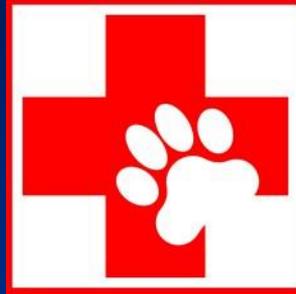


Canine First Aid & CPR Course

HOPE Animal-Assisted Crisis Response

September 24th, 2022



Dr. Heidi Houchen
ER/Critical Care Department
VCA Northwest Veterinary Specialists, Clackamas, OR

Thank You



“Firefighters at Goat Rocks Fire Get Visit From Therapy Dogs”
Centralia Washington Chronicle

Veterinary Care

- Veterinarians and Veterinary Care: Cultivate a close working relationship with your veterinarian
- Preventive Medicine: Follow the maintenance and preventive health care plan approved by your veterinarian.
- Emergency Information:
 - Veterinarian's name & Number
 - Veterinary Emergency Hospitals
 - Veterinary Poison Centers

* ASPCA Poison control: 888 426 4435*



Tools of the Trade

There are several approaches to stocking and carrying a first aid kit:

Many take a “tiered” approach and carry just what they consider the bare essentials while keeping a more comprehensive kit back at their base site or car.



There are variables that may alter what and how much you carry:

The site to which you are being deployed (i.e., the remoteness of the location, terrain, urban vs rural, etc.)



Comprehensive First Aid Kit Contents

- Duct tape (*never to be applied directly onto an animal*)
- Scissors (*general and utility*)
- Rectal thermometer
- Hemostats
- Blanket(s)
- Muzzle/nylons
- Eye wash
- Saline solution
- Stethoscope
- Liquid Dish Detergent — preferably Dawn
- Flash light (batteries)
- Nail trimmers
- Cordless clippers
- Quick stop (*only for use on torn toenails, not on open lacerations*)
- Water
- Latex gloves (*several pair*)
- Gauze sponges
- White adhesive tape
- Cast padding
- Roll Gauze
- Vet wrap (*rolls of both 2" and 3"*)
- Splints (*aluminum w/foam: "SAM"*)
- Non-adherent dressings (*Telfa pads*)
- Antibiotic ointment (*ocular and general*)
- K-Y or petroleum jelly
- Stretcher (*or other table transport surface*)
- Small clean towels (*wound compression*)
- Syringe (*60 cc catheter tip*)
- Multi tool (*i.e., Leatherman, Swiss Army, Gerber*)
- Chlorhexidine scrub/wipes or other topical cleaning agent (** careful not to get in eyes*)
- Leash



Know your pet: Your Pet's Physical Exam

Perform a “Nose to Toes” exam

- eyes, ears, nose
- skin, haircoat, body condition
- heart rate, respiratory rate
- gum color
- foot condition, stance and gait
- temperature
- energy level
- appetite, water intake
- defecation and urination



Normal Physical Exam Parameters

Capillary refill time	Less than 1 second
Mucous membrane color	Pink
Temperature	100 to 102 degrees F
Pulse rate at rest	Dogs 80-120 bpm Cats 180-200 bpm
Respiratory rate	Dog 15-30 bpm Cats 15-30 bpm
Hydration	Pick up skin and release: skin should “snap back” in 1 second

Physical Exam/Primary Survey:

Respiratory system

Normal: 15-30 breathes/minute

Chest wall should expand in and out with minimal effort

Signs of respiratory distress include:

- extended head or neck
- loud or unusual airway sounds
- elbows out to the side of the body when breathing
- elevated respiratory rate (more than 60 breaths per minute when not panting)



Physical Exam/Primary Survey

Cardiovascular system



Physical Exam/Primary Survey

Temperature

- To take a rectal temperature:
- Lubricate a digital thermometer with petroleum jelly
- Gently, slowly insert the thermometer in the rectum approximately 1-2 inches.
- Record the temperature when the thermometer beeps (within 2 minutes).



Physical Exam/Primary Survey

Abdomen

- A quick evaluation of the abdomen includes a visual assessment as well as gentle palpation.
- To detect discomfort, fluid accumulation or distension, the abdomen can be palpated by gently pressing your hands into the abdomen from the ribs back towards the hind limbs.
- Note any tenseness, resistance to palpation, or vocalization from the pet which can indicate pain secondary to abdominal trauma.



Physical Exam/Primary Survey

Nervous system

- Evaluate if the pet seems alert, interactive, and “appropriate” for their surroundings.
- Changes in mental status include seizures, coma, tremors, mental dullness, stupor, restlessness, or hyperexcitability.
- If the nervous system is affected from the “neck down,” a pet may not be able to walk, they may have generalized weakness, or they may have weakness of a single limb.



Physical Exam/Primary Survey

Skin/Integument

- Perform a quick visual assessment.
- Feel for any fractures, lacerations, discontinuities, “crackles” (indicates free air under the skin) as you run your hands over the pet's body.
- Assess hydration: gently pick up the skin over the back and release it quickly



Hydration is critical to a working dog; if dehydration goes unnoticed and untreated, a dog can become seriously ill very quickly.

Physical Exam/Primary Survey

Eyes

- The pupils should be equal in size and respond to light by becoming smaller.
- The whites of the eye (sclera) should have visible blood vessels but should not be diffusely yellow, red, or discolored.
- The eyes should be moist, clear, and free of debris.



Abnormal eyes:

- Squinting
- Excessive blinking
- Unequal pupils
- Blood evident around the pupil or in the sclera of the eye
- Large amount of discharge from the eye

These are potential emergencies and should be addressed immediately.





TRIAGE



The Emergent Physical Exam

- ✓ Is the pet breathing?
- ✓ Does the pet have a pulse?
- ✓ Is the pet unconscious or unresponsive?
- **If the answer to any of these is no, immediate efforts should be made to resuscitate the patient.**



CPCR: Cardiopulmonary Cerebral Resuscitation

Guidelines by the American Heart Association for cardiopulmonary cerebral resuscitation (CPCR) in humans:

- * Focus on continuous, uninterrupted chest compressions (100-120 per minute)!

Simplifying to hands-only CPR

Experts now believe an adult who suddenly collapses due to cardiac arrest has enough air in his lungs and blood during CPR and doesn't need mouth-to-mouth breathing.

If you see someone collapse ...

... have someone call 911.

Position unresponsive adult:

Use an automated external defibrillator if available.

Keep CPR interruptions to a minimum.

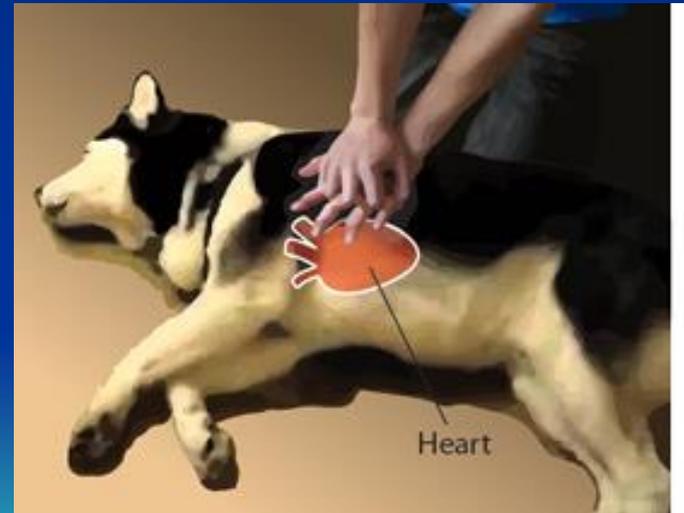


Begin hands-only CPR with straight arms and forceful compressions at about 100 a minute.

Press about 2 inches

Lift hands slightly after each to allow chest to recoil.

