 2. Recommended HIV postexposure prophylaxis (PEP) for mucous membrane exposures and nonintact skin* exposures

Exposure type	Infection status of source: HIV-positive, class 1†	HIV-positive, class 2†	Source of unknown HIV status§	Unknown source¶	HIV-negative
Small volume**	Consider basic 2-drug PEP††	Recommend basic 2-drug PEP	Generally, no PEP warranted§§	Generally, no PEP warranted	No PEP warranted
Large volume¶¶	Recommend basic 2-drug PEP	Recommend expanded ≥3-drug PEP	Generally, no PEP warranted; however, consider basic 2-drug PEP†† for source with HIV risk factors§§	Generally, no PEP warranted; however, consider basic 2-drug PEP†† in settings in which exposure to HIV-infected persons is likely	No PEP warranted

* For skin exposures, follow-up is indicated only if evidence exists of compromised skin integrity (e.g., dermatitis, abrasion, or open wound).

† HIV-positive, class 1 — asymptomatic HIV infection or known low viral load (e.g., <1,500 ribonucleic acid copies/mL). HIV-positive, class 2 — symptomatic HIV infection, AIDS, acute seroconversion, or known high viral load. If drug resistance is a concern, obtain expert consultation. Initiation of PEP should not be delayed pending expert consultation, and, because expert consultation alone cannot substitute for face-to-face counseling, resources should be available to provide immediate evaluation and follow-up care for all exposures.

§ For example, deceased source person with no samples available for HIV testing.

¶ For example, splash from inappropriately disposed blood.

** For example, a few drops.

†† The recommendation "consider PEP" indicates that PEP is optional; a decision to initiate PEP should be based on a discussion between the exposed person and the treating clinician regarding the risks versus benefits of PEP.

§§ If PEP is offered and administered and the source is later determined to be HIV-negative, PEP should be discontinued.

¶¶ For example, a major blood splash.

Appendix VII

Recommendations for Post-exposure Prophylaxis after Percutaneous or Mucosal Exposure to HBV in an Occupational Setting

