



## Veterinary Forensics

# Minimum standards and best practices for the clinical veterinary forensic examination of the suspected abused animal



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## ABSTRACT

The examination of an animal (live or deceased) for the purposes of determining whether it is a subject of abuse requires analysis by a veterinarian. This document was created to provide minimum standards and best practices for veterinarians when performing clinical veterinary forensic examinations on live animals. The objective of this document is to ensure appropriate steps are taken to identify, document and preserve evidence in animal involved crimes. These include recommendations and minimum standards in the context of legal considerations for personnel, physical examination, ancillary testing and diagnostics, documentation (written and photographic), euthanasia and necropsy considerations, evidence packaging and handling, reports, opinion formation and testimony specific to the examination of live animals encountered in medicolegal cases.

## 1. Introduction

Veterinary forensic medicine is a rapidly evolving field of veterinary medicine. In accordance with recommendations of the 2009 National Academy of Sciences (NAS) Report, standards are being developed to guide the conduct of forensic sciences. In 2019, veterinary forensic sciences was added to the Organization of Scientific Area Committees for Forensic Science, Crime Scene Investigation Subcommittee. Standards are generally accepted and mandatory principles; best practices or guidelines are recommendations for practice. This is the first of a series of proposed minimum standards and best practices to ensure appropriate steps are taken to identify, document and preserve evidence in animal involved crimes and scenes in a manner consistent with other crime scene documentation. Future minimum standards and best practices will address specific categories of animal abuse.

These minimum standards and best practices are intended to instruct the veterinarian as well as to inform investigative agencies. As set forth by the International Organization for Standardization (ISO), items prefaced with terms such as “shall” and “shall not” indicate required adherence; and so are issued with the expectation that they are readily achievable by veterinarians in all settings, regardless of resources. Statements in this document prefaced by “should” or “consider” are aspirational recommendations for the future conduct of clinical veterinary forensic examinations and should be adhered to whenever possible. Deviation

from these minimum standards and best practices can be acceptable based on the circumstances of the particular case or practitioner resources. Any deviation from a requirement or recommendation shall be reasonable and articulable.

The following are minimum standards and best practices for the clinical veterinary forensic examination of the suspected abused animal. These include: recommendations and minimum standards in the context of legal considerations for personnel, physical examination, ancillary testing and diagnostics, documentation (written and photographic), euthanasia and necropsy considerations, evidence packaging and handling, reports, opinion formation, testimony and definitions specific to the examination of live animals encountered in medicolegal cases. The objective of this document is to ensure appropriate steps are taken to identify, document and preserve evidence in animal involved crimes.

Although veterinarians sometimes express reluctance to become involved in animal abuse cases, citing concerns of inadequacy in training, all veterinarians have the necessary skills to perform medicolegal examinations. However, it is important to be cognizant of key differences when conducting a veterinary medicolegal investigation. A basic premise of examining suspected victims of animal abuse is that the animal, anything derived from the animal and the animal's environment are evidence. Therefore, appropriate chain of custody and evidence management processes shall be in place.

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Additionally, the veterinarian must ensure they have the legal authority to examine, document and collect evidence. The examining veterinarian must bear in mind that an animal can simultaneously be both personal property and physical evidence in a criminal case. A desire to collect information does not equate to permission and items obtained outside the bounds of legal search and seizure may be inadmissible in a court of law. Therefore, there must be voluntary consent, voluntary relinquishment of ownership, a court-order either terminating ownership rights or authorizing a search, in order for a veterinarian to conduct a medicolegal investigation beyond what is required to prevent suffering and preserve life. The veterinarian should discuss with the proper authorities (e.g., law enforcement and/or the prosecutor) what initial and ongoing care (including the potential need for emergent care), examinations, and diagnostics (including diagnostic imaging) are permissible. The veterinarian shall remain within their realm of expertise. Evidence collected which falls outside of their expertise shall be submitted to the appropriate specialist, laboratory or held by the veterinarian or investigating agency for future analysis if required.

Another key difference is that in veterinary medicolegal cases the veterinarian does not have a duty or otherwise serve a particular person, organization or client. Rather, a veterinary medicolegal investigation shall be neutral, objective, and independent. The veterinarian shall fairly and accurately document the evidence and their findings. Veterinarians can be qualified as experts in a court of law based on knowledge, skill, experience, training, and education and therefore may give opinions regarding evidence that falls into their area of expertise during testimony. The veterinarian's scientific, technical, and other specialized knowledge serves to assist the trier of fact to understand the evidence or to determine a fact in issue. Expert testimony shall be based on sufficient facts and data and be the product of the reliable application of principles and methods to the facts of the case [3].

In most cases of suspected animal abuse, initial steps of documentation should be performed before any treatment that would alter the animal as evidence. However, where there is a simultaneous need to treat pain and suffering and document evidence, the veterinarian must be guided by their professional and ethical obligations to prevent animal suffering.

Whether an act, or failure to act, constitutes animal abuse depends on the specific laws of the jurisdiction; indeed, even the definition of "animal" varies across jurisdictions. The Federal Bureau of Investigation recognizes four categories of animal abuse: simple/gross neglect (the failure of a person to provide for the needs of an animal "lack of food, water, shelter, grooming or veterinary care"), intentional abuse and torture, organized abuse (dogfighting and cockfighting), and sexual abuse [2]. If suspected, the animal and corresponding crime scene should be preserved and documented with the same diligence as would be accorded to any other crime scene.

Depending on the resources of the local jurisdiction, a law enforcement officer may turn to a veterinarian in their community, with or without training in animal cruelty investigation techniques for assistance in documenting the condition of the animal. The following minimum standards and best practices are basic steps for a veterinarian to take when examining a live animal suspected to be suffering from abuse.

## 2. Requirements and recommendations

### 2.1. Training and personnel

Most rules and regulations of veterinary practice require that a veterinary medical examination be performed by a licensed veterinarian in the location where practicing. 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.

A trained handler and/or veterinary technician should also be present at the time of examination to assist with collecting and documenting evidence. The handling and packaging of evidence should be performed by individuals with training and/or experience in these processes. The name(s) of any person(s) present during a forensic examination should be documented.

### 2.2. Legal considerations prior to performing examinations and diagnostics

The veterinarian's legal right to perform a medicolegal examination, beyond the duty to alleviate or prevent suffering and preserve life, shall be established prior to the examination of the animal. An owned animal is the property of the owner; therefore, in order to examine the animal, there must be consent, voluntary relinquishment of ownership, or a court-order terminating ownership rights or authorizing a search.

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. 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.

### 2.3. Clinical forensic examination

Animals are living evidence that will change with the passing of time, with the provision of care, or with changes in their environment. The most expeditious evaluation and documentation of an animal's condition at the time of discovery or presentation is essential. However, necessary medical intervention to preserve and maintain the animal's health, alleviate pain, or prevent further decline takes precedence over evidence collection.

The animal should be processed as a crime scene with the same attention to detail and ultimate goals to identify, collect, preserve, and interpret evidence to reconstruct the scene and/or events.

#### 2.3.1. Prior to conducting a clinical forensic examination, the following should be considered

- a) In cases where law enforcement presents an animal for evaluation, the veterinarian should be presented with or request relevant information about the circumstances, allegations and known or understood history related to the animal's condition. The information about the investigation may change or new information may become available, therefore, the veterinarian shall remain unbiased and consider all possible causes of illness or injury, which may influence the diagnostics pursued.
- b) If possible, the veterinarian should be familiar with the overall conditions of the scene from which the animal was recovered, as well as any related items of evidence. Ideally, the veterinarian is involved in the scene investigation.
- c) If unable to be present on scene, the veterinarian shall request and be provided with relevant law enforcement documentation, including but not limited to narrative reports, photographs and video recordings.
- d) To facilitate the maintenance of proper chain of custody, each animal shall have or be assigned a unique identifier such as a name or number.

This identifier shall be affixed to the animal as appropriate for the species, and to the animal's primary enclosure.

*2.3.2. A complete veterinary physical examination record shall contain, at a minimum, the following, as appropriate for the species (both normal and abnormal findings shall be thoroughly documented)*

- a) Date of examination and name of examining veterinarian.
- b) Signalment, to include: unique identifier, species, known breed or breed type appearance, sex, age (known, reported or estimated; if estimated document how determined such as weight, dentition, radiographic physeal and ossification center evidence, lenticular transillumination or other method), color and markings. Age may also be referred to in categories such as: neonatal, juvenile, young, young adult, adult and geriatric (indicating the ranges used).
- c) The animal's weight, which should be repeated at least twice on a routinely calibrated scale to ensure accuracy.
- d) The results of a scan for a microchip using a universal scanner, as well as other forms of individual identification such as: tags, collars, bands, ear notches, toe/web punches and/or tattoos.
- e) Body condition score, indicating scale used (published scales should be used as available).
- f) An evaluation of the cardiovascular system (e.g., heart rate, rhythm, description of any murmurs if present, pulse rate and quality, noting asynchronous and/or asymmetrical pulses if present).
- g) An evaluation of the respiratory system (e.g., respiratory rate, effort, and sounds).
- h) Document body temperature and method of collection (consider aural or other methods to decrease stress and especially if sexual abuse is suspected).
- i) An evaluation of the mucous membranes (e.g., color and capillary refill time).
- j) An evaluation of the oral cavity and dental exam (consider the use of a visual periodontal disease assessment tool and dental charts to document specific abnormalities such as broken, worn, discolored, missing teeth, ulcerations, masses, malocclusions).
- k) An estimation of hydration status (dehydration may be documented as a percentage or a range of percentage. Note observations taken such as skin turgor, mucous membrane moisture). The effect of body condition on skin turgor should be considered; animals in less than ideal body condition may require alternative methods to determine hydration status (e.g., packed cell volume and total protein levels).
- l) An otic and ophthalmic assessment describing the internal and external components of the eyes and ears. An otoscope and ophthalmoscope are essential pieces of equipment for thorough evaluations.
- m) Results of an abdominal palpation (e.g., presence or absence of pain, masses, fluid, pregnancy, organomegaly as appropriate). Document results of auscultation if performed.
- n) An evaluation of the urogenital system (e.g., an assessment of reproductive status such as the presence of scars or tattoos, stage of estrus, presence or absence of secondary sex characteristics, laboratory hormone evaluations, mammary gland development, any signs of disease or trauma such as discharge, pain, abrasions, contusions, lacerations, testicular size and symmetry). Include a rectal exam as appropriate. In cases of suspected sexual abuse, consider further examination of the entire animal and collection swabs for potential biological or other evidence.
- o) An evaluation of the musculoskeletal system (e.g., observations of conditions to include over-muscling or muscle atrophy, mobility such as lameness or gait, referencing published scales as appropriate. Palpate surfaces and long bones for abnormalities such as symmetry, swellings, pain. Manipulate joints through range of motion, as appropriate and note signs of pain, laxity, crepitus or immobility).
- p) Results of peripheral lymph node palpation (e.g., size, symmetry, pain, consistency).

