

## **Diagnostic Necropsy Guidelines**

***Office of the Attending Veterinarian  
University of Kentucky***

**PURPOSE:** This document establishes responsibilities and provides guidance as to the types of cases where diagnostic necropsy should be considered as a valuable component of the veterinary medical care program. This document is not applicable to cases submitted as a component of a research protocol or as part of the overall animal health surveillance program.

**BACKGROUND:** Diagnostic necropsies are an important component of the Veterinary Medical Care Program of the University of Kentucky. Diagnostic necropsies may be justified and advantageous for a number of purposes including determination of the likely cause of death, evaluation of the pathogenesis resulting in the clinical disease and/or death, confirmation and documentation of clinical findings, confirmation and documentation of potential regulatory findings, surveillance for subclinical diseases or clinical diseases not recognized by the clinical staff, and the documentation of findings to permit retrospective epidemiologic evaluations<sup>1,2</sup>.

Diagnostic necropsies potentially provide information that is not readily available in the clinical evaluation of the living animal and assist in improving the overall veterinary care program. Diagnostic necropsies may include gross dissections, microbiologic cultures, clinical pathology evaluations, parasite evaluations, and histopathology depending on the purpose for the necropsy evaluation and the condition of the submitted carcass. Diagnostic necropsies may be performed by the clinical veterinarians in the field or submitted to a veterinary pathology service. For the necropsy evaluation to optimally support the intended purpose, the individual performing the necropsy should be familiar with the objective of the necropsy evaluation and have a sufficient clinical and research history to focus the necropsy evaluation and collect the appropriate specimens.

**APPLICATION:** The guidance in this document is applicable to clinical veterinarians, unit faculty advisors, and herd managers in determining the need for diagnostic necropsy services.

**Determination of Need for Diagnostic Necropsy:** The determination of which cases warrant necropsy evaluation is necessarily a decision that must be based on individual circumstances and the professional judgment and discretion of the clinical veterinarian in consultation with the principal investigator. Necropsies may vary from field necropsy evaluations by the clinical veterinarian with or without sample submissions to the pathology laboratory to whole carcass submissions for complete necropsy evaluations. In general, necropsy submission to the veterinary pathology service is encouraged following the unanticipated death of animals that have individual medical records (nonhuman primates, dogs, cats, rabbits, swine, sheep, etc.). In cases where individual

animal records are not maintained (rodents, amphibians, avians, swine, fish, etc.) circumstances which may warrant the performance of a necropsy include:

- Unanticipated and unexplained immediate post-surgical death
- Post-operative death at 3-6 days, suggestive of unanticipated post-surgical infections
- Increased morbidity or mortality in a production colony
- An unexplained and unanticipated death or a previously healthy animal
- An unexplained increase in morbidity or mortality of research animals on a specific protocol or related set of protocols
- Suspicion that an undiagnosed infectious disease is present at the facility (with or without potential zoonotic implications).
- Need to document or confirm clinical diagnosis for either teaching purposes or for epidemiologic records

Any indication that a violation of the approved animal use protocol may have occurred and contributed to the animal's death must result in the submission of the case to the veterinary pathology service for diagnostic necropsy.

Responsibilities: The basic information required for all necropsy cases submitted to the pathology services includes a clinical history that is sufficient to permit the pathologist to focus the necropsy evaluation to address the goals of the necropsy:

- The investigator's name, the protocol number, the species of animal, and the contact information for the investigator and the submitting individual (phone number, email, departmental address if known)
- The signalment of the animal (age, sex, species, breed/strain), the ID of the animal (bar code, death tag #, tattoo, ear tag #, leg band #, microchip # and location)
- The location (building/room, barn, field description, unit, etc.) at which the animal was housed and the number of carcasses submitted if greater than one
- The euthanasia method, if applicable
- Relevant experimental procedures, drugs, special diets, transgenes/mutations, etc., if known, should be indicated.
- Relevant clinical medical history and presumptive clinical diagnosis should be described including specific clinical questions leading to the submission of the case for diagnostic necropsy
- Specific requests, including requested microbiologic cultures, toxicology, specific tissue evaluations, and photographic documentation for training or regulatory purposes should be indicated



It is the submitting individual's responsibility to ensure that the pertinent clinical history is submitted with the necropsy request or is conveyed to the individual conducting the necropsy in a timely manner.

**NECROPSY SUBMISSION PROCEDURES:** Diagnostic necropsies should be conducted within an appropriate interval after the death or the carcass should be stored at an appropriate refrigerated temperature, if available, to minimize further autolysis. Freezing should be avoided as this introduces artifact which may make the carcass and tissues unsuitable for evaluation. The collection of samples (tissue, fluids, etc.) from cases prior to submission for diagnostic necropsy may negatively impact the diagnostic value of the necropsy. Principal investigators and clinical veterinarians should carefully evaluate the need and value of the samples to be collected against the potential negative impact on the pathology results. Consultation with the pathologist prior to the collection of the samples may be of value in determining potential impact on the diagnostic necropsy.

Animal carcasses may be submitted for diagnostic necropsy at:

University of Kentucky Veterinary Diagnostic Laboratory (UKVDL)  
1490 Bull Lea Road  
PO Box 14125  
Lexington, KY 40512-4125  
Phone: (859) 257-8283  
Fax: (859) 255-1624  
<http://vdl.uky.edu/Home.aspx>

Murray State University Breathitt Veterinary Center  
715 North Drive  
PO Box 2000  
Hopkinsville, KY 42241-2000  
Phone: (270) 886-3959  
Fax: (270) 886-4295  
<https://breathitt.murraystate.edu/>

The respective diagnostic centers should be contacted directly for hours of operation, services available, sample submission requirements, appropriate forms for submission, fees, etc.

NECROPSY REPORTS: Preliminary, interim, and final pathology reports are components of the animal's medical record and shall be transmitted to the principal investigator, the clinical veterinarian, the Attending Veterinarian of the University of Kentucky, and the submitting individual (if not previously listed). In the case of epizootic diseases and unexpected findings potentially having an impact upon other animals and requiring timely clinical intervention, the information shall be communicated to the clinical veterinarian and the Attending Veterinarian as soon as practical, either directly, via telephone, or via e-mail.

All final necropsy reports for species regulated under the Animal Welfare Act Regulations (9 CFR) must be signed and dated by the veterinarian preparing the report<sup>3</sup>. The final necropsy report will be transmitted to the submitter and forwarded to the individual coordinating medical records for appropriate archiving, which in the case of regulated species shall be the animal's medical record<sup>3,4</sup>. Copies of the final report will be transmitted to the submitting clinical veterinarian, the principal investigator, and the Attending Veterinarian.

REFERENCES:

1. Animal Welfare Regulations 9 CFR Chapter 1, Subchapter A, §2.33 and §2.40.
2. Guide for the Care and Use of Laboratory Animals, 8<sup>th</sup> edition, National Research Council, 2011.
3. Animal Care Resource Guide - Policy #4: Necropsy Requirements, Issue Date March 25, 2011.
4. Field, K., M. Bailey, L.L. Foresman, R. L. Harris, S. L. Motzel, R. A. Rockar, G. Ruble, and M. A. Suckow, (2007) "Medical Records for Animals Used in Research, Teaching, and Testing: Public Statement from the American College of Laboratory Animal Medicine" ILAR Journal 48(1):37-41.

Approved by:



Date:

