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Standard for Clinical Veterinary Forensic Examination

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Standard for Clinical Veterinary Forensic Examination

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Foreword

The American Academy of Forensic Sciences established the Academy Standards Board (ASB) in 2015 with a vision of safeguarding Justice, Integrity and Fairness through Consensus Based American National Standards. To that end, the ASB develops consensus based forensic standards within a framework accredited by the American National Standards Institute (ANSI), and provides training to support those standards. ASB values integrity, scientific rigor, openness, due process, collaboration, excellence, diversity and inclusion. ASB is dedicated to developing and making freely accessible the highest quality documentary forensic science consensus Standards, Guidelines, Best Practices, and Technical Reports in a wide range of forensic science disciplines as a service to forensic practitioners and the legal system.

In consultation with the Crime Scene Investigation Consensus Body, this document was revised, prepared, and finalized as a standard by the Wildlife Forensics Consensus Body of the AAFS Standards Board.

Questions, comments, and suggestions for the improvement of this document can be sent to AAFS-ASB Secretariat, asb@aafs.org or 401 N 21st Street, Colorado Springs, CO 80904.

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Standard for Clinical Veterinary Forensic Examination

1 Scope

This document provides minimum requirements for the forensic veterinary examination of a live animal and the collection of physical evidence. This includes the physical examination, diagnostic testing, documentation, and evidence handling specific to the examination of live animals encountered in potential civil or criminal forensic cases involving animals.

2 Normative References

The following normative reference is indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

American Veterinary Medical Association Euthanasia Guidelines^a

Chain of Custody, National Library of Medicine—National Center for Biotechnology Information^b

3 Terms and Definitions

For purposes of this document, the following definitions apply.

3.1

alternate light source

ALS

Equipment used to produce light at various wavelengths to enhance or visualize potential items of evidence.

NOTE A monochromatic light source can be used in examination of an animal's body to enhance visualization, identification, documentation, and collection of bodily fluids and fibers as potential evidence.

3.2

animal

A creature or living being, other than human. The legal definition of animal may be further defined by local law.

3.3

body condition score

A quantitative number, based on a species-specific published scale, used to estimate body composition in the form of fat and muscle.

^a Available from: www.avma.org/resources-tools/avma-policies/avma-guidelines-euthanasia-animals

^b Available from: www.ncbi.nlm.nih.gov/books/NBK551677/

3.4 chain of custody

Chronological record of the handling and storage of an item from its point of collection to its final return or disposal.

Note Items may include the animals themselves and evidence collected from animals and their environments.

3.5 clinical veterinary forensic examination

Medical evaluation by a veterinarian of a live animal for medicolegal purposes.

NOTE The examination may include, but is not limited to, the assessment of behavior, body condition score and organ systems to identify and document an animal's overall condition at a point in time.

3.6 diagnostic imaging

Radiographs, Computed Tomography (CT), Magnetic Resonance Imaging (MRI), ultrasound, and other diagnostic modalities used to assess and document condition, injury, or disease processes.

3.7 exigent circumstances

Circumstances that would cause a reasonable person to believe that relevant prompt action was necessary to prevent physical harm to persons or animals, the destruction of relevant evidence or some other consequence improperly frustrating legitimate law enforcement efforts.

3.8 forensic

Related to methods, techniques and processes used to establish conclusions and/or opinions, facts, and findings which can be used for legal proceedings.

3.9 forensic photography (still and video)

The act of producing an accurate depiction of a scene or physical evidence using photography for the purpose of an investigative or legal proceedings.

4 Requirements

4.1 Personnel

A licensed veterinarian in good standing in the state of their licensure shall conduct the clinical veterinary forensic examination. The examining veterinarian should have clinical experience with the species being examined. The thorough medicolegal investigation may be conducted through a collaboration of veterinarians familiar with the affected species and a veterinarian with forensic experience and training. "When aspects of a case fall outside the veterinarian's normal practice area, they should consult or refer to other experts. For example, a boarded veterinary pathologist, radiologist, or toxicologist may be able to provide additional diagnostic insight, or species-specific expertise may be necessary to provide exotic animal care."^[4]

An assistant should also be present at the time of examination to assist with animal handling, collecting, and documenting evidence. The handling and packaging of evidence should be

performed by, or under the direction of, persons with training and/or experience in these processes.