- q) An evaluation and description of the integument (e.g., skin, fur coat, feathers, scales, claws, foot pads, hooves, beak. Note length of nails/claws, hooves or beak. Note alignment of beak. Note the presence or absence of external parasites, describe any abnormalities such as wounds, scars, masses, excessive flaking, loss of luster of fur, odor, changes to pigmentation of dermis or fur. Note when matting of fur is present and when containing foreign materials, obstructing orifices, obstructing vision, strangulating limbs or limiting range of motion). Provide measurements as appropriate to document the size and location of specific findings.
- r) An evaluation and description of the animal's neurological status (e.g., mentation, proprioception, reflexes, cutaneous sensation, cranial nerve responses as appropriate).
- s) Pain assessment and behavior during examination (e.g., general demeanor, response to handling and palpation including, but not limited to, signs of discomfort, distress and/or pain). Reference a published pain or grimace scale as appropriate. Reevaluate and note response to any pain medications.
- t) Other considerations:
  - i. Include diagrams and sketches with measurements where appropriate.
  - ii. Use an alternate light source (ALS) to examine the entire body if sexual abuse is alleged or suspected. The most readily available ALS in a veterinary practice is a Wood's lamp. Visualization of naturally fluorescing body fluids such as semen, saliva, vaginal fluids can be enhanced through the use of an orange filter and high intensity blue light at 450 nanometers [6].
  - iii. Specialist consultations (e.g., cardiac, orthopedic, neurologic, ophthalmic, radiologic) should be conducted as appropriate. Any documentation related to supplemental examinations shall be disclosed and included in the animal's file.
  - iv. Measurements of the animal should be taken as appropriate (e.g., nose tip to tail base; elbow to floor in a normal standing position; diameter of the chest at its widest point; top of head or ears, if erect, to floor in a normal standing position). This can be accomplished by standard intake photography of the animal with a ruler or measuring tape on the wall behind the animal, on the floor under the animal and potentially with the use of standard radiology calipers.

*2.3.3. The safety of the animal and staff performing examinations is paramount*

If a physical examination is unsafe on any particular animal, a careful visual examination shall be documented. Appropriate chemical restraint may be necessary to conduct an exam. Specific reasons the exam was limited or delayed shall be recorded. Selection of sedation pharmacology shall be considered in balance with the need to collect laboratory samples for potential toxins or performance enhancing drugs.

Follow up physical exams, photographs, and diagnostic tests to monitor an animal's changing condition are critical evidence and shall be documented.

#### *2.4. Diagnostics and ancillary testing*

A minimum initial evaluation of an animal shall include a physical examination and photographic documentation. This initial evaluation should also include baseline laboratory tests and diagnostic imaging as deemed necessary. Additional testing to confirm or exclude presumptive or empirical diagnoses should be conducted to reach and document definitive diagnoses where possible.

It is recommended to consider collection of samples for baseline clinical laboratory testing or documentation. Test choices should be determined based on the examination findings, species, age, reproductive status, breed and number of animals involved.

## 2.5. Documentation and recordkeeping

Procedures and/or protocols shall be in place to create accurate and complete case documentation of all information reviewed and generated during the veterinary medicolegal investigation. All medical contacts with the animal(s) should be documented with a written record of the date, time and personnel present. This complete medical record and documentation of the clinical exam and diagnostic testing shall be provided to relevant authorities in accordance with applicable law or as required by court order. Photographs and video recordings of animals are part of the case documentation. Failure to accurately and completely document the investigation may negatively impact the outcome of the case.

## 2.6. Photography

Photography is an essential component of documenting a clinical forensic examination. Ideally, photographs should be taken on a digital single-lens reflex (DSLR) or a good quality point and shoot camera that records data on a removable storage device, such as an SD card. Removable storage devices should be cleared and formatted prior to photographing a new case. Only one case should be on a removable storage device at any given time. Photographs shall be maintained in a manner that ensures their integrity. Files shall be downloaded on to a secure storage device, preferably with off-site backup. Files shall not be shared outside of the criminal case (e.g., social media) unless permission has been provided by law enforcement or the prosecutor.

If used for photography, cellular telephones may be subject to discovery and relinquishment during the criminal justice process. Therefore, photography using a personal cell phone should be avoided.

### 2.6.1. Photographs should be taken in a series

Always start the series with a photo card/label or board which should indicate the following:

- a) Investigating law enforcement agency and case number
- b) Unique animal identifier
- c) Site where photographs are taken (e.g., scene, clinic, shelter)
- d) Date
- e) Name or initials of photographer

The next photo of the series should be of the animal with the photo board, followed by overall, mid-range, and close-up photographs with and without a measuring scale which also demonstrates color, as appropriate.

