



## Cornell University Cornell Center for Animal Resources and Education

### CARE710.02 Working with Wild Rodents

The intent of this standard operating procedure (SOP) is to describe precautions for anyone handling or exposed to wild rodents. This SOP is approved by the Cornell Institutional Animal Care and Use Committee (IACUC) and by the Cornell Center for Animal Resources and Education (CARE). Any exemption must be approved by the IACUC prior to its application.

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#### **1. Introduction**

- a. Wild rodents, or their parasites, can be vectors/reservoirs of pathogens that are zoonotic (i.e. can infect humans). Risk for infection is dependent on the species of rodent, the geographic location of the rodent, work practices and personal protective equipment when handling the rodent, prevalence of the disease, and the immunologic status of the persons handling the rodents.
- b. Healthy appearing animals can still be carriers of disease. Assume all animals are potential sources of zoonotic disease.
- c. Staff must be trained in proper use of the personal protective equipment (PPE) and procedures detailed in this document. Please contact CARE (607-253-4378) or Cornell's Environmental Health & Safety (EH&S) office (607-255-8200).

#### **2. Materials**

- Personal protective equipment as applicable (e.g. thick rubber or leather gloves, powered air purifying respirator, safety glasses).
- Soap and water for hand washing or an alcohol based hand sanitizer
- Disinfectant (e.g. 1:10 dilution of household bleach, 70% alcohol,) and method of application (e.g. sprayer or dunk tank).
- Animal transport isolation container, as applicable.

### 3. Procedures

#### A. Guidelines for field work that involves wild caught rodents.

##### i) General Requirements

- (1) Personnel who perform rodent trapping or handle rodents should familiarize themselves with the regional risks for zoonosis (see section 6 of this document, References). Zoonotic diseases of concern include, but are not limited to the following:
  - Hantavirus
  - Tularemia (*Francisella tularensis*)
  - Plague (*Yersinia pestes*)
  - Leptospirosis
  - Salmonellosis
  - Lymphocytic choriomeningitis virus (LCMV)
  - Rabies
- (2) All staff must be enrolled in an Occupational Health Program.
- (3) Personnel who will use respirators must obtain medical clearance, and be enrolled in respiratory protection program at EH&S. The use of respiratory protection should be based on a risk assessment. Please contact EH&S and CARE to assist in this assessment.

##### ii) General precautions for *all* work with wild rodents.

- (1) Have a bite disinfection kit readily available consisting of disinfectant, brush, soap, and water. Report any injuries by filing an injury report with Cornell: <https://cfp-isca.cit.cornell.edu/accinj/>.
- (2) Wear the appropriate personal protective equipment when performing tasks that increase the risk of exposure. For more information, see Appendix- Specific Zoonosis Information.
- (3) Practice good personal hygiene.
  - (a) Avoid contact of mucous membranes with contaminated hands or materials.
  - (b) Wash hands thoroughly with soap and water as soon as feasible (substitute alcohol-based disinfectants if water is unavailable- if hands are soiled, use “baby wipes” or similar material to remove dirt before using a sanitizer).
- (4) Wear disposable protective clothing, coveralls, or apron when handling captured rodents, potentially contaminated traps, or disturbing nests or burrows. Slowly and carefully turn clothing inside out. Contain soiled clothing appropriately, such as in plastic bags, when tasks are completed.
- (5) Wear sturdy rubber or leather gloves when handling rodents or cleaning out traps to prevent contact with potentially contaminated urine and feces, and to prevent tearing on sharp edges of traps or bites from animals.
- (6) Spray all potentially contaminated materials such as feces, urine, bedding with a 10% solution of bleach or other suitable disinfectant (e.g., phenolics,). Avoid stirring up dry, dusty materials, thus minimizing the generation of potentially hazardous aerosol particles.

- iii) Disinfect traps by submerging in 10% bleach or other suitable disinfectant for 15 to 30 minutes. Rinse with water and let dry in the sun. If traps cannot be disinfected in the field, place in plastic bag before transporting.
- B. Transporting live animals back to campus.
- i) Arrangements must be approved by the director of CARE and the Biosafety Officer when any live, wild rodents are to be brought back to the campus.
  - ii) Avoid contamination of the passenger compartment of vehicles. Refer to [CARE SOP 541](#), Transportation of Biomedical Animals for proper transport and vehicle decontamination.
  - iii) Transfer live animals to microisolator cages, or transport animals in their traps in an air-flow restrictive, secondary container (e.g., loosely tied plastic bag). Use appropriate respiratory and personal protective equipment when performing these tasks.

#### 4. Safety

- Take preventative measures for abatement of ticks and biting flies.
- See CARE SOP 707, Animal Related Injury
- See CARE SOP 711, Sharps Precautions
- See CARE SOP 712, Waste Anesthetic Gas Scavenging Systems
- See CARE SOP 713, Hygiene-Hand Washing.
- See CARE SOP 715, Personal Protective Equipment (PPE).