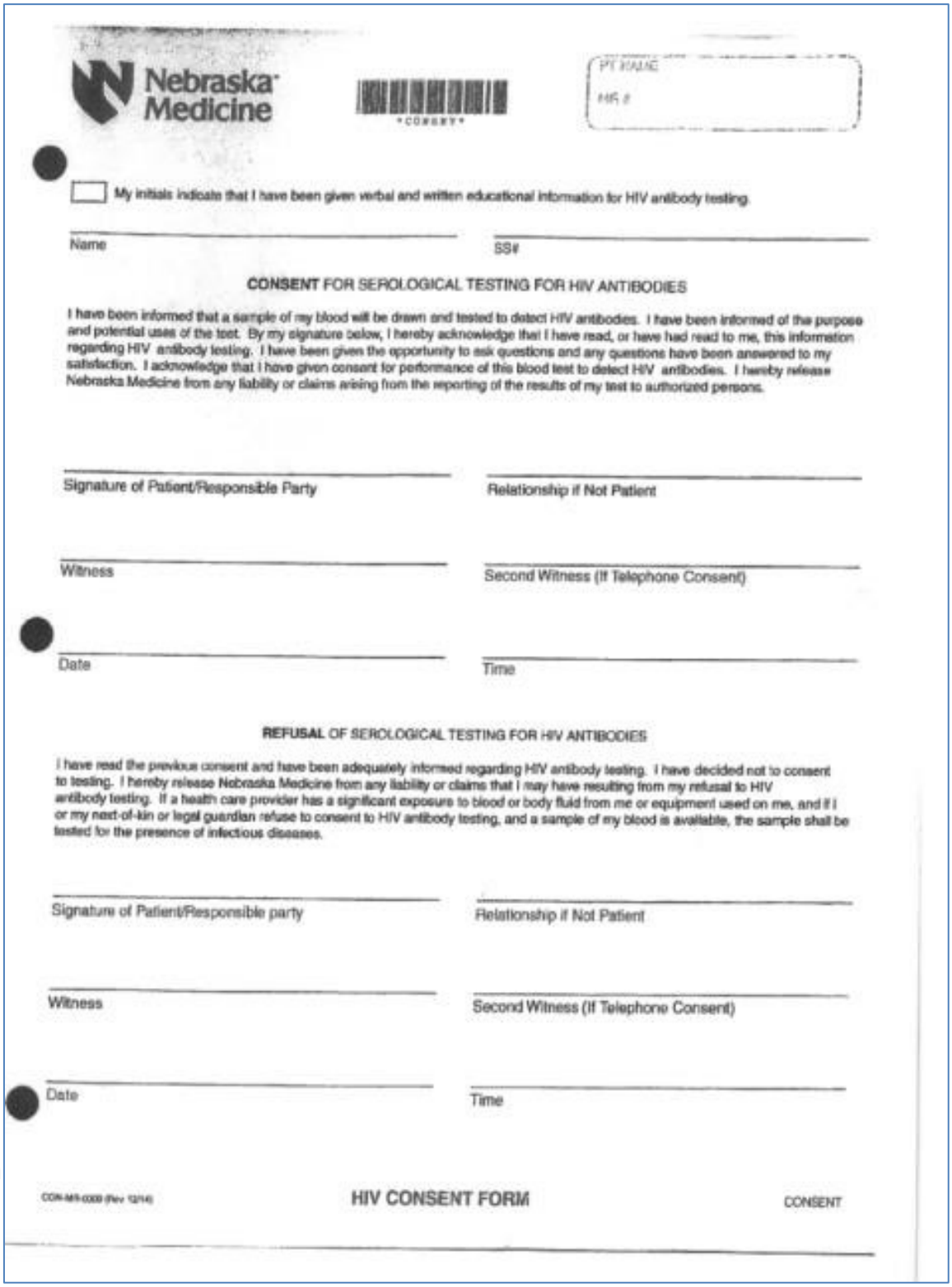
Vaccination and antibody response status of exposed persons[1]	Treatment			
	Source HBsAg positive	Source HBsAg negative	Source is unknown or not tested	
			High risk	Low risk
Unvaccinated	HBIG[2] (1 dose) and begin hepatitis B vaccine series	Begin hepatitis B vaccine series	Begin hepatitis B vaccine series	Begin hepatitis B vaccine series
Known responder[3]	No treatment	No treatment	No treatment	No treatment
Nonresponder[3]				
Not revaccinated[4]	HBIG (1 dose) and begin a revaccination series	Begin a revaccination series	HBIG (1 dose) and begin a revaccination series	Begin a revaccination series
After revaccination[4]	HBIG (2 doses)[5]	No treatment	HBIG (2 doses)[5]	No treatment
Antibody response unknown	Test for anti-HBs[6] If adequate[3], no treatment If inadequate, HBIG x 1 and vaccine booster	No treatment	Test for anti-HBs[6] If adequate,[3] no treatment If inadequate, give vaccine booster and check anti-HBs in 1–2 months	

1. Persons known to have had HBV infection in the past or who are chronically infected do not require HBIG or vaccine.
2. Hepatitis B immune globulin (0.06 ml/kg) administered IM.
3. Adequate response is anti-HBs of at least 10 mIU/mL after vaccination.
4. Revaccination = additional 3-dose series of hepatitis B vaccine administered after the primary series.
5. First dose as soon as possible after exposure and the second 1-month later.
6. Testing should be done as soon as possible after exposure.

Source: This table was adapted from "Updated U.S. PHS Guidelines for the Management of Occupational Exposures to HBV, HCV, and HIV and Recommendations for Postexposure Prophylaxis," MMWR, 6/29/01, Vol. 50 (RR-11)

Appendix IX

Nebraska Medicine HIV Antibodies Blood Test Information and Consent/Refusal Form



Nebraska Medicine

CONSENT

PT NAME

MR #

☐ My initials indicate that I have been given verbal and written educational information for HIV antibody testing.

Name _____ SS# _____

CONSENT FOR SEROLOGICAL TESTING FOR HIV ANTIBODIES

I have been informed that a sample of my blood will be drawn and tested to detect HIV antibodies. I have been informed of the purpose and potential uses of the test. By my signature below, I hereby acknowledge that I have read, or have had read to me, this information regarding HIV antibody testing. I have been given the opportunity to ask questions and any questions have been answered to my satisfaction. I acknowledge that I have given consent for performance of this blood test to detect HIV antibodies. I hereby release Nebraska Medicine from any liability or claims arising from the reporting of the results of my test to authorized persons.

Signature of Patient/Responsible Party _____ Relationship if Not Patient _____

Witness _____ Second Witness (If Telephone Consent) _____

Date _____ Time _____

REFUSAL OF SEROLOGICAL TESTING FOR HIV ANTIBODIES

I have read the previous consent and have been adequately informed regarding HIV antibody testing. I have decided not to consent to testing. I hereby release Nebraska Medicine from any liability or claims that I may have resulting from my refusal to HIV antibody testing. If a health care provider has a significant exposure to blood or body fluid from me or equipment used on me, and if I or my next-of-kin or legal guardian refuse to consent to HIV antibody testing, and a sample of my blood is available, the sample shall be tested for the presence of infectious diseases.

