



## K9 TACTICAL EMERGENCY CASUALTY CARE (K9-TECC) GUIDELINES

DATED: 20161213

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*"The Operational K9 – Our Companions, our Teammates, our Defenders – Let's protect those who protect us"*

### K9 TECC - DIRECT THREAT CARE (DTC)

#### GOALS:

1. Accomplish the mission with minimal casualties
2. Maintain tactical superiority
3. Expect to keep the K9 team (handler and / or K9) maximally engaged in neutralizing the existing threat (e.g. active shooter, structural collapse, confined space, HAZMAT, etc.)
4. Maintain team safety by ensuring, when feasