

IOWA CITY DEPARTMENT OF VETERANS AFFAIRS (VA) HEALTH CARE SYSTEM
Iowa City, Iowa

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OCCUPATIONAL HEALTH AND SAFETY FOR RESEARCH PERSONNEL WITH
ANIMAL CONTACT

1. PURPOSE. To define the procedures, guidelines and other requirements for ensuring a safe workplace and safe work practices for all employees who work with or come in routine contact with laboratory animals.

2. POLICY. These regulations and procedures outline the requirements set for all employees who come in routine contact with animals, or their products, at the time the employee is initially hired and annually or semiannually thereafter, as required by occupational exposure. This policy applies to all VA employees, including "without compensation" (WOC) employees, contractors, and Intergovernmental Personnel Agreement (IPA) personnel engaged in or requesting support for VA research. When an employee is hired, or for current employees, when this program is initiated, the employee will receive in writing this document which addresses the purposes and specifics of this program. Signed acknowledgment of receipt of this notification and either agreement to participate or voluntary decision not to participate will be filed in the Research Office.

3. RESPONSIBILITY.
 - a. DIRECTOR. It is the responsibility of the Director to develop and implement a program for personal hygiene, protective safety measures, safe use of hazardous materials, and preventive medicine for personnel engaged in the care and use of research animals.

 - b. ANIMAL FACILITY MANAGER. It is the responsibility of the Animal Facility Manager to advise the employee of what group (s) of animals and level of contact they will be exposed to and to ensure that all employees of the Animal Research Facility receive the opportunity for a pre-employment physical and yearly follow-up physicals.

 - c. PRINCIPAL INVESTIGATOR. It is the responsibility of the Principal Investigator to advise the employee of what group(s) of animals they will be exposed to and to ensure that the employee is aware of the recommendation for a pre-employment physical and yearly follow-up physicals.

 - d. EMPLOYEE HEALTH. It is the responsibility of Employee Health to maintain records of all personnel who have taken the pre-employment physical and subsequent follow-up physicals, and to advise employees when they are due for another physical.

e. **RESEARCH OFFICE.** The Research Office will identify involved employees and notify employees to fill out the annual questionnaire form and schedule appointments with Employee Health.

f. **EMPLOYEES.** It is the responsibility of all employees who come into routine contact with laboratory animals, or their products to participate in the Occupational Health Program or sign a waiver declining to participate. By signing the waiver, the employee understands that non-participation in the Occupational Health Program could result in adverse health effects. Regardless, employees may not opt out of immunizations or tests mandated by the Director or Chief of Staff, nor opt out of testing that is necessary to protect the health and well-being of laboratory animals. It is the responsibility of the employee to provide proof to the Institutional Animal Care and Use Committee (IACUC) that they have enrolled in the Occupational Health Program or have waived his/her enrollment.

4. **PROCEDURES.** The key elements of the Occupational Health Program are outlined below.

a. **PRE-EMPLOYMENT MEDICAL EVALUATION:** A pre-employment physical exam needs to be conducted to ensure that a prospective new employee is capable of the physical demands of the position, and that pre-existing medical conditions do not place the employee or others at risk. WOC employees will abide by University of Iowa pre-employment requirements.

b. **MEDICAL FOLLOW-UP.** At least annually after employment begins, an employee health physician, or other qualified medical professional, must review each employee's medical history. Particular attention is to be paid to immunizations needed to prevent transmissible diseases and to procedures that can help prevent the development of or minimize allergies that could place the employee in jeopardy while in the presence or in contact with animals. This review may take the form of a questionnaire review performed as part of an interview between the employee and a health care professional, and/or it may take the form of a physical exam.

c. **OCCUPATIONAL SAFETY TRAINING.** Annually, personnel who have contact with laboratory animals will receive training in the proper handling of the animals with which they will work. This training includes the use of appropriate animal restraint techniques, protective clothing, safe equipment, use of effective hygiene practices and ergonomics of their tasks.

d. **REPORTING INJURIES AND ILLNESS.** Injuries, animal bites, animal scratches, and cuts sustained in the animal research facility or research laboratory must be reported promptly to the employee's supervisor and the Employee Health Physician. VA Form 2162, Report of Accident, needs to be completed at Employee Health. The employee and supervisor will also need to complete a CA-1 (injury) or a CA-2 (illness),

whichever is appropriate. If the injury occurs after hours, weekends and/or holidays, the employee should report to Urgent Care.

e. **PERSONAL HYGIENE.** All employees need to understand the importance of personal hygiene and the specific measures that routinely are to be taken to protect themselves against zoonotic agents found naturally in experimental animals, as well as hazardous agents used experimentally in approved biomedical studies using animals.