Signature of Patient/Responsible party _____ Relationship if Not Patient _____

Witness _____ Second Witness (If Telephone Consent) _____

Date _____ Time _____

CON-MR-0009 (Rev 12/14) HIV CONSENT FORM CONSENT

Appendix IX (Continued)

NEBRASKA MEDICAL CENTER
HIV ANTIBODIES BLOOD TEST INFORMATION
AND CONSENT/REFUSAL FORM

In compliance with Nebraska and Iowa state law, written informed consent is required, prior to performing a blood test for antibodies to Human Immunodeficiency Virus (HIV).

HIV antibody testing may be requested by your physician for diagnostic information and/or when a health care worker is exposed to blood/body fluids.

WHAT IS HIV? The Human Immunodeficiency Virus (HIV) is a virus which is the cause of AIDS. AIDS is a name given to a group of serious diseases which result from the suppression of the body's immune system by the virus now commonly known as HIV.

WHAT IS THE TEST AND WHAT DOES IT TELL YOU? A sample of your blood will be tested to see if it contains antibodies to HIV which may indicate that infection has occurred. There are limitations to the accuracy of any chemical test and results are not 100% accurate. The test may be useful in clinical situations and may help you and your physician make decisions.

INDIVIDUALS MORE LIKELY TO BE INFECTED INCLUDE:

A. Men who have had sex with another man at any time since 1978.
B. Past and present users of intravenous drugs.
C. Recipients of multiple blood transfusions or blood products particularly in high-risk areas from 1978 to May 1, 1985.
D. Individuals with multiple sex partners or anyone who has had sex with persons in Category A or B.
E. Children born to HIV infected mothers.

WAYS TO PREVENT OR REDUCE THE RISK OF EXPOSURE TO THE AIDS VIRUS - Abstain from multiple sexual relationships. As an alternative, maintain a monogamous relationship along with the use of condoms and spermicidal jellies. Do not use illegal injectable drugs or share needles with others. Use good handwashing techniques and wear latex gloves and/or other protective equipment when there is a chance of being exposed to another person's blood or body fluids. Avoid any activity that involves the exchange of blood or body fluids.

WHAT POSITIVE HIV RESULTS MEAN - Your blood sample has been tested more than once and the test results contain antibodies to the AIDS virus (HIV). You have been infected with the AIDS virus and your body has produced antibodies. You have a definite risk for developing AIDS. Research has shown that most people with HIV antibodies have active virus in their bodies and can transmit the disease to others, even if they show no symptoms. You should consider yourself infectious and capable of passing the virus to others. If your test is positive and you have not engaged in high risk activity, you may have a false positive. Further evaluation by your physician is recommended.

Positive HIV testing does not necessarily mean that you have AIDS, will get AIDS, or that you are immune to AIDS.

WHAT I SHOULD DO IF MY TEST IS POSITIVE - When test results are positive, it is likely that you will carry the virus in your body throughout your life. Protect others from the virus by following AIDS precautions in sex, drug use, waste disposal, and general hygiene. The best AIDS precautions are sex abstinence and no illegal injectable drug use. Alternatives include the use of condoms along with spermicidal jellies. See your physician for a complete evaluation and care. Do not donate blood, plasma, sperm, body organs or other tissue. Do not share needles with anyone. Continue close and supportive relationships with family members and friends. Remember that the AIDS virus is not spread by ordinary nonsexual contact or affectionate behaviors that do not involve the exchange of body fluids. If the test is positive, in combination with other data, a physician may possibly diagnose AIDS.

WHAT NEGATIVE HIV TESTING RESULTS MEAN - Negative test results mean no antibodies to the AIDS virus (HIV) have been found in your blood at the time of the test. Possible explanations for a negative test result are that you have not been infected with the AIDS virus or you may have been infected with the AIDS virus but have not yet produced the antibodies. Research indicates that most people will produce antibodies within 12 weeks after infection, while others produce antibodies at a slower rate. A very small number of people may not produce antibodies. If your test is negative it does not mean that you have nothing to worry about. Repeated exposure to the AIDS virus will increase your chances of becoming infected. It does not mean that you are immune to the virus.