4.2 Clinical Veterinary Forensic Examination

4.2.1 General

Every effort shall be made to preserve and document forensic evidence; however, the evidentiary need shall be balanced with the urgent veterinary care and welfare needs of an animal. Minimal standards of care, as established by applicable laws and regulations, shall be adhered to.

4.2.2 Context for Examination

The veterinarian shall request and review all available information relevant to the examination, including but not limited to investigative and witness reports, scene photography and sketches, allegations or theories, so that the examination and opinion formation are made with context to known or possible explanations for the animal(s) condition(s).

4.2.3 Legal Considerations

The veterinarian's legal right to perform a medicolegal examination, beyond the duty to alleviate or prevent suffering and preserve life, should be established prior to the examination of the animal. In order to examine the animal, there should be owner consent, voluntary relinquishment of ownership, or a court-order terminating ownership rights or authorizing a search that includes the examination of the animal or animals.

An animal is also evidence in the criminal case. Therefore, a veterinarian should discuss with law enforcement and/or the prosecutor what initial and ongoing care (including the potential for emergent care), examinations, and diagnostics (including imaging) are permissible. These discussions should occur prior to the veterinarian's examination of the animal unless exigent circumstances exist or emergency treatment is necessary. However, an examination and diagnostics authorized by the owner or their designee may occur prior to contacting law enforcement.

Animals whose ownership are unknown require the same considerations and consultation with the appropriate authorities when crimes are suspected.

Veterinarians shall always conduct themselves with the expectation that their work may be used in legal proceedings. As such, they should ensure that they are meeting the minimum standards of care and that all examinations, testing, treatment, and care are within the scope of owner consent, or authorized by law enforcement.

4.2.4 Traceable Identification

The veterinarian or staff member should scan for microchip with a universal scanner if available, and shall document any microchip numbers. Tags, bands, tattoos, and/or other form(s) of potentially traceable identification shall be documented. The procedures used to locate any identifiers and the results of such procedures, or the absence of any identifiers shall be documented.

4.2.5 Animal Identification

Each animal shall be assigned a unique identification and the identifier(s) shall be used throughout the record keeping and chain of custody process. This identifier shall be affixed to the animal in the form of a tag on a collar or other similar method of maintaining the unique identifier on the animal, as appropriate for the species and the age. If the animal has a readable microchip or other suitable identification, that may be used as the unique identification.

The entity presenting the animal for examination shall be documented along with any relevant information available on the owner.

4.2.6 Animal Signalment and Description

The documentation of the identification of the animal shall include the following, if applicable:

- a) species;
- b) sex (intact, altered, or undetermined);
- c) breed or breed type resemblance;
- d) age [known, reported (if reported, indicate reporting individual or agency), or estimated (if estimated, describe how age was determined)];
- e) fur length and type (smooth or rough);
- f) color and unique markings;
- g) any physical alterations noted (e.g., cropped ears, docked tail).

4.2.7 Body Condition

The veterinarian shall evaluate and document body condition. A body condition score (BCS) using a published and/or referenced body condition scoring system should be used and shall be documented, if available. If a BCS system is unavailable, the body condition should be described using physical examination findings or other appropriate method.

4.2.8 Abnormal Odors, Foreign Objects, and Substances

The veterinarian shall inspect for and describe abnormal odors, foreign objects, and substances on all external areas and integumentary covering (where applicable and safe to perform the exam). An alternate light source (ALS) should be used if available and indicated. The exam should include the following:

- a) evaluate for foreign material and collect as appropriate;
- b) evaluate oral cavity (teeth and mucosal surfaces) and collect as appropriate; swabbing is indicated when there is foreign material not readily identifiable found in the oral cavity or if a control DNA swab is needed;

- c) evaluate feet (including toenails/claws/hooves) for foreign material and collect as appropriate; swabbing is indicated when there is foreign material not readily identifiable found on the feet;
- d) evaluate other orifices and collect evidence dependent on findings;
- e) document the presence of foreign objects such as collar(s), chain(s), trace material(s), or other object(s), prior to and after removal; indicate any relationship with pathology and include any appropriate physical characteristics of the foreign body.

4.2.9 Physical Examination

4.2.9.1 Documentation

The veterinarian shall document the physical examination in the record. The physical examination record may include items from 4.2.9.2 through 4.2.9.9.

4.2.9.2 Overall Assessment

The record should include the following information when the animal behavior and size allow:

- a) weight in imperial or metric units, or by species/breed specific tape system;
- b) measurements of animal: height head to floor, withers to floor, nose to base of tail, nose to end of tail, when relevant to the investigation;
- c) pulse rate and quality;
- d) respiration rate, effort, and sounds;
- e) temperature (consider method if sexual abuse suspected);
- f) mucous membrane color and capillary refill time;
- g) estimated hydration status (supported by documented physical findings during evaluation);
- h) circulatory system status.

4.2.9.3 Systems Assessment

The record should include physical exam findings of the following body systems when the species, animal behavior, and/or size allow:

- a) cardiovascular,
- b) respiratory,
- c) gastrointestinal,
- d) oral cavity (consider use of species-specific numbering system and dentition chart),
- e) urogenital,

- f) neurological,
- g) musculoskeletal,
- h) integumentary (including feet),
- i) otic and ophthalmic (including fundic) examination,
- j) peripheral lymph nodes.

4.2.9.4 General Description of Injuries

The veterinarian shall:

- a) describe injury by type (e.g., abrasion, laceration, contusion, incised wound, burn);
- b) describe injury by location;
- c) describe injury by size (e.g., length, width and depth as appropriate);
- d) describe injury by shape;
- e) describe the pattern of the injury, if applicable (e.g., texture description such as stippled, or shape such as tram-tracks);
- f) describe other features of the injury to include any items present to explain the pathogenesis (e.g., embedded collar, strangulating hair mats, or fecal dams).

4.2.9.5 Firearm and Projectile Injuries

The veterinarian shall:

- a) describe injuries;
- b) measure injury size;
- c) locate cutaneous injuries by measuring from two fixed anatomic reference points, when possible;
- d) descriptively locate injuries in an anatomic region;
- e) describe the presence of soot, burns, and stippling of the hair or skin;
- f) describe the presence of abrasion ring, searing, muzzle imprint, or lacerations;
- g) the veterinarian or designate shall photograph recovered projectiles with a scale.

4.2.9.6 Sharp Force Injuries

The veterinarian shall:

- a) describe the injury;
- b) locate cutaneous injuries by measuring from two fixed anatomic reference points, when possible;
- c) measure injury size;
- d) estimate the depth of the injury if possible;
- e) estimate the direction of stab wound tracks if possible.

4.2.9.7 Burn Injuries

The veterinarian shall:

- a) describe the appearance of the burn including odor, color, and texture;
- b) locate cutaneous injuries by measuring from two fixed anatomic reference points, when possible;
- c) describe the distribution and extent of the burn;
- d) if accelerants are suspected, consult local investigating agency or laboratory regarding appropriate collection methods.

4.2.9.8 Patterned Injuries

The veterinarian shall:

- a) measure the injury size;
- b) describe the location of the injury;
- c) describe the injury pattern;
- d) document if samples for DNA analysis were collected from bite marks and the location of the bite marks sampled.

4.2.9.9 Suspected Sexual Abuse

The veterinarian shall:

- a) utilize an alternate light source to search for foreign fibers and/or biological stains, and preserve discovered evidence;
- b) examine the animal for signs of physical restraint and embedded ligatures;

- c) collect swabs and/or flushes from the oral, vaginal, preputial, rectal, and/or cloacal cavities;
- d) collect nail scrapings or clippings and fur or feathers, that may contain suspect's tissues or fluids;
- e) .

4.2.10 Document Behavior

The veterinarian shall record the state of comfort, attitude, demeanor, and pain level of the animal during the examination based on the animal's observed behaviors or behavioral responses to stimuli.

4.2.11 Document History

The veterinarian shall record any known or reported history regarding relevant animal care provider observations or behavioral traits, including but not limited to:

- a) elimination or marking habits;
- b) reaction or behavioral responses to various stimuli;
- c) feeding (eating) or drinking problems;
- d) grooming, over-grooming or self-mutilation behaviors;
- e) presenting complaint and/or specific lesions ;
- f) any other relevant information available.

