DEPARTMENT OF VETERANS AFFAIRS
South Texas Veterans Health Care System
San Antonio, Texas 78229-4404

Research Service Memorandum 10-06

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ANIMAL CARE AND USE PROGRAM

Animal Biosafety Level 2 in the Veterinary Medical Unit

1. **PURPOSE**: To outline standard operating procedures to facilitate the safe and efficient operation of an Animal Biosafety Level 2, using general procedures set forth by CDC/NIH.

2. **ACTION:** Procedures (Animal Biosafety Level 2)

a. **STANDARD MICROBIOLOGICAL PRACTICES:**

(1) Self-closing doors to animal rooms are kept closed where infected animals are housed.

(2) Work surfaces (sink area, lab carts, etc.) are decontaminated after any spill or splash of potentially infectious material with Clidox-S (1:5:1) and isopropyl alcohol.

(3) Eating, drinking, smoking, handling contacts lenses, applying cosmetics, and storing food for human consumption must not be permitted in animal rooms. Food must be stored outside the laboratory area in cabinets or refrigerators designated and used for this purpose.

(4) Persons must wash their hands after working with potentially hazardous materials and before leaving the laboratory.

(5) All procedures are carefully performed to minimize the creation of splashes and/or aerosols.

(6) An insect and rodent control program is in effect.

(7) **Precautions must always be taken with sharp items:**

(a) Careful management of needles and other sharps are of primary importance. Needles must not be bent, sheared, broken, recapped, removed from disposable syringes, or otherwise manipulated by hand before disposal.

(b) Used disposable needles and syringes must be carefully placed in conveniently located puncture-resistant containers used for sharps disposal.

(c) Non-disposable sharps must be placed in a hard walled container for transport to a processing area for decontamination, preferably by autoclaving.

(d) Broken glassware must not be handled directly. Instead, it must be removed using a brush and dustpan, tongs, or forceps. Plastic ware should be substituted for glassware whenever possible.

(8) A sign incorporating the universal biohazard symbol must be posted at the entrance to the laboratory when infectious agents are present.

(a) Posted information must include: the laboratory's Biosafety level, the supervisor's name (or other responsible personnel), telephone number, and required procedures for entering and exiting the laboratory.

(b) The name of any infectious agent should be posted.

(9) The principal investigator must ensure that laboratory personnel receive appropriate training regarding their duties, the necessary precautions to prevent exposures, and exposure evaluation procedures.

(a) Personnel must receive annual update or additional training when procedural or policy changes occur.

(b) Women of child-bearing age should be provided with information regarding immune competence and conditions that may predispose them to infection. Individuals having these conditions should be encouraged to self-identify to the institution's Occupational Medicine Physician for appropriate counseling and guidance

b. **SPECIAL PRACTICES:**

(1) Dirty cages with bedding are decontaminated, preferably by autoclaving, before they are cleaned and washed.

(2) Surgical mask, gowns, and gloves provided by VMU are worn by all personnel that enter animal rooms. This protective clothing (located in U238 and R204 anteroom) is removed before leaving the animal facility.

(3) The Veterinary Medical Consultant limits access to the animal rooms to personnel who have been advised of the potential hazard and who need to enter the rooms for program or service purposes when work is in progress.

(4) The Veterinary Medical Consultant establishes policies and procedures whereby only persons who have been advised of the potential hazard and meet any specific requirements (e.g., for immunization) may enter the animal rooms.

(5) The principal investigator must ensure that laboratory personnel demonstrate proficiency in standard and special microbiological practices before working with BSL-2 agents.

(6) Special care is taken to avoid skin contamination with infectious materials; gloves should be worn when handling infected animals and when contact with infectious materials is unavoidable.

(7) All wastes from the animal rooms are decontaminated by autoclaving before disposal. Infected animal carcasses are autoclaved and then incinerated after being transported from the animal room in leak proof container during collection, handling, processing, storage, or transport within the facility.

(8) Hypodermic needles and syringes are used only for the parenteral injection or aspiration of fluids from laboratory animals and diaphragm bottles. Only needle-locking syringes or disposable needle syringe units (i.e., the needle is integral to the syringe) are used for the injection or aspiration of infectious fluids. Needles should not be bent, sheared, replaced in the sheath or guard, or removed from the syringe following use. The needle and syringe should be promptly placed in a puncture-resistant container provided in each room and decontaminated by autoclaving, before discard or reuse.