Overall photographs of the animal should be taken from a minimum of five and ideally six sides, as allowable given the species and individual animal, to include:

- a) Cranial view
- b) Caudal view
- c) Dorsal view
- d) Right lateral view
- e) Left lateral view
- f) Ventral view, when possible

The animal shall be photographed promptly in the condition it was found. Multiple images should be taken of every significant finding or item of evidence including mid-range and close-up photographs with and without a scale, as appropriate. The mid-range photographs should include a recognizable anatomic landmark that may not be present in the close-up in order to thoroughly document the location of the item of interest. Ideally, mid-range photographs of an animal's dentition should be performed as part of documenting an animal's condition. Photographs shall be obtained to document the animal at each step if alterations to the animal are made. As the animal's condition progresses, additional photographs may be useful to document these changes (e.g., weight gain

and wound healing). Photographs shall never be deleted from within a series.

## 2.7. Diagramming/Sketching

Additional forms, such as body diagrams, should be used to supplement the documentation of findings or the location of physical items of evidence on the body. Such information can later be used to reconstruct and communicate findings. Use triangulation (measurements from at least two separate anatomic landmarks) to more accurately document the location, as appropriate.

## 2.8. Euthanasia and necropsy

In the event that an animal is determined to be suffering from a condition from which recovery is unlikely or treatment is unavailable, euthanasia shall be considered. An animal shall not be euthanized without appropriate authorization (e.g., consultation with law enforcement and/or prosecutor, or the owner, as appropriate). In emergent circumstances, reasonable efforts to obtain authorization should be made, without violating the veterinarian's professional and ethical responsibility to prevent animal suffering. Necropsy and/or disposal shall only be performed with owner consent or in consultation with law enforcement and/or the prosecutor. All discussions and/or authorizations obtained shall be documented within the animal record. If an animal is euthanized, the procedure shall be performed in accordance with the current American Veterinary Medical Association (AVMA) Euthanasia Guidelines [1]. If indicated and authorized by law enforcement and/or the prosecutor, the deceased animal shall be preserved for a potential forensic necropsy.

## 2.9. Evidence packaging and handling

Veterinarians or their designees shall take appropriate steps to ensure the integrity of evidence by preventing contamination, tampering, alteration, or loss. Procedures and documents shall be utilized to account for the integrity and possession of evidence by tracking its handling and storage from its point of collection to its final disposition. It is advisable to maintain an evidence inventory, listing the items collected and each item's unique identifier.

As an item of evidence, each animal shall be assigned and labeled with a unique identifier (name or number) and such identifiers shall be used throughout the record keeping and chain of custody processes. Derivative evidence gathered from individual animals shall be assigned a unique identifier, ideally subordinate to the originating animal's identifier to indicate the source of the sub-item.

It is advisable to check with the receiving laboratory regarding the proper collection and packaging of specific items of evidence, as preferences may differ. Packaging items of evidence collected from the animal or its environment shall be properly labeled and sealed. Labels should include:

- a) The case number
- b) Item number (unique identifier)
- c) Investigating agency
- d) Location of collection
- e) Description of the item
- f) Name or initials of the individual who collected the item
- g) The date the item was collected

Packaging should be sealed with frangible evidence tape and signed with the packager's initials and the date. If frangible tape is not available masking tape or other suitable adhesive tape may be used. The packager's initials and date shall cross over the tape and onto the packaging. An evidence receipt shall be created for all items of evidence collected by and leaving the examining veterinarian's custody. The evidence receipt

should indicate how the item was packaged, including a description of the item and the name and signature of the individual who collected the item.

Evidence shall be appropriately packaged to inhibit sample degradation, dissipation or loss, and stored in a secure manner with appropriate environmental controls. A log of all evidence in the secure storage area, including refrigerators and freezers, shall be maintained noting the date/time and person removing evidence as well as when the item is returned. Items of evidence shall not be disposed of until consent has been obtained by the submitting agency.

