

NECROPSY BIOSAFETY

(For assistance, please contact EHS at (402) 472-4925, or visit our web site at <http://ehs.unl.edu/>)

This SOP provides general biosafety considerations for necropsy areas, with the intent of minimizing the potential for zoonotic infection. It is not intended as a substitute for facility-specific procedures. However, facility specific procedures must be at least as stringent as those contained in this procedure.

Containment Considerations

- At a minimum, necropsy must be conducted in accordance with BSL-2 containment principles and practices. In addition, prior to conducting any necropsy procedures, the attending pathologist must review the animal's history to determine if BSL-2+ practices are recommended based on the likelihood of zoonotic agents (i.e., Q fever, Rabies, Psittacosis, West Nile Virus, SE, etc).
- Necropsy of small animals should be conducted within a biosafety cabinet.
- If an animal is too large to process in a biosafety cabinet, the carcass should be made thoroughly wet with disinfectant prior to necropsy to reduce the risk of airborne infectious particles. If disinfecting to this degree will compromise testing, the carcass should be made wet with water.
- Unessential personnel and others should not be allowed in the necropsy area.

Personal Protective Equipment Considerations

- A rear-closing gown is recommended for any necropsy conducted outside of a biosafety cabinet. A lab coat is acceptable when working inside of a biosafety cabinet. The gown must be of impervious construction or supplemented with an impervious apron when working with animals of a size that body fluids are present in a quantity that could lead to soak-through of the gown.
- Impervious gloves must be worn at all times. Gloves must be changed when damaged or compromised. Consider also using cut-resistant gloves when using sharp instruments.
- When conducting a necropsy within a biosafety cabinet, safety glasses with side shields are acceptable eye protection. When working outside of a biosafety cabinet, safety goggles or a face shield must be worn. If there is a splash hazard, both safety goggles and face shield in combination is appropriate.
- Impervious disposable shoe covers or rubber boots must be worn when working outside of a biosafety cabinet.
- All PPE must be removed before entering clean areas. Disposable PPE must not be washed or otherwise disinfected for the purpose of re-use.
- When conducting procedures that could generate aerosols and work is conducted outside of a biosafety cabinet, respiratory protection is needed. However, use of a

respirator must be approved by EHS. No one is allowed to use respiratory protection equipment unless they are enrolled in the UNL Respiratory Protection Program (RPP). Therefore, persons who perform necropsy procedures are encouraged to contact EHS to enroll in the UNL RPP upon initial assignment to necropsy tasks.

Procedural Considerations

- Similar to the approach taken with bloodborne pathogens, all necropsies should be approached with “universal precautions.” That is, all specimens should be handled and treated as though they were known to present risk of zoonotic disease.
- No eating, drinking, grooming, or other activities that are a means of exposure are permitted.
- To limit the risk of unexpected or unknown exposure, all workers handling unpreserved tissues must be offered vaccination for rabies. Departments must pay expenses for vaccinations. Workers can decline vaccinations after being apprised of the risk. Records of declination shall be maintained. Maintenance of vaccination and policy shall be in accordance with current CDC guidelines and updated as guidelines change. Employees shall also be informed that risk of exposure is greater if their immune systems are compromised or suppressed
- Tools should be used to the extent feasible to manipulate tissues to avoid cut hazards (i.e., forceps).
- Hand tools are preferred to power tools. Use of power tools should be reserved only when there are no other alternatives. Use of power tools must be treated as an aerosol-generating activity.
- Transport unfixed tissues in leak-proof containers.

Disinfection Considerations

- Necropsy areas and tools must be disinfected at the end of each work shift. The disinfectant must be approved for such use and used in accordance with label directions, including but not limited to recommended contact time.
- Remove solid chunks prior to applying disinfectant. Remove in a manner that avoids production of aerosols.
- Avoid high pressure wash until after the disinfectant has remained in contact with surfaces for the prescribed contact time.
- Carcasses free from known or suspected zoonoses may be sent for rendering. Other tissues are to be incinerated or managed through a biological waste contractor.
- Reusable PPE must not be removed from the necropsy area unless sealed in a sturdy bag. PPE known to be used with animals harboring a zoonotic agent should be autoclaved, if feasible; chemically disinfected if autoclaving is not feasible. When zoonoses are not likely, standard washing in detergent and warm or hot water is adequate. Laundering should not be conducted at home or at a Laundromat.
- Always wash hands thoroughly with soap and water after removing PPE and before exiting the necropsy area.

Suspected Exposures and Occupational Injuries/Illnesses

Seek immediate medical attention for any cut or wound, as well as mucus membrane exposure incurred during the necropsy procedure. Procedures are described in the EHS SOP, ***On-the-Job Injuries***.

Select Agent Considerations

Identification of a regulated agent or toxin from a clinical specimen must be reported to the appropriate federal agency (APHIS or CDC) within 7 days after identification by contacting EHS. However, identification of any of the following agents requires immediate notification to EHS: Ebola virus, Lassa fever virus, South American haemorrhagic fever viruses (Junin, Machupo, Sabia, Flexan, Guanarito), Variola major virus (Smallpox), Variola minor virus (Alastrim), Yersinia pestis, Nipah virus, Rift Valley fever virus, Venezuelan Equine encephalitis virus, Bacillus anthracis, Brucella melitensis, Francisella tularensis, and Botulinum neurotoxins.. See EHS SOP, ***Select Agents and Toxins – Clinical and/or Diagnostic Laboratory Activities***, for additional information.