If unusual or remarkable behaviors are expressed during the examination or in response to certain stimuli, those behaviors should be video recorded when possible.

4.2.12 Multi-animal Cases

When multiple animals are involved in the same case, a physical examination should be performed on each individual animal. If a physical examination is unsafe to conduct on any particular animal, a visual examination should be documented. A representative sample of animals may need to be selected to represent the group; the reason for selecting a representative animal and selection criteria shall be documented.

4.2.13 Document Subsequent Reevaluations of Animal Health

Any follow-up examinations shall document improvement or deterioration of an animal's condition (weight gain, wound healing, behavioral changes in response to pain medications, etc.) while in care.

4.3 Diagnostics

4.3.1 Initial Screening and Testing

As appropriate for the case; breed, species, age and health condition of the animal; and geographic location, the veterinarian should order screening and testing for internal and external parasites and/or regional, endemic, or breed specific diseases. This may include, but is not limited to, complete blood cell count (CBC), blood chemistries, urinalysis, and fecal analysis.

4.3.2 Diagnostic Imaging

The veterinarian should order diagnostic imaging as indicated based on history, exam findings, and case requirements. Survey orthogonal radiographs of the entire body are preferred. Additional imaging modalities may be necessary.

4.3.3 Multi-animal Case Diagnostics

In multi-animal abuse cases, diagnostics should be considered for each animal, but may need to be performed on particular individuals at the discretion of the veterinarian and/or investigating agency based on available resources and the nature of the case. It is advisable after triaging animals to perform diagnostics on some select and representative animals for forensic diagnostic evidence.

4.4 Euthanasia and/or Veterinary Forensic Postmortem Examination

In the event the animal in custody is determined to be suffering from illness or injury from which recovery is unlikely or treatment is unavailable, the animal shall be humanely euthanized according to current *American Veterinary Medical Association Euthanasia Guidelines*. If indicated, the deceased animal should undergo a veterinary forensic postmortem examination. The decision to perform humane euthanasia, veterinary forensic postmortem examination, or disposal of the animal remains shall be made in consultation with the lead investigator and/or prosecuting attorney.

4.5 Documentation (Record Keeping)

4.5.1 Animal Identification

See section 4.2.5.

4.5.2 Forensic Examination Documentation

All portions of the forensic examination shall be documented including, but not limited to all:

- a) normal and abnormal physical and behavioral findings,
- b) laboratory procedures and results,
- c) diagnostic imaging and results
- d) those assisting in the forensic examination.

4.5.3 Medical Records as Evidence

The medical record documenting the forensic examination shall be in a format commonly accepted by the veterinary profession and/or local veterinary regulatory agency.

4.5.4 Reportable Diseases

In the event of a zoonotic, communicable, or reportable disease, the appropriate human or veterinary authority shall be contacted, and the examinations shall proceed according to the relevant local, state, or federal protocols for the disease(s).

4.5.5 Administrative Review

The case file should be administratively reviewed by the lead veterinarian before the report is issued to check for clerical errors and ensure the proper format. This review should be documented, if performed, in the case file.

4.6 Photography and Videography

4.6.1 Equipment

For reasons of evidence integrity and legal discovery, forensic photography should be performed with a stand-alone camera. It is strongly advised to not use a cell phone (especially personal cell phones) for the forensic photography, as the entire phone and the data it contains, may become evidence in the case.

4.6.2 Photographic Documentation

An identifying label (case board) shall be included in at least the first photo in a photo series or the initial frames of a video, and include:

- a) date of the photograph/video,
- b) name or initials of the photographer/videographer,
- c) unique identifier(s) associated with the animal,
- d) the agency requesting the examination,
- e) name of the investigating agency,
- f) case or incident number from the investigating agency if available.

4.6.3 Photographs of Animals

Overall photographs of the animals should be taken from a minimum of six sides, as follows:

- a) cranial aspect (front),
- b) caudal aspect (back),

- c) dorsal aspect (top),
- d) lateral aspects (both sides),
- e) ventral aspect (underside), if possible.

NOTE If photography is not being utilized, this can be accomplished with videography.

4.6.4 Photographs of Evidence on the Animal

Any lesions, sites of trace materials or unusual findings shall be documented with orientation photos, which include overall, regional/midrange, and close-up photographs taken in series to maintain context/location on the body. Close-up photographs shall be taken with and without a measurement scale included in the image.

If any changes occur (removing evidence, cleaning or shaving wounds, etc.), photographs shall be taken and documented prior to and again after any changes are made.

4.6.5 Document Medical Changes with Images

During the progress of the case, additional images should be taken to document the visible changes of the animal over time and compliment other documented forensic evidence (e.g., weight gain and wound healing).

4.6.6 Integrity of Images and Use of Image Log

All images taken during the course of the case shall be maintained in an unedited format, to include any images taken in error or out of focus. All images during the forensic examination may be notated on an image log.

4.6.7 Image Preservation

Images shall be downloaded from camera storage media to a computer and/or other secure resources with the capacity to ensure the images are preserved. The use of at least two secure storage locations should be considered.

4.6.8 Videography

If only videography is utilized, the recording and storage of the video shall comply with 4.6.1 through 4.6.7. If the videography is supplemental to photography, it shall comply with the integrity and preservation requirements and recommendations in 4.6.6 and 4.6.7. It is strongly advised to not use a personal cell phone for the forensic videography, as the entire phone may become evidence in the case.

As a general protocol, the videography can be conducted without the audio input active and recorded without sound. However, if recording audio of the animal is important to the medical documentation, the sound input shall be turned on and the videography conducted with audio.

4.7 Diagramming/Sketching

When relevant to the case, the veterinarian should create sketches and/or diagrams of wounds and examination findings with measurements of the lesions, noting distance from at least two anatomical landmarks for orientation purposes.

4.8 Evidence Collection, Packaging, and Handling

4.8.1 Evidence Procedure

Entities handling evidence should have standard operating procedures (SOPs)/technical procedures for the receipt, handling, storage and/or disposal of evidence in order to minimize evidence loss, contamination and tampering. These procedures shall include the secure sheltering with controlled access and appropriate care of the living animals.

4.8.2 Evidence Identification and Packaging

Packaged evidence shall be sealed with a tamper-evident method. Evidence packaging shall be marked with a unique identifier, date collected, description of contents and the evaluator's signature or initials.

The veterinarian should consult with the laboratory where evidence is being submitted for proper collection and packaging protocols (e.g., preferred methods and supplies).

An evidence log shall be created for all evidence collected and packaged. The evidence log shall note the evidence identification number, the location on the body where the evidence was collected, date collected, case number, animal identifier (number/name), person collecting, and item collected.

4.8.3 Chain of Custody

A chain of custody shall be documented, showing manner of evidence transfer to laboratories or shelter facilities including the dates and signatures/initials of all personnel who had custody of the evidence.

4.8.4 Duplicate Samples

When appropriate, evidence should be collected and submitted in duplicate, and/or a portion of every evidence sample retained to enable future analysis. Chain of custody will record where the samples are retained.

4.8.5 Evidence Storage and Transfer

The evidence shall be stored in a controlled and secure manner appropriate for the nature of the evidence until disposition or analysis.

If being transferred to another agency for analysis, non-diagnostic evidence (samples collected for purposes other than identifying medical conditions) should be transferred to an accredited laboratory.

Annex A **(informative)**

Bibliography

The following bibliography is not intended to be an all-inclusive list, review, or endorsement of literature on this topic. The goal of the bibliography is to provide citations and examples of publications addressed in the standard.

- 1] ASTM E1459-13(2018), *Standard Guide for Physical Evidence Labeling and Related Documentation*
- 2] ASTM E1492-11(2017) *Standard Practice for Receiving, Documenting, Storing, and Retrieving Evidence in a Forensic Science Laboratory*
- 3] ASTM E1188-11(2017) *Standard Practice for Collection and Preservation of Information and Physical Items by a Technical Investigator*
- 4] *Standards Document for the Forensic Live Animal Examination*, IVSFA.^c
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^c Available from: www.ivfsa.org/wp-content/uploads/2021/05/IVFSA_Veterinary-Forensic-Live-Animal-Exam-Standards_Approved-2020_With-authors.pdf

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