WHO WILL PERFORM THE TESTS - Testing will be performed through NMC Pathology Department for all health care worker related exposures. Patients who are not involved in health care worker exposures may choose to have diagnostic testing performed anonymously at alternate test sites or by their own physician.

WHO WILL KNOW THE RESULTS - This test is confidential. Results of this test will be placed in your confidential medical record, however, if the test is positive, the law requires that the results be reported to the Douglas County Department of Health and may be investigated by them. If you are a minor and the test is confirmed positive, your parents or legal guardian will be informed of the test results. If you are tested because of an on-the-job exposure, results will be placed in the health care worker's confidential file. Medical practitioners and/or health care personnel responsible for your care and treatment may know your test results. Further disclosure of the test results will not be made without your written consent, except as required by law.

Appendix X

The Nebraska Medical Center
Employee Health/Risk Management
987526 Nebraska Medical Center
Omaha, NE 68198-7526

__[date]_____

Dear _____,

Regarding your incident on __[date]_____, as we informed you, the source (patient) testing results are:

Hepatitis B surface antigen: __[result]_____
Hepatitis C antibody: __[result]_____
HIV: __[result]_____

Results of your blood tests drawn on __[date]_____ are:

Hepatitis B surface antibody: __[result]_____
Hepatitis C antibody: __[result]_____
HIV 1/HIV 2 (AIDS testing): __[result]_____

Source results as above are all Negative. No further lab testing recommended.

We recommend follow up blood testing __[testing required]____ for you on the following date(s).

6 weeks due: __[date]___
3 months due: __[date]__
6 months due: __[date]__

You will be reminded when due.

Please contact Barb Wolford in Employee Health at 402 552-2193 if you have any questions or concerns.

Thank you.

This information is being provided to you as a result of a confidential medical evaluation and follow-up for a reported bloodborne pathogen exposure.
The source results are made available to you according to federal regulation. Under applicable laws and regulations you may not further disclose their identity and infectious status.

Confidential Report
Consistent with Federal Register, Bloodborne Pathogens - (29 CFR 1910.1030).

Healthcare Professional Signature: _____[signature] _____ Date: _____

Appendix XI

SEQUENCE FOR PUTTING ON (DONNING) PERSONAL PROTECTIVE EQUIPMENT (PPE)

The type of PPE used will vary based on the level of precautions required, such as standard and contact, droplet or airborne infection isolation precautions. The procedure for putting on and removing PPE should be tailored to the specific type of PPE.

1. GOWN

- Fully cover torso from neck to knees, arms to end of wrists, and wrap around the back
- Fasten in back of neck and waist

2. MASK OR RESPIRATOR

- Secure ties or elastic bands at middle of head and neck
- Fit flexible band to nose bridge
- Fit snug to face and below chin
- Fit-check respirator

3. GOGGLES OR FACE SHIELD

- Place over face and eyes and adjust to fit

4. GLOVES

- Extend to cover wrist of isolation gown

USE SAFE WORK PRACTICES TO PROTECT YOURSELF AND LIMIT THE SPREAD OF CONTAMINATION

- Keep hands away from face
- Limit surfaces touched
- Change gloves when torn or heavily contaminated
- Perform hand hygiene

CDC

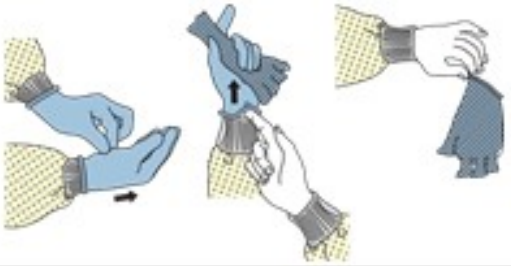
Appendix IX (continued)

HOWTO SAFELY REMOVE PERSONAL PROTECTIVE EQUIPMENT (PPE) (DOFFING) EXAMPLE 1

There are a variety of ways to safely remove PPE without contaminating your clothing, skin, or mucous membranes with potentially infectious materials. Here is one example. **Remove all PPE before exiting the patient room** except a respirator, if worn. Remove the respirator **after** leaving the patient room and closing the door. Remove PPE in the following sequence:

1. GLOVES

- Outside of gloves are contaminated!
- If your hands get contaminated during glove removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Using a gloved hand, grasp the palm area of the other gloved hand and peel off first glove
- Hold removed glove in gloved hand
- Slide fingers of ungloved hand under remaining glove at wrist and peel off second glove over first glove
- Discard gloves in a waste container



