AAEP Guidelines for the Postmortem Examination of Racehorses

General Guidelines

The AAEP recommends that all racehorses that die or are euthanized at a racetrack or training facility undergo a complete postmortem examination (i.e., necropsy/autopsy[1]) by, or under the supervision of, a board-certified veterinary pathologist at an accredited veterinary diagnostic laboratory. Field necropsy is not appropriate for exercise-related fatalities, cases of sudden death or cases resulting in human injury. Postmortem examinations are mandatory for Horseracing Integrity and Safety Authority (HISA)-covered racehorses. A general checklist is provided at the end of this document based on the following recommendations.

The AAEP encourages collaboration among diagnostic laboratory partners to elevate and harmonize exam protocols and information management that promote standardization of reports and facilitate intermural research into the etiology of catastrophic musculoskeletal injuries and other conditions resulting in the death of racehorses, including Exercise-Associated Sudden Death (EASD). The following are useful resources for racehorse postmortem examination that can also be applied to other equine disciplines:

- Special Issue on Racehorse Pathology in the *Journal of Veterinary Diagnostic Investigation* (2017, 29(4))
- Guidelines for Musculoskeletal Necropsy of Racehorses
- Bone Diagrams for Documenting Fracture Configuration
- Equine Forelimb and Hindlimb Bone Anatomy Posters
- Postmortem Examination of a Racehorse Forelimb Fetlock Breakdown
- Racehorse Catastrophic Injury References
- Sudden Death in Racehorses: Postmortem Examination Protocol

Regulatory Testing and Samples

Ante- or immediately postmortem blood samples (and urine, when available) should be collected, maintained under chain of custody protocols, and submitted to the official racing laboratory. The laboratory should be notified of any medications administered prior to sample collection (inclusive of euthanasia solutions if collection is performed postmortem.) If indicated, additional fluids or tissue samples (e.g., synovial fluid, synovium, liver, kidney, hair, etc.) can be collected during the postmortem procedure by diagnostic laboratory personnel.

To ensure proper collection/storage and chain of custody for transfer of such samples to an appropriate testing facility, *it is essential arrangements pertaining to sample collection or other requests be made with the diagnostic laboratory prior to submission* (see recommendations below). Regulatory veterinarians in each state should be familiar with legal chain of custody

requirements so that a case is not withdrawn as a result of a procedural deficiency. Regulatory veterinarians should also follow Horseracing Integrity and Welfare Unit (HIWU) sample collection requirements for HISA-covered racehorses.

Transportation and Biosecurity

For practitioners submitting client horses outside of the regulatory process, best practice is to contact the diagnostic laboratory prior to submission to ensure any necessary paperwork and relevant clinical information is conveyed and to confirm/coordinate transportation of the body for arrival at the diagnostic laboratory during hours of operation. If a horse is insured, the insurer should also be contacted and diagnostic lab notified as such. Body disposition preference after completion of the postmortem examination (e.g., cremation requests) should also be communicated to the diagnostic laboratory at the time of body delivery.

To optimize efficiency in cases requiring postmortem evaluation, options for transportation, interim storage for pending transport of the body, and preservation of the body during transportation should be identified prior to need and managed to minimize tissue degradation and the development of postmortem artifacts. Ideally, the body is maintained in a cool place (optimally, refrigerated facility) that minimizes opportunity for predation or direct sun exposure. Care should also be taken to employ appropriate biosecurity/infection control practices, and information pertaining to equine infectious and/or zoonotic disease suspects (e.g., EHV, Rabies, etc.) should be conveyed to the diagnostic laboratory and appropriate regulatory officials.

Communication

As indicated above, submitters of horses to diagnostic laboratories should contact the veterinary diagnostic laboratory personnel to convey pertinent clinical and historical information prior to necropsy examination. Providing pathologists a succinct, organized summary of relevant information (e.g., exercise/training history, as well as relevant medical/surgical/treatment, historical lameness, and imaging findings) enhances their ability to perform informed, targeted examinations to help discern and document pre-existing versus emergent versus catastrophic lesions involving orthopedic, cardiovascular or other organ systems pertaining to the case submitted. For example, a pathologist's documentation of orthopedic lesions existing within other limbs in addition to the limb that underwent catastrophic failure can provide critical data that informs mortality reviews, epidemiological investigations, and future recommendations toward early injury detection and prevention.

Regular communication and interaction between the on-site regulatory veterinarian(s), practicing racetrack veterinarians, and the pathology staff at the diagnostic laboratory will optimize useful outcomes. Diagnostic pathologists who may not routinely perform racehorse postmortem evaluations can be directed to the resources listed above and to reference laboratories recommended for racehorse pathology consultation that include, but are not limited, to Cornell University/AHDC, University of California/CAHFS, University of Kentucky VDL, and University of Pennsylvania-New Bolton Center/PADLS).

Necropsy findings for Thoroughbreds, Quarter Horses, and Arabians should be entered into The Jockey Club's Equine Injury Database. Necropsy findings for HISA-covered racehorses should be submitted to HISA. The AAEP supports the development of a similar database for harness racing.

Fatalities Review

A best practice inquest protocol (i.e., mortality review) is recommended with connections of the horse, and required for HISA-covered racehorses, that incorporates antemortem information (e.g., interviews with personnel relevant to the horse and/or the incident, exercise history, race replay video, medical history) and postmortem findings. A framework for implementing a mortality review protocol can be found in the Mid-Atlantic Strategic Plan to Reduce Equine Fatalities.

[1] *Current preferred scientific terminology for postmortem examination is "autopsy" instead of "necropsy", although pathology labs will understand and accept either term. Maxie G. Autopsy/necropsy, diagnosis/detection . . . what's in a word? J Vet Diagn Invest 2016;28:87. http://journals.sagepub.com/doi/pdf/10.1177/1040638716636859*

AAEP Racehorse Postmortem Evaluation – Quick Checklist

☐ Perform full necropsy at accredited diagnostic lab (mandatory for HISA-covered cases)
☐ Collect samples (e.g., blood/urine) with chain of custody (see HIWU); record all meds administered
☐ Keep body cool, protected, and uncontaminated while stored and during transport (if possible)
☐ Notify and coordinate with diagnostic lab *prior to* transport
  ☐ Communicate horse ID/signalment; pertinent clinical history; insurance and cremation status
  ☐ Communicate concerns for infectious/zoonotic disease; maintain good biosecurity
  ☐ Recommend racehorse pathology resources (if applicable)
☐ Submit required reports (HISA/The Jockey Club's Equine Injury Database)
☐ Implement fatalities review

Revised by AAEP Racing Committee in 2026.