(1) **HAND WASHING.** Hand washing is a crucial safety measure for safeguarding personnel in the animal research facility. Hands need to be washed with soap and water whenever they touch contaminated or potentially contaminated surfaces, liquids or body fluids. Hands need to be washed before eating, drinking, applying cosmetics, touching contact lenses, and leaving the facility. All sinks in the animal research facility need to have soap and paper towels located conveniently near the sink. Foaming alcohol hand cleansers are posted in ARF hallways.

(2) **SHOWERS.** Showers may be required after working with some hazardous agents. Showers are available to all employees with animal contact and are located in Building 42, B42A. Employees are encouraged to shower at the end of the workday.

f. **PROTECTIVE CLOTHING AND PERSONAL SAFETY CONSIDERATIONS.**

(1) **PROTECTIVE CLOTHING (Personal Protective Equipment) AND DISPOSABLE ITEMS.** Protective clothing is provided to employees at no cost. Protective gear and clothing offered to employees working with animals, or their products include disposable gloves, goggles, noise protectors, respirators, uniforms (laundered at hospital facilities), steel-toed shoes, and back braces. Soiled protective clothing must not be taken away from the work site, and soiled outer garments must not be worn outside the Animal Research Facility.

(2) **RESEARCH AND OTHER PERSONNEL WITH ANIMAL CONTACT.** The type of protective clothing needed depends on the procedures that will be performed, but as a minimum, clean lab coats and gloves should be worn by all personnel while handling animals or animal tissues. For those with allergies to animals, respirators will be worn. Special equipment and clothing may be required when personnel are engaged in studies that involve hazardous agents. The specific measures will be determined by the Safety Officer in consultation with the investigator, the Biohazard and Safety Committee, and the veterinarian.

(3) **OTHER PRECAUTIONS.** Personnel need to be trained to avoid hand contact with their eyes, face, mouth, or other body surfaces with contaminated gloves or hands. Smoking, eating, applying cosmetics, installing contact lenses, and similar procedures are prohibited within the animal research facility or in animal study areas except in designated areas that are free of potentially contaminated materials.

Employee food and beverages are to be stored only in refrigerators and/or freezers designated exclusively for such use.

g. WORK WITH HAZARDOUS AGENTS.

(1) Before experimental animals are treated with any hazardous agent, the project must have been approved by the Research and Development (R&D) Committee, and the procedures must have been approved by the IACUC and the Biohazard and Safety Committee.

(2) A Standard Operating Procedure (SOP) written for the husbandry staff and other personnel who will work with the animals must be prepared for each hazardous agent planned for use in animals. The SOP should be prepared with input from the veterinarian, the Safety and/or Biosafety Officer, and the responsible investigator(s).

(3) Prior to the initiation of any study, personnel who work with animals exposed to hazardous agents (or who clean their cages) must be trained in proper procedures for working with the animals and in the proper procedures relating to waste and equipment.

(4) SPECIAL XENOZOONOSIS CONSIDERATIONS. Immunologically compromised rodents such as the nude mouse and the severe combined immunodeficient (SCID) mouse, that receive human xenografts, body fluids, blood, or human infectious agents and related materials, present a potentially unique and poorly understood (xenozoonosis) risk. These rodents may develop persistent infections while remaining otherwise healthy. For this reason, such animals injected with these materials need to be handled with caution, following Biosafety Level 2 practices in accordance with the recommendations of the Safety Officer.

(5) STANDARD PRECAUTIONS. Standard precautions are a set of safe practices in which all human blood and certain human body fluids are treated as if known to be infectious for Human Immunodeficiency Virus (HIV), Hepatitis B Virus (HBV) and other blood borne pathogens. Intended primarily for personnel working directly with human blood components, other body fluids, etc., and unfixed tissues, such practices are relevant to all personnel working with potentially infectious materials in animal studies. Personnel working with animals treated with such materials must receive annual training to comply with the Bloodborne Pathogen Standards.

(6) CHEMICAL AGENTS AND THE MATERIAL SAFETY DATA SHEET (MSDS). All chemical agents purchased commercially are to have a MSDS that accompanies the shipment of the chemical, or available online as allowed by law. When purchases arrive the MSDS will be distributed to the using investigator and the animal research facility. The investigator and animal research facility can also contact

the Research Office to receive a MSDS. The animal research facility and investigators must maintain and routinely update an MSDS logbook for all chemicals.

(7) **RADIOACTIVE AGENTS.** The Radiation Safety Officer must review and approve, or require specific procedures that are to be followed when using radionuclides in animals. Personnel working with radionuclides must be trained specifically for work with these materials. All acquisition and disposition of radionuclides must be in accordance with the Nuclear Regulatory Commission (NRC) regulations covering these materials.