2. GOGGLES OR FACE SHIELD

- Outside of goggles or face shield are contaminated!
- If your hands get contaminated during goggle or face shield removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Remove goggles or face shield from the back by lifting head band or ear pieces
- If the item is reusable, place in designated receptacle for reprocessing. Otherwise, discard in a waste container

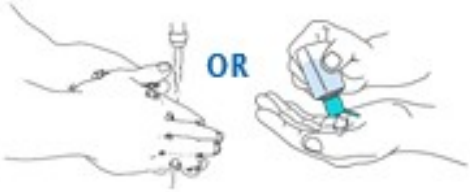
3. GOWN

- Gown front and sleeves are contaminated!
- If your hands get contaminated during gown removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Unfasten gown ties, taking care that sleeves don't contact your body when reaching for ties
- Pull gown away from neck and shoulders, touching inside of gown only
- Turn gown inside out
- Fold or roll into a bundle and discard in a waste container

4. MASK OR RESPIRATOR

- Front of mask/respirator is contaminated — DO NOT TOUCH!
- If your hands get contaminated during mask/respirator removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Grasp bottom ties or elastics of the mask/respirator, then the ones at the top, and remove without touching the front
- Discard in a waste container

5. WASH HANDS OR USE AN ALCOHOL-BASED HAND SANITIZER IMMEDIATELY AFTER REMOVING ALL PPE



PERFORM HAND HYGIENE BETWEEN STEPS IF HANDS BECOME CONTAMINATED AND IMMEDIATELY AFTER REMOVING ALL PPE

CDC

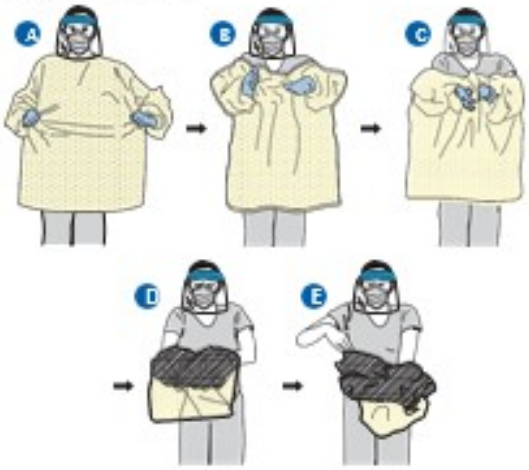
Appendix IX (continued)

HOW TO SAFELY REMOVE PERSONAL PROTECTIVE EQUIPMENT (PPE) (DOFFING) EXAMPLE 2

Here is another way to safely remove PPE without contaminating your clothing, skin, or mucous membranes with potentially infectious materials. **Remove all PPE before exiting the patient room** except a respirator, if worn. Remove the respirator **after** leaving the patient room and closing the door. Remove PPE in the following sequence:

1. GOWN AND GLOVES

- Gown front and sleeves and the outside of gloves are contaminated!
- If your hands get contaminated during gown or glove removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Grasp the gown in the front and pull away from your body so that the ties break, touching outside of gown only with gloved hands
- While removing the gown, fold or roll the gown inside-out into a bundle
- As you are removing the gown, peel off your gloves at the same time, only touching the inside of the gloves and gown with your bare hands. Place the gown and gloves into a waste container



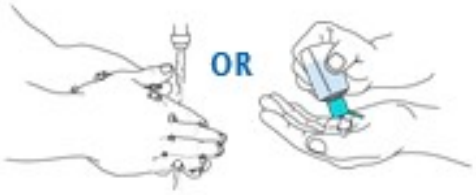
2. GOGGLES OR FACE SHIELD

- Outside of goggles or face shield are contaminated!
- If your hands get contaminated during goggle or face shield removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Remove goggles or face shield from the back by lifting head band and without touching the front of the goggles or face shield
- If the item is reusable, place in designated receptacle for reprocessing. Otherwise, discard in a waste container

3. MASK OR RESPIRATOR

- Front of mask/respirator is contaminated — DO NOT TOUCH!
- If your hands get contaminated during mask/respirator removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Grasp bottom ties or elastics of the mask/respirator, then the ones at the top, and remove without touching the front
- Discard in a waste container

4. WASH HANDS OR USE AN ALCOHOL-BASED HAND SANITIZER IMMEDIATELY AFTER REMOVING ALL PPE



PERFORM HAND HYGIENE BETWEEN STEPS IF HANDS BECOME CONTAMINATED AND IMMEDIATELY AFTER REMOVING ALL PPE

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