(9) If floor drains are provided, the drain traps are always filled with water or a suitable disinfectant.

(10) When appropriate, considering the agents handled baseline serum samples from animal care and other at-risk personnel are collected and stored. Additional serum samples may be collected periodically, depending on the agents handled or the function of the facility.

(11) Animals and plants not associated with the work being performed must not be permitted in the laboratory.

(12) All procedures involving the manipulation of infectious materials that may generate an aerosol should be conducted within a BSC or other physical containment devices.

c. **CONTAINMENT EQUIPMENT:**

(1) Biological safety cabinets, other physical containment devices, and/or personal protective devices (e.g., respirators, face shields) are used whenever procedures with a high potential for creating infectious aerosols or splashes are conducted.

(a) These include necropsy of infected animals, harvesting of infected tissue or fluids from animals or eggs, inoculating animals intranasal, and manipulations of high concentrations or large volumes of infectious materials.

(b) High concentrations or large volumes of infectious agents are used. Such materials may be centrifuged in the open laboratory using sealed rotor heads or centrifuge safety cups.

(2) Protective laboratory coats, gowns, smocks, or uniforms designated for laboratory use must be worn while working with hazardous materials. Remove protective clothing before leaving for non-laboratory areas (e.g., cafeteria, library, administrative offices). Dispose of protective clothing appropriately, or deposit it for laundering by the institution. It is recommended that laboratory clothing not be taken home.

(3) Eye and face protection (goggles, mask, face shield or other splatter guard) is used for anticipated splashes or sprays of infectious or other hazardous materials when the microorganisms must be handled outside the BSC or containment device. Eye and face protection must be disposed of with other contaminated laboratory waste or decontaminated before reuse. Persons who wear contact lenses in laboratories should also wear eye protection.

(4) Gloves must be worn to protect hands from exposure to hazardous materials. Glove selection should be based on an appropriate risk assessment. Alternatives to latex gloves should be available. Gloves must not be worn outside the laboratory. In addition, BSL-2 laboratory workers should:

(a) Change gloves when contaminated, integrity has been compromised, or when otherwise necessary. Wear two pairs of gloves when appropriate.

(b) Remove gloves and wash hands when work with hazardous materials has been completed and before leaving the laboratory.

(c) Do not wash or reuse disposable gloves. Dispose of used gloves with other contaminated laboratory waste. Hand washing protocols must be rigorously followed.

(5) Eye, face and respiratory protection should be used in rooms containing infected animals as determined by the risk assessment

d. **ANIMAL FACILITIES:**

(1) The animal facility is designed and constructed to facilitate cleaning and housekeeping.

(2) A hand washing sink is available in the room where infected animals are based.

(3) The direction of airflow in the animal facility is inward and that exhaust air is discharged to the outside without being recirculation to other rooms.

(4) Autoclaves for decontaminating infectious laboratory waste are available in V203 and R206.

(5) Eye wash stations are located in the hallways.

3. **PROCEDURES (SPECIFIC ROOM PROCEDURES AND RESPONSIBILITIES)**: R204.1, R204.2, and R203 are biohazard containment animal rooms.

a. **RESPONSIBILITIES FOR PRINCIPAL INVESTIGATOR AND HIS TECHNICIANS:**

(1) Wear gowns, gloves, and surgical masks when working in infected rooms.

(2) Decontaminate sink, drain area, lab cart, and changing station after each use with Clidox-S J(1:5:1) and isopropyl alcohol.

(3) Provide principal investigator and technician name and phone number and organism (dosage and route of administration) required for cage cards.

(4) Check animals daily.

(5) Remove dead animals and terminate moribund animals and dispose of properly.

b. **RESPONSIBILITIES OF VMU PERSONNEL:**

(1) Check animals daily.

(2) Prepare and change cages, feed, bedding, and water bottles weekly for static cages and biweekly for ventilated cages using a Clidox-S glove dip between each cage.

(3) Clean floor, walls, and sink.

(4) Autoclave trash and dirty cages from Class II animals.

3. **REFERENCES:** HHS Publication No. (CDC) 93-8395, Fifth Edition, pages 44-49, 2007, http://www.cdc.gov/od/ohs/biosfty/bmbl5/BMBL_5th_Edition.pdf.

4. **RECISSION:** Research Service Memorandum No. 06-6, dated May 11, 2006.

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