Take turns with a bystander until emergency medical services arrive.



CPCR: Cardiopulmonary Cerebral Resuscitation

- * Focus on continuous, uninterrupted chest compressions (100 per minute)!

“Stayin’ Alive” will keep them alive 😊



CPCR: Cardiopulmonary Cerebral Resuscitation

Airway and Breathing:

- ✓ Listen, look, and feel for breathing. If no movement of air is detected, place your hands around the muzzle and give two forceful “snout-to-mouth” breaths @ 1-2 seconds in duration.
- ✓ Evaluate for spontaneous breathing.
- ✓ If still not breathing, intubate and begin ventilating at a rate of **10-12 breaths per minute**. A visual rise in the chest wall followed by a normal relaxation should be seen.
- ✓ If not intubated, give two “snout-to-mouth” breaths per 30 chest compressions



SAFETY



Approach to the Injured Dog – Safety



Approach to the Injured Dog: Restraint



Approach to the Injured Pet : Transport



Cleaning Wounds: Minor Abrasions and Lacerations

- Remove all dirt and debris
- Clean the area around the wound
- Rinse the wound
- Pat the area dry
- Do not introduce anything potentially harmful into the wound
- Prevent further damage



Wounds

Seek veterinary care if:

- Full thickness/gaping
- Signs of infection
 - Redness, swelling, discharge, pain



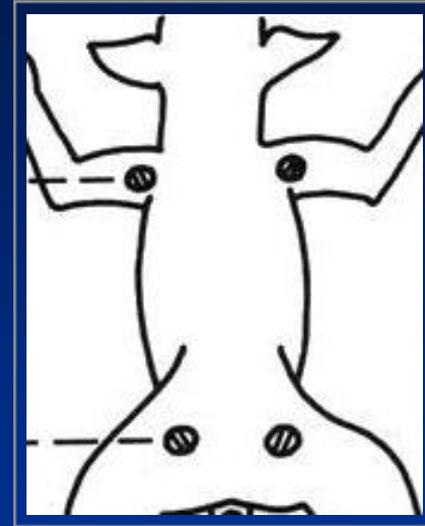
Bleeding Wounds

- Make sure animal is properly restrained and muzzled
- Apply direct pressure
- Do not disturb clot
- If bleeding continues, apply additional material
- If the wound is located on a limb, elevate the limb and apply direct pressure.



Bleeding Wounds

- Pressure can be applied to the arteries that supply blood to the area of the wound
- Front limb: apply to the brachial artery (armpit area)
- Hind limb: apply to the femoral artery (groin area)
- Continue to control bleeding and transport ASAP



Bandages

- Control bleeding
- Protection
- Restrict movement

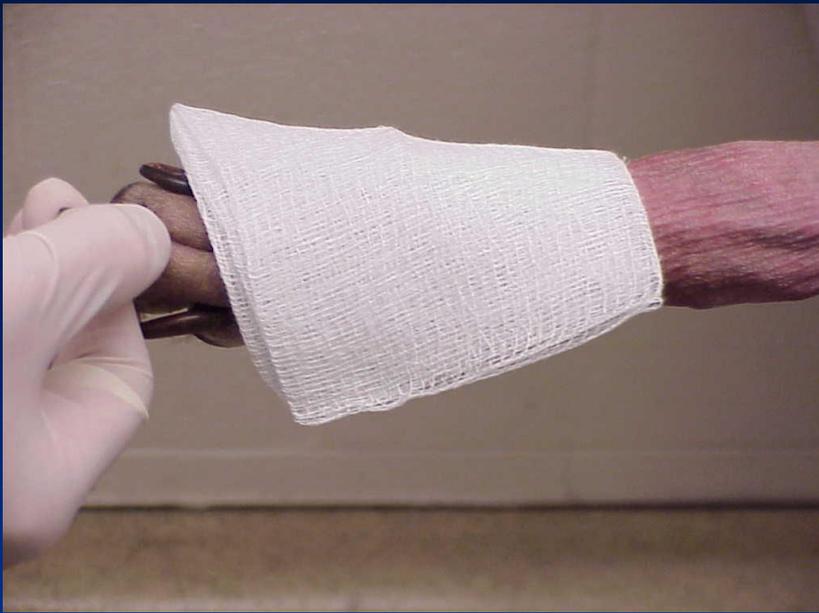




Bandages

- Primary layer = contact layer (telfa pad)
- Secondary layer: absorption (cotton cast padding)
- Tertiary layer: outer protective layer (elastic or adhesive-type tape)
- **NEVER USE ROPES OR STRING TO SECURE A BANDAGE** (especially around the head or neck).





Special First Aid Measure: **Eye Emergencies**

- Eyes: **easily damaged** and only minimal, if any, first aid should be administered.
- If an eye has been displaced from the eye socket or if eyelids are swollen shut: the eye can be kept moist with saline solution, water, or eye ointment (USE ONLY OINTMENTS APPROVED FOR USE IN EYES).

NEVER TRY TO PUSH AN EYEBALL BACK INTO THE EYE SOCKET.

DO NOT REMOVE FOREIGN BODIES MANUALLY OR TRY TO FORCE EYELIDS OPEN.



Choking

- Do not confuse difficulty breathing with choking. Should be recent history of chewing toys/sticks/treats
- Signs of choking: anxiety, pawing at face, coughing
- Oral exam – sweep of mouth but be safe!
- A modified “Heimlich”, brief “push” just behind ribs
- Stay calm



HEAT STROKE / EXHAUSTION

- Dogs > Humans
- Exercising in hot weather
- Lack of acclimatization
- Limited access to water
- Enclosed space: car, kennel
-
- Young dogs - hunting, hiking



HEATSTROKE/HEAT EXHAUSTION

- Dogs dissipate heat through panting. They only “sweat” through glands in their feet.

Heat exhaustion: Exposure of the body to excessive heat.

Heat Stroke: $T > 105$

Clinical signs:

Restlessness, agitation, heavy drooling, bright red gums, weakness, vomiting, diarrhea, disorientation, limbs warm to touch, weak pulses



FIRST AID FOR HEAT STRESS

COOLING MEASURES:

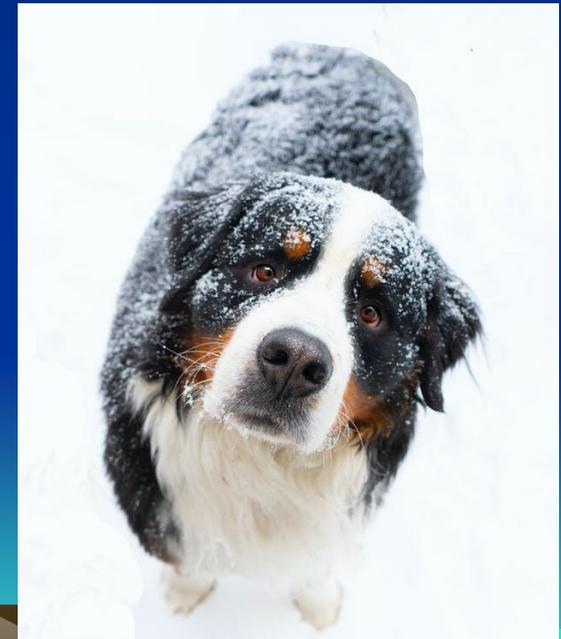
- DO NOT use ice water, ice baths or apply ice to an overheated dog.
- Apply wet, cool towels along the pets chest, abdomen, between legs + around the neck.
- Encourage an overheated dog to drink *but* DO NOT force an overheated dog to drink water.
- Fans ok



HYPOTHERMIA: BODY TEMP <100.5

Clinical signs:

- T < 98 (82-98)
- Shivering
- Weakness/ mental dullness
- Decreased heart rate
- Decreased respiratory rate
- Dilated pupils



FIRST AID MEASURES FOR HYPOTHERMIA

- Wrap in warm blankets or towels.
- If animal is wet + cold, a hair dryer on the warm setting can be used *cautiously*.
- Warm water bottles **wrapped** in towels can be used CAREFULLY
- **DO NOT USE:** heating pads, electric blankets or unwrapped hot water bottles due to a high degree of risk for burn injury to the skin.



Dogs in the Cold and Snow

- Snowy frozen sites involve hazardous conditions including snow, ice, road de-icers.
- Problems at these sites include: hypothermia, dehydration, frostbite, lacerations and abrasions.
- Examine the dog's feet frequently.
- Treat injuries promptly: clean and bandage.



Frostbite / Extremity Injuries Due to Cold & Snow

- Consider the use of booties or pad protectants.
- Monitor the face, ears, feet for frostbite.
- If frostbite is suspected, warm the tissue gently, dry, apply aloe vera cream and bandage (if possible). Seek veterinary medical attention.



Environmental and Site Specific Issues

- Floodwaters House fire and Wildfire Tornado/Hurricane Rural
Try to “know before you go”



Floodwaters



Floodwaters:

Can contain toxic chemicals, viruses, bacteria, sewage, debris

1) Viruses and Bacteria

- Dogs are immune > humans to waterborne diseases
- Prevention is key: Leptospirosis vaccination, Heartworm (* don't forget about mosquitoes!)
- Decontamination

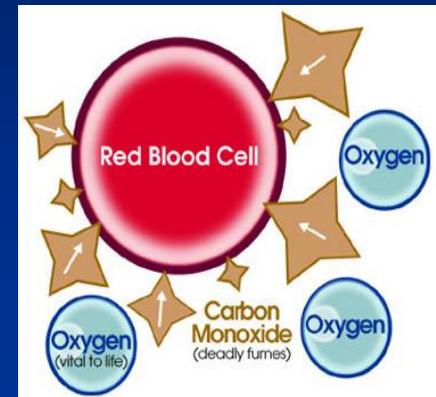
2) Hazards hidden below the surface (sharp objects), Sewage, Mold, Floating trash and food:

Keep dogs away from floodwaters, having fresh/clean water always available and then decontamination

Smoke inhalation



- Assess “ABC”s
- Examine for facial burns, soot in the mouth or nose, coughing or wheezing
- **Cherry red** membranes = Carbon Monoxide
- **Carbon Monoxide Toxicity: Main cause of acute death from smoke inhalation – less oxygen delivered to tissues.**
- Apply oxygen mask: reduce half-life of carbon monoxide



Burns



- Remove from house— assess ABC's
- Examine for burns on feet, face, ears – burns in oral cavity
- Examine burned tissue and apply cool saline or water
- Place wet wrap onto burned tissue and transport animal to a veterinary facility

After the fire ...



After the disaster ...



Treatment of the Poisoned Pet: Decontamination

- Dermal exposure: Bath with either a mild shampoo designed for pets or a diluted, mild dishwashing soap. Lubricate eyes and keep the animal warm and dry afterwards.
- Ocular Exposure: Copiously flush with sterile saline, eye wash, or even tepid water
- Inhalation exposure: Removing the pet from the source of the inhaled toxicant and follow this with administration of supplemental oxygen.



Decontamination

Removing potential contaminants:

- High volume with low pressure water in conjunction with soap
- Water with dishwashing soap (Dawn®): dilute with water
- Soap's high pH neutralizes many chemicals, dissolves some petroleum agents
- Go from head to tail, shoulder to forelegs, back to belly, hips to back legs
- “ Rinse-wash-rinse-repeat” cycle as needed

Potential contamination of Eyes, Ears, Nose, Mouth:

- Avoid getting soap into eyes, nose, and mouth
- Flush gently with OTC Eye rinse such as saline
- If unable to rinse, remove debris from around the eyes with non-alcohol moist towelettes
- Do not apply eye ointments (or any oil-based ointments) : potential to absorb contaminants and damage cornea
- Soaps are not as harmful in ears but in some breeds “wet” ears can predispose to ear issues down the road.



ENVENOMATION

- Triangular head, heat sensing depression “pit”
- Pit viper venom : toxins damage blood vessels, alter clotting, damage tissue
- Dogs more commonly affected – head/limbs



Rural: ENVENOMATION

Clinical signs:

Weakness, high heart rate, drooling
nausea/vomiting, bruising, bleeding from
puncture sites, mouth or nose + pain at
the puncture sites.

What to do?

- Transport ASAP
- Keep limb/bite area below level of heart
- Do not apply ice or tourniquets
- Do not attempt to capture snake
- Do not “slash or suck out” venom
- Do not administer medications – especially NSAIDS!
- Antivenin



Rural: BEE/WASP VENOM

- Bee + wasp venom contain over 30 known toxic components
- 4 types of reactions:
 - *small local
 - *large local
 - *systemic allergic (anaphylactic)
 - *systemic toxic



Just a few words about toxins...



Acetaminophen/ Ibuprofen

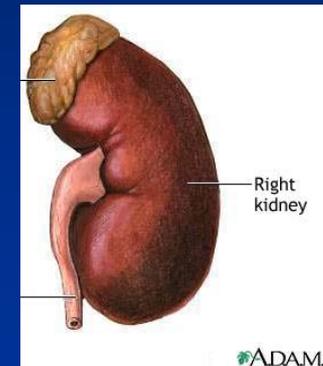
- Aspirin, acetaminophen, ibuprofen can cause ulceration of the stomach, liver and kidney failure, and even death can occur if you give these medications—even in small amounts—to dogs.

- Many *many* other good veterinary pain relief options available: talk to your veterinarians about the most appropriate ones for your dog's age, weight, breed, and activity.



Ethylene Glycol/ Antifreeze

- Ethylene glycol: sweet-tasting, odorless, colorless liquid found in antifreeze.
- Antifreeze : 3 tablespoons can kill a 10 kg dog!
- Vomiting, nausea, and weakness – pets often appear “drunk”
- Treat: **THE CLOCK IS TICKING!** Antidote must be given before toxic metabolites generated – within 8 hours.
- Once the patient produces little or no urine, the prognosis for recovery from ethylene glycol toxicity becomes poor.



Cyanobacteria ...

- Also known as “Blue-Green Algae”
- Some contain “cyanotoxins”
- These toxins affect the nervous system and the liver
- Clinical signs: vomiting, weakness, diarrhea, muscle rigidity, tremors, seizures, paralysisand death within 45 minutes to 24 hours
- NO ANTIDOTE
- Best treatment is PREVENTION: Don't let your dogs swim in standing water with algae blooms



2021 AAHA Working, Assistance, and Therapy Dog Guidelines

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Introduction
The purpose of this document is to provide a comprehensive overview of the current state of working, assistance, and therapy dogs. This document is intended to serve as a resource for veterinarians, dog owners, and the general public. The goal is to provide a clear and concise overview of the current state of working, assistance, and therapy dogs, and to provide a clear and concise overview of the current state of working, assistance, and therapy dogs.

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Dr. Cynthia Otto, DVM, PHD
Chair for the Task Force For AAHA Working, Assistance, and Therapy Dog
Guidelines Fall 2021

*First guidelines of its kind that consolidate recommendations
Great guidelines for best care for these dogs*



Assessment of acute injuries, exposure to environmental toxins and five-year health surveillance of working dogs following 9/11.....



- Cuts
- Abrasions
- Weight loss
- Appetite changes
- Exhaustion
- Dehydration
- Gastrointestinal problems
- Respiratory tract problems
- Eye irritation
-only mild and infrequent health problems in the 5 year-follow up period.
- **Conclusion: acute injuries and illnesses common at the WTC disaster site but long-term health complications were minimal.**

Questions?