## 2.10. Reports

The veterinarian shall keep a written record of medical findings, tests and procedures. A written summary report to communicate findings to law enforcement and others in the criminal justice system should be created. Such reports may be admitted into evidence in a court of law. Multiple veterinarians may author reports. Furthermore, a single veterinarian may author multiple reports for a single case, such as a preliminary, supplemental, and final report. A caveat statement may be included which allows for a supplemental report to be produced if further relevant information is presented. Reports may also contain cited reference materials as well as photographs. Submitted reports shall be signed and dated.

### 2.10.1. Reports shall include, as available

- a) The investigating agency and case number, as well as any other case numbers assigned
- b) Animal(s) unique identifier and signalment
- c) Reason for the examination and the date the examination occurred
- d) Basic scene findings as understood by the examining veterinarian (observed or reported), including materials reviewed (e.g., witness statements, narrative reports or scene photographs) relevant to medical conclusions
- e) Relevant medical history
- f) Physical examination findings or a summary of findings in a case with multiple animals
- g) Diagnostic and ancillary tests (including imaging)
- h) Results and treatments provided and responses to treatments
- i) Conclusions and expert opinions relative to the known facts of the case

### 2.11. Opinion formation and testimony

The admissibility and strength of evidence is dependent upon it being lawfully collected and properly preserved with documentation of chain of custody. Every case shall be properly documented from the time of initial involvement. The veterinarian shall provide documentation and testimony which clearly and accurately represent the condition of the evidence. If permitted by the Court, conclusions, such as those relative to the mechanism of injury or cause of harm, may be expressed as opinions based on the veterinarian's analysis of evidence using their training, knowledge and experience. These opinions should be included in the written report and the veterinarian should be prepared to testify orally in court regarding their analysis and opinions.

While an enumerated Code of Ethics is beyond the scope of these minimum standards and best practices, veterinarians have professional duties that they are bound to and shall execute. These include the duty to remain competent in current veterinary practice, be objective, act thoroughly and to produce results and conclusions within the scope of the expertise of the individual practitioner.

## 3. Definitions

### 3.1. Alternative light source (ALS)

Instrument consisting of a light source and a combination of filters that allow selected wavelengths of light to be screened out.

### 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. Animal abuse

Broad term used to describe the maltreatment of an animal. This term includes harm inflicted on animals and harm suffered due to a failure to provide care. Each jurisdiction has different legal definitions. The FBI defines animal abuse (for purposes of data collection) as: "Intentionally, knowingly, or recklessly taking an action that mistreats or kills any animal without just cause, such as torturing, tormenting, mutilation, maiming, poisoning, or abandonment. Included are instances of duty to provide care, e.g., shelter, food, water, care if sick or injured; transporting or confining an animal in a manner likely to cause injury or death; causing an animal to fight with another; inflicting excessive or repeated unnecessary pain or suffering, e.g., uses objects to beat or injure an animal. This definition does not include proper maintenance of animals for show or sport; use of animals for food, lawful hunting, fishing or trapping."

### 3.4. Animal sexual abuse

Animal sexual abuse involves a spectrum of sexual acts, including coercive, violent, and non-violent sexual contact with or without penetration; behavioral conditioning of animals to perform sexually on or with people; solicitation for sex with animals; and deviant behavior including sexual torture and necrophilia. Various jurisdictions may have different specific legal definitions and terminology, such as "crimes against nature" or "bestiality" and in some jurisdictions some acts may fall within the definitions of animal abuse or animal cruelty.

### 3.5. Baseline laboratory testing

Clinical laboratory testing performed in conjunction with the clinical forensic examination. Laboratory work may be repeated over time to document recovery or decline of an animal's condition while in care.

Note- Examples include complete blood cell count (CBC), complete chemistry panel, urinalysis, thyroid panel, fecal analysis, pregnancy test, tick borne infections, heartworm test, feline leukemia and feline immunodeficiency virus testing, equine infectious anemia testing, toxins, steroids, Babesia testing, samples for DNA analysis and any other diagnostics as deemed appropriate by the examining veterinarian.

