

# Euthanasia

MWDs may present with illnesses or injuries so severe that the only humane option is euthanasia. MWDs may be euthanized in the case of catastrophic wounding with poor prognosis for recovery and in order to relieve the MWD from undue suffering. Examples include catastrophic TBI, traumatic limb amputations, decompensatory refractory shock, and major abdominal evisceration injury, in addition to failure to respond to resuscitation, or rapid clinical deterioration with poor prognosis for recovery.

HCPs must recognize the need for euthanasia and perform euthanasia in a humane manner. Normally euthanasia requests must be authorized by either the first field grade officer in the MWD unit supervisory chain of command or a veterinarian. If possible, contact a veterinarian and receive verbal agreement to perform euthanasia. When in doubt, consider the best interest of the MWD, and perform euthanasia if felt necessary to relieve suffering.

All euthanasia procedures will be performed humanely and in accordance with the American Veterinary Medical Association Guidelines on Euthanasia.<sup>1</sup> Note that neuromuscular blocking agents are NOT an acceptable euthanasia agent, even when combined with other drugs.

In the deployed HCP setting, the following 3 options are recommended for canine euthanasia:

1. Commercial veterinary euthanasia solution. Several veterinary euthanasia products are available and include a barbituric acid derivative (usually sodium pentobarbital at ~400 mg/mL), often with local anesthetic agents or agents that metabolize to pentobarbital. Ideally, veterinary personnel will coordinate with adjacent or supporting HCP units to arrange access to these drugs in emergencies. Controlled substances management regulations apply.
  - These products should be given by the IV route.
  - The standard dose of these products is 1 mL per 10 pounds of body weight.
2. Barbiturate overdose. All barbituric acid derivatives used for anesthesia are acceptable for euthanasia when administered intravenously. There is a rapid onset of action, and loss of consciousness induced by barbiturates results in minimal or transient pain associated with venipuncture. Desirable barbiturates are those that are potent, long-acting, stable in solution, and inexpensive.
  - Sodium pentobarbital best fits these criteria and is most widely used.
  - The lethal pentobarbital dose for dogs is 40-60 mg/kg IV.

3. Potassium chloride (KCl). The use of a supersaturated solution of potassium chloride injected is an acceptable method to produce cardiac arrest and death. When using KCl, the MWD MUST BE anesthetized deeply before administration of KCl. It is unethical and unacceptable to use KCl in un-anesthetized animals.
  - Anesthetize the MWD (See [Chapter 16](#)).
  - Once anesthetized, rapid IV or IC administration of 1-2 mEq/kg KCl will cause cardiac arrest.
  - A typical dose for an average-sized MWD would be 30-40 mL of 2 mEq/mL KCl.
  - Bolus administration through IV catheter is the preferred route.

It is critical to ensure the death of the MWD after agents have been given for euthanasia. Ensure absence of a heart beat and pulse, absence of voluntary respirations, and absence of electrical activity on an ECG tracing (if available) for at least 5 minutes after presumed death. Agonal respiratory efforts are common and should cease before death is declared.

Whenever possible, a gross necropsy is recommended.

Collect blood and urine samples (one red top and one EDTA tube of blood and urine in a specimen cup or capped syringe) before euthanasia.

The MWD's body (ideally refrigerated, not frozen), all health records, and samples must be sent to the supporting veterinary facility for complete necropsy and final disposition paperwork.

If necropsy by veterinary personnel will be delayed, it is ideal to collect gross samples of major organs and tissues that are obviously abnormal or traumatized, and preserve with 10% buffered formalin. TB MED 283 (Veterinary Necropsy Protocol for Military Working Dogs) is an excellent reference.<sup>2</sup>

If possible and deemed appropriate by the senior HCP present, MWD handlers should be permitted to be present for euthanasia. The bond between handler and MWD cannot be overemphasized, and many handlers will want to be present. Note that the MWD handler as well as providers may require behavioral health care or grief counseling.

## Euthanasia References

1. American Veterinary Medical Association. AVMA guidelines for the euthanasia of animals: 2013 edition. Available at: [www.avma.org/KB/documents/guidelines\\_for\\_the\\_euthanasia\\_of\\_animals\\_2013.aspx](http://www.avma.org/KB/documents/guidelines_for_the_euthanasia_of_animals_2013.aspx). Accessed 01 November 2016.
2. TB MED 283. Veterinary Necropsy Protocol for Military Working Dogs and Pathology Specimen Submission Guidelines. Headquarters, Department of the Army, 24 May 2001.