(8) **PROCEDURES FOR ANIMAL CARE STAFF.**

(a) A complete copy of the safety protocol for the hazardous agents found in an animal room needs to be posted near the entrance of the animal room. The safety protocol must contain all relevant information necessary to identify the personnel, procedures, safety precautions, waste disposal, carcass disposal, and related information about the hazardous study.

(b) The following information needs to be posted on the animal room door:

(1) Large biohazard, chemical hazard, or radiation hazard sign, as appropriate, and a limited access warning sign.

(2) The name of the agent, and the name and telephone number of the individual to contact in event of an emergency involving the agent.

(3) The personal protective equipment (PPE) required to safely enter the room.

(c) Animals receiving hazardous agents need to be housed separately from other animals to prevent cross contamination and simplify isolation of contaminated wastes. A biohazard or other appropriate warning sign and the name of the hazardous agent needs to appear on the cage cards of animals treated with a hazardous agent.

(d) If both treated and untreated animals are housed in the same room, the untreated animals need to be cleaned, fed, and watered first to reduce the possibility of accidental contamination of untreated animals. Rooms housing treated animals need to be cleaned last and animals in these rooms fed, watered, and manipulated after these procedures have been completed in other rooms. Upon completion of a study involving use of infectious or other hazardous material, the room housing animals exposed to such agents needs to be decontaminated before introduction of new animals.

(e) A device that draws aerosols away from the caretaker, such as an air filtered dump station, needs to be used when soiled, contaminated bedding is removed from animal cages.

(f) The caretaker needs to wear PPE, including a mask and gloves when removing soiled bedding from cages. Soiled bedding should be removed from cages in the cage dumping room (Building 42, B47), rather than in the animal rooms unless bedding changes in the room are approved by the IACUC and Biohazard and Safety Committee as part of a SOP for containing hazardous agents.

(g) Contamination with infectious agents may require that bedding be sterilized before being transported to the cage wash room for dumping. If soiled bedding containing hazardous material cannot be rendered harmless prior to transporting to the cage wash room, it may be necessary to bag, or double bag the bedding for direct transportation to an incinerator, or other disposal system. The methods of disposal need to be determined by the Safety Officer in consultation with the veterinarian, and comply with NRC, EPA, and CDC-NIH requirements.

(h) Upon completion of the necessary work with the carcass, it must be bagged, labeled, and disposed of in accordance with applicable regulations. Holding, when necessary, must be accomplished in the refrigerator or freezer (Building 42, B44) reserved for carcass disposal.

h. MISCELLANEOUS SAFETY PROCEDURES FOR ALL PERSONNEL.

(1) NEEDLE AND SYRINGE DISPOSAL. Employees must follow VAHCS policy on the proper use and disposal of syringes and needles. Needles are not to be recapped. Instead, syringes with attached uncapped needles should be dropped into puncture proof containers for disposal. Containers are available for every room in which sharps are used.

(2) ADEQUATE ANIMAL RESTRAINT. The chance of accidental needle sticks is reduced if animals are anesthetized or chemically restrained before being injected with hazardous agents.

(3) PREVENTION OF AEROSOL FORMATION. Whenever possible, hazardous agents need to be prepared or purchased in rubber-topped vials so that the aerosols associated with open tube manipulations can be minimized. Solutions containing hazardous agents are never to be expressed through a needle into disposal containers or disinfectant pans because of the aerosols produced; rather the syringe with solution must be discarded directly into an appropriate puncture proof sharps container. When infectious agents are used, the sharps container needs to be sterilized before disposal. When hazardous agents require disposal by incineration immediately after use, the sharps container must be processed in the same fashion.

(4) USE OF HOODS. Hazardous agents need to be injected or otherwise administered within an appropriate biocontainment or chemical hood. When technical considerations make such a practice impossible, exceptions are to be justified and approved by the Biohazard and Safety Committee.

(5) MANIPULATING ANIMALS. Appropriate animal restraint during manipulation greatly reduces the likelihood of accidental exposure. The fewer manipulations of an animal that a single individual performs when handling hazardous agents, the better. Should an accident occur, it is much safer to have a second person available to assist in decontamination procedures, and to audit the accident. When hazardous agents are being manipulated in the animal research facility, distractions needs to be minimized.

i. REVIEW. The Occupational Health Program will be reviewed semiannually by the IACUC. In addition, the IACUC will look at special considerations when reviewing new protocols.

5. REFERENCES. VHA Handbook 1200.7 Appendix C

6. RESCISSIONS. Medical Center Memorandum 09-114, Occupational Health and Safety for Research Personnel with Animal Contact, dated November 19, 2009.

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Director