

Euthanasia and Mass Depopulation

During Animal Health Emergencies



During an animal health emergency, the euthanasia of large numbers of animals (or mass depopulation) may be necessary. Humane treatment of the animals and use of approved methods are essential for this response activity.

Euthanasia/Mass Depopulation

- Most commonly used for highly contagious disease outbreaks to minimize the spread of disease
- Also used to end the suffering of injured or ill animals following a natural disaster

Goals of Euthanasia

- Humane treatment of the animals at all times
- Use of an acceptable euthanasia method that is quick, efficient and humane
- Minimize negative psychological impact on animal owners and caretakers, responders, and the public
- Prevent disease spread
- Prevent adulterated animal products from entering food chain

Considerations

- **Follow guidelines:** Method selected should follow current recommendations and guidelines
 - AVMA Guidelines on Euthanasia
 - OIE Terrestrial Animal Health Code
 - FAD PReP Guidelines: Mass Depopulation and Euthanasia
- **Method selection will depend on:**
 - Species and number of animals involved
 - Level of handling and restraint required
 - Technical skill of responders
 - Cost
 - Potential for chemical residue
 - Personnel safety
- **Animal welfare**
 - Humane treatment
 - Quickly render unconscious
 - Minimize stress and pain
- **Skilled personnel needed**
- **Public perception**
- **Laws for acceptable methods vary with state**

Euthanasia Methods

The following overviews some of the methods for humane euthanasia of animals. Consult appropriate euthanasia guidelines (listed at the end) for specific methods for a particular species.

➤ Physical Euthanasia Methods

- Quick, painless, humane and practical
- Requires technical skill and highly trained personnel
- **Methods**
 - Captive bolt or gunshot
 - Electrocutation
 - Cervical dislocation, decapitation
- Adjunct physical methods:
 - Exsanguination, pithing

➤ Chemical Euthanasia Methods

- Most often used for pet livestock and companion animal species; usually impractical for mass depopulation of livestock
- **Methods**
 - Injectable drugs: barbiturates and barbituric acid derivatives
 - Gas: anesthetic gases, carbon monoxide, carbon dioxide
- Adjunct chemical methods:
 - Potassium chloride, magnesium salts

UNACCEPTABLE Methods

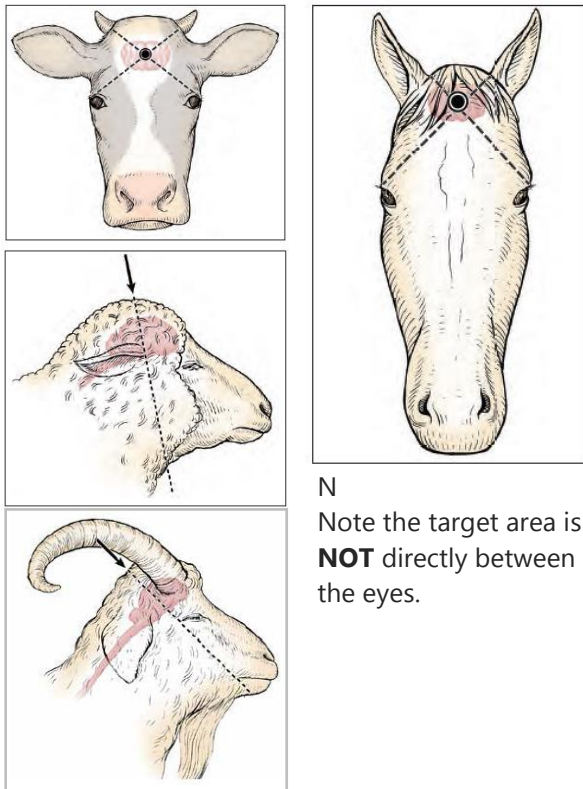
- Manually applied blunt trauma
- Injection of any chemical not labeled for use as a euthanasia agent
- Injection of air into a vein
- Electrocutation with a 120 or 220 volt electrical cord

Confirmation of Death

- **Death must be confirmed on each animal**
- **Parameters**
 - Lack of heartbeat
 - Lack of respiration/breathing
 - Lack of corneal reflex (no movement of the eyelid when the cornea/eye surface is touched lightly)
 - Presence of rigor mortis (stiffening of the body after death)
- **A back-up euthanasia method should be ready!**

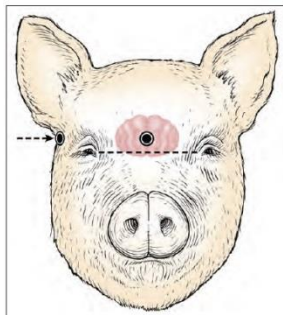
Proper Placement of a Captive Bolt or Gunshot for Livestock Species

> Cattle, Sheep, Goat, Equine



Note the target area is **NOT** directly between the eyes.

> Swine



Note the target area is slightly above the level of the eyes.

Photos from AVMA Guidelines for the Euthanasia of Animals: 2013 Edition and Shearer JK, Ramirez A. Procedures for humane euthanasia. Iowa State University College of Veterinary Medicine. At: <http://vetmed.iastate.edu/humaneuthanasia/en/euthanasia-downloads#Index>

Personnel Performing Euthanasia Activities

> Training

- Animal handling and restraint
- Approved euthanasia method to be used
- Safety issues
- Personal protective equipment required
- Biosecurity measures to follow
- Cleaning and disinfection procedures needed

> Safety

- Be aware of risk of injury based on animal species, size, weight, and temperament

> Psychological Impact

- All parties affected
 - Responders performing euthanasia
 - Animal owners/caretakers, families
 - Community
- Compassion fatigue
- Post-traumatic stress disorder (PTSD)
- Counselors and mental health experts should be available

Additional Resources

- > AVMA Guidelines for the Euthanasia of Animals <https://www.avma.org/KB/Policies/Documents/euthanasia.pdf>
- > FAD PRéP/NAHEMS Guidelines Mass Depopulation and Euthanasia <http://www.cfsph.iastate.edu/pdf/fad-prep-nahems-guidelines-mass-depopulation-and-euthanasia>
- > Procedures for Humane Euthanasia. Iowa State University College of Veterinary Medicine <http://vetmed.iastate.edu/humaneuthanasia/en/euthanasia-downloads#Index>
- > World Organization for Animal Health (OIE) Terrestrial Animal Health Code. Killing of Animals for Disease Control Purposes http://www.oie.int/fileadmin/Home/eng/Health_standards/tahc/2010/en_chapitre_1.7.6.htm

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