### 3.6. Body Condition Score (BCS)

A published quantitative numbering system used to estimate energy reserves in the form of fat and muscle. Published body condition scales are species specific.

### 3.7. Body diagrams

A species appropriate outline illustration of the shape of the animal's body used to document measurements and/or findings.

### 3.8. Chain of custody

Chronological and sequential documentation, showing who had custody, control, access, or did transfer, store, and dispose of physical evidence. Physical evidence includes the animals themselves and/or evidence collected from animals and their environments.

### 3.9. Clinical veterinary forensic examination

Medical examination of a live animal for medicolegal purposes.



### 3.10. Close-up photographs

Focus on a specific subject which may not include any surrounding or contextual information. When documenting an injury or lesion on an animal, the close-up photographs demonstrate the point of interest, with and without a measuring device for scale, ideally which also demonstrates color.

### 3.11. Diagnostic imaging

Non-invasive imaging techniques such as radiographs (x-ray images), Computed Tomography (CT), Magnetic Resonance Imaging (MRI), ultrasound(U/S), and other diagnostic imaging modalities used to assess and document condition, injury, or disease processes.

### 3.12. Emergent care

The care for a medical condition or concern requiring prompt treatment or action for a life-threatening medical condition(s).

### 3.13. Evidence

Anything that can prove, support or disprove a fact or facts in contention in a legal proceeding. In cases of alleged or suspected animal abuse, the animals themselves, as well as anything, within or derived from the animal is considered evidence. Evidence may also include the environment the animals were in at the time of the event or items or conditions discovered in the animals' environment.

### 3.14. Evidence receipt

A form that documents the chain of custody of an item from the time it leaves the hands of the individual who collected it to the time of its introduction into evidence in court and/or disposition.

### 3.15. Forensic

Related to methods, techniques and processes used to establish conclusions and/or opinions, facts, and findings which can be used for legal proceedings [5].

### 3.16. Law enforcement

Agencies and their employees who have the authority to enforce criminal laws, investigate crimes, and make arrests. Law enforcement may also include animal control officers and humane agents if they have authority to enforce criminal animal protection laws.

### 3.17. Medicolegal

Having both medical and legal aspects.

### 3.18. Mid-range photographs

Show the relation of a specific visual finding to the entirety of the item. When documenting an injury or lesion on an animal, the mid-range photographs include an identifiable anatomic area or structure for context.

### 3.19. Overall photographs

Depict the entire item of evidence. Each side of a three-dimensional item should be photographed. When documenting an animal, a series of overall photographs capture the entire animal: cranial view (front),

dorsal view (top), left and right lateral views (sides), caudal (rear end) and ventrum (underside), as appropriate given the species.

### 3.20. Pain scale

Standardized, published scale used to quantify an animal's level of pain.

### 3.21. Performance enhancing drugs

Substances used with the intent to improve any form of activity or performance in animals.

### 3.22. Primary enclosure

An area of confinement, such as a cage, run, kennel, pen, carrier, stall, hutch, room, tether or chain space, where an animal eats, sleeps and generally spends the majority of its time.

### 3.23. Scene

A place or object that is subject to and/or requires forensic examination. Note: A crime scene is a common description of a scene where a suspected crime has been committed. The scene can be a person or an animal [4].

### 3.24. Shall

A provision that is mandatory.

### 3.25. Should

A provision that is not mandatory, but a recommended practice.

### 3.26. Veterinary medicolegal investigation

The veterinary medicolegal investigation is conducted by a veterinarian and includes but is not limited to the examination of an animal, the collection of clinical information, photographs, physical evidence from an animal or animals involved in an alleged crime(s). The investigation may also include an assessment of any medical history, scene findings observed, and statements or reports provided by law enforcement or witnesses.

## Declaration of Competing Interest

The authors have no competing interests to declare.

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