#### 5. References

- Wildlife as Source of Zoonotic Infections:  
<http://www.cdc.gov/ncidod/EID/vol10no12/04-0707.htm>
- Hanta virus:  
<http://www.cdc.gov/ncidod/diseases/hanta/hps/noframes/printgenlsection.htm>
- Hantavirus pulmonary syndrome, risk reduction-CDC:  
<http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5109a1.htm>
- Tularemia: <http://www.avma.org/reference/zoonosis/zntularemia.asp>
- Plague:  
<http://www.mayoclinic.com/health/plague/DS00493/DSECTION=symptoms>
- LCMV: <http://www.cdc.gov/ncidod/dvrd/spb/mnpages/dispages/lcmv/qa.htm>.
- CARE SOP 541, Transportation of Biomedical Animals:  
<http://www.research.cornell.edu/care/documents/SOPs/CARE541.pdf>
- CARE SOP 707, Animal Related Injury:  
<http://www.research.cornell.edu/care/documents/SOPs/CARE707.pdf>
- See CARE SOP 711, Sharps Precautions:  
<http://www.research.cornell.edu/care/documents/SOPs/CARE711.pdf>
- CARE SOP 712, Waste Anesthetic Gas Scavenging Systems:  
<http://www.research.cornell.edu/care/documents/SOPs/CARE712.pdf>
- CARE SOP 713, Hygiene-Hand Washing:  
<http://www.research.cornell.edu/care/documents/SOPs/CARE713.pdf>

- CARE SOP 715, Personal Protective Equipment:  
<http://www.research.cornell.edu/care/documents/SOPs/CARE715.pdf>

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## 6. Appendix- Specific Zoonosis Information

### A. Hantavirus

- i) Work upwind of the trap or nest as much as possible. Define an exclusion zone in which workers without personal protective equipment are not permitted. Perform all procedures so as to minimize creation of aerosols and disturbance of dust.
- ii) Consult Gannett Health Services regarding regional and personal risk for assessment of appropriate PPE. Based on this assessment, use of respirators may be advised to reduce or eliminate exposure to aerosol particles from rodent excreta and procedures that may generate airborne contaminants.
- iii) Personnel who develop a fever, respiratory illness, lethargy other signs of illness within 45 days of potential exposure should seek medical care immediately. Inform the physician about the potential occupational risk of hantavirus (or applicable agents listed below) infection.

### B. Tularemia

- i) See Hantavirus above in section 7,A,i-ii.
- ii) In addition to respiratory transmission, ticks are potential carriers. Euthanasia of animals carrying Tularemia infected ticks will result in ticks leaving the carcass.
  - (1) Place the dead animal in a clear plastic bag immediately following euthanasia. Ticks will be noted leaving the carcass within 30-60 minutes following euthanasia.
  - (2) If ticks are noted, introduce of a flea specific insecticide (e.g. VET-KEM Ovitrol<sup>®</sup>) into the bag. Do not open the bag until the fleas are dead.
- iii) Personnel who develop any skin ulcers &/or glandular sensitivity/swelling within 14 days of potential exposure should seek prompt medical care and inform the physician about possible exposure to tularemia.

### C. Plague

- i) See Hantavirus above in section 7,A,i-ii.
- ii) Euthanasia of animals carrying plague infected fleas will result in fleas leaving the carcass.
  - (1) Place the dead animal in a clear plastic bag immediately following euthanasia. Fleas will be noted leaving the carcass within 30-60 minutes following euthanasia.
  - (2) If fleas are noted, introduce of a flea specific insecticide (e.g. VET-KEM Ovitrol<sup>®</sup>) into the bag. Do not open the bag until the fleas are dead.
- iii) Symptoms from plague can be highly variable, for more details, consult the Mayo Clinic reference cited in section 5, References, of this document. Personnel who develop symptoms within 7 days of potential exposure should seek prompt medical care and inform the physician of possible exposure to plague bacteria.

### D. LCMV

- i) See Hantavirus above in section 7,A,i-ii.

- ii) Symptoms from lymphocytic choriomeningitis virus (LCMV) can be highly variable, for more details, consult the CDC reference cited in section 5, References, of this document. Personnel who develop symptoms within 21 days of potential exposure should seek prompt medical care and inform the physician of possible exposure to LCMV.
- E. Leptospirosis
- i) See Hantavirus above in section 7,A,i-ii.
  - ii) Symptoms for leptospirosis include high fever, severe headache, chills, muscle aches, and vomiting, and may include jaundice (yellow skin and eyes), red eyes, abdominal pain, diarrhea, or a rash. Personnel who develop symptoms within 28 days of potential exposure should seek prompt medical care and inform the physician of possible exposure to leptospirosis bacteria.