Standards Document for the Forensic Live Animal Examination

Foreword

These minimum standards are designed to guide veterinarians who perform live animal examinations. An ad hoc committee was struck after the need for veterinary live animal examination standards was identified and voted upon at the 2018 International Veterinary Forensic Sciences Association business meeting.

This document provides minimum standards for veterinarians who perform live animal examinations. Included standards cover preliminary procedures, evidence documentation, medical triage on-scene, initial intake examination, and ancillary testing. Opinions and interpretations of a forensic case made by the veterinarian must be formulated after consideration of all available information; this document lists all the information the veterinarian should consider.

Keywords: veterinary forensic sciences, live animal exam, animal crime scene
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Recommendation for Best Practices: Standards Document for the Forensic Live Animal Examination (draft)

1 Scope

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

2 Normative References

There are no normative reference documents.

3 Terms and definitions

For the purposes of this document, the following definitions apply.

3.1 Animal

A creature or living thing, other than human, able to move of its own accord. The legal definition of animal may be further defined by local law.

3.2 Body condition score

A quantitative number used to estimate energy reserves in the form of fat and muscle.

3.3 Chain of custody

Chronological and sequential documentation, showing custody, control, access, transfer, storage, and disposition of evidence.

3.4 Evidence

A body of facts, information, or material objects providing proof that a belief or proposition is true or valid.

3.5 Photography (still and video)

Documentary visual evidence to create permanent record of the clinical condition, environment and any ancillary materials or factors associated with an investigation of animal injury or condition.

3.6 Imaging

Radiographs, Computed Tomography, Magnetic Resonance Imaging (MRI), ultrasound, and other diagnostic modalities used to assess and document condition, injury, or disease processes in the live animal.
3.7 **Forensic physical exam**

A systemic examination that includes, but is not limited to, the assessment of behavior in response to stimuli, body condition score and organ systems to identify, document, and collect evidence of an animal’s overall condition at a point in time.

3.8 **Alternative light source (ALS)**

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.

3.9 **Collection swabs**

Sterile swabs used for the collection of bodily fluids containing DNA evidence from body surfaces (e.g. fur, teeth, and nails).

4 **Requirements**

4.1 **Training and Personnel**

A licensed veterinarian in good standing in the state where the veterinarian is practicing.

4.2 **Forensic Physical Examination**

Every effort shall be made to preserve and document forensic evidence; however, this must be balanced with the urgent veterinary care and welfare needs of an animal.

4.2.1 **Traceable Identification**

Scan for microchip, tags, bands, and/or tattoos (any form of potentially traceable identification).

4.2.2 **Animal Signalment and owner information (if known).**

a) species
b) sex (intact, altered, or undetermined)
c) breed or breed type resemblance
d) age (known or estimated)
e) fur length and type (smooth or rough)
f) color and markings (any alterations noted)

4.2.3 **Body Condition Score**

Evaluate and document body condition score (BCS) using a published and/or referenced body condition scoring system.
4.2.4 External Physical Examination

Perform a thorough external physical examination, identifying any obvious or healed injuries (scars).

a) measure injury size and depth
b) describe the location of the wound
c) describe the wound (color, presence of granulation, contraction, epithelialization, contamination, etc.)

4.2.5 Identify abnormal odors, foreign objects, and substances

On all external areas and fur:

a) entire body to be scanned with alternative light source (ALS)
b) oral cavity (teeth and gingiva) evaluated and swabbed as appropriate, consider use of species-specific numbering system and dentition chart
c) condition of feet (including toenails/claws/hooves) evaluated and swabbed as appropriate
d) other orifice examinations and evidence collected dependent on findings

4.2.6 Physical examination record:

a) weight in pounds or kilograms, or by species/breed specific tape system
b) measure animal: height head to floor, withers to floor, nose to base of tail, nose to end of tail
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 or blood volume loss
h) otic and ophthalmic (fundic) exam

4.2.7 Physical examination system assessment:

a) Cardiovascular
b) Respiratory
c) Gastrointestinal
d) Urogenital

e) Neurological

f) Musculoskeletal

g) Integumentary

4.2.8 Sample for genetic analysis

When case appropriate, a buccal swab of the animal should be collected for familial genetic analysis and/or criminalist comparisons.

4.2.9 Document behavior

Document 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.

4.2.10 Document history

Document any known or reported history regarding behavioral traits or animal care provider observations relative to:

a) elimination or marking habits

b) reaction or behavioral responses to various stimuli

c) feeding (eating) problems

d) grooming, over-grooming or self-mutilation behaviors

e) the overall presenting condition of the animal and/or specific lesions

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

4.2.11 Multi-animal cases

In multi-animal abuse cases a physical examination shall be performed on each individual animal involved in the case. If a physical examination is unsafe to conduct on any particular animal, a careful visual examination shall be documented. Diagnostics in a multi-animal case need to be evaluated on the type of case, species involved, and resources available to the investigating agency or animal welfare organization. A number of animals may need to be selected to represent the group.

4.2.12 Document changes in animal health

The continuum of evidence shall be documented through physical examinations that identify improvement or deterioration of an animal’s condition, (e.g. weight gain, wound healing, behavioral changes in response to pain medications, etc.) while in care.
4.3 Diagnostics

4.3.1 Minimum database

Perform a minimum database to include blood cell count (CBC), chemistries, urinalysis, and fecal analysis.

4.3.2 Initial screening and testing

As appropriate, perform regional screen testing for internal and external parasites and/or regional, endemic, or breed specific diseases.

4.3.3 Additional screenings

Additional screening for toxins as needed.

4.3.4 Imaging

Perform imaging: whole body radiographs.

a) Other imaging modalities as needed.

4.3.5 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 Necropsy

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 shall undergo a forensic necropsy. The decision to perform humane euthanasia, forensic necropsy, or disposal of the animal remains shall be made in consultation with the lead animal abuse investigator and/or prosecuting attorney.

4.5 Documentation (record keeping)

4.5.1 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.

4.5.2 Forensic examination documentation

All portions of the forensic examination shall be documented.

a) all normal and abnormal findings
b) all laboratory procedures and results  
c) all diagnostic imaging and results  

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.  
a) The live evidence examination form shall be signed and dated by the person performing the evaluation. Secure digital signature with authentication key is acceptable.  
b) If examination form templates are utilized, consistency must be adhered to for all animals involved in a case and subsequent re-examination(s) for the duration of the case.  

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 shall be administratively reviewed by the lead veterinarian before the report is issued to check for clerical errors and assure the proper format. This review shall be documented in the case file.  

4.6 Photography  

4.6.1 Proper Photo Series  
Photographs with an identifying label must be included in at least the first photo in a photo series, which include:  
a) date and time of the photograph  
b) name or initials of the photographer  
c) unique identifier(s) associated with the animal and the agency requesting the exam  
d) name of the investigating agency  
e) case or incident number from the investigating agency if available  

4.6.2 Animal Photographs  
Overall photographs of the animals should be taken from a minimum of six sides.  
a) front (cranial aspect)  
b) back (caudal aspect)
c) top (dorsal aspect)

d) both sides (lateral aspects)

e) underside (ventral aspect): if possible

4.6.3 Photographs of Evidence

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

4.6.4 Photograph Prior to Changes

All lesions, sites of trace materials, or unusual findings must be documented photographically prior to making changes (removing evidence, cleaning or shaving wounds) and again after any changes are made during the documentation process.

4.6.5 Photograph to Create a Medical Record

As the animal recovers, additional photographs shall be taken to document the continuum of forensic evidence and compliment other documented forensic evidence (e.g. weight gain and wound healing).

4.6.6 Integrity of Photographs

All photographs should be maintained in their original form, to include any photos taken in error or out of focus. All photographs during the forensic examination shall be notated on a photo log, which includes the photo number, and description of what is represented in the photograph. In large scale cases photograph logs may have groups of photos listed or documented together in the log. Check with local law enforcement practices for documenting and logging photographs.

4.6.7 Photograph Preservation

Photographs shall be downloaded from a camera to a computer and/or other devices with the capacity to ensure the photographs are preserved in at least two locations as appropriate.

4.6.8 Equipment Requirement

Forensic photography shall be performed with a stand-alone camera and not with a cell phone.

4.7 Diagramming/Sketching

It is advisable to create sketches and/or diagrams of wounds and examination findings (e.g. using exam templates) with measurements of the lesions and noting distance from at least two anatomical landmarks for orientation purposes.

4.8 Evidence Packaging and Handling

4.8.1 Evidence Packaging:
It is advisable to check with a forensic laboratory for proper collection and packaging of evidence (e.g. preferred methods and supplies). Most clinics will have the necessary material i.e. sterile swabs, sterile or distilled water, and envelopes for evidence collection (DNA swabs are recommended).

There are commercially available forensic packaging materials available (highly suggested if frequent involvement in these types of cases is anticipated), to be on hand in the clinic or laboratory.

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

4.8.2 Evidence Procedure

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

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.

a) A copy of the document should be retained by each person/facility who signs.

4.8.4 Evidence Identification

Examined evidence packaging shall be marked with a unique identifier, date collected, description of contents and the evaluator's signature or initials.

4.8.5 Duplicate Samples

When possible, evidence should be collected and submitted in duplicate, and/or a portion of every evidence sample shall be retained to enable future analysis.

4.8.6 Documentation of Evidence Modification or Alteration

Evidence subject to major modification shall be photographed prior to alteration. Examples of a major modification include but are not limited to weight gain, shaving to remove mats, major grooming, and wound repair.

4.8.7 Evidence Storage and Transfer

Evidence shall be:

a) Stored in a controlled and secure manner, and
b) Transferred to an appropriate agency for submission or analysis by an appropriate ISO/IEC Accredited Laboratory.

5. Reference Materials and Collections

Provide citations as appropriate to justify your opinions and determinations.

6. Conformance

This standard has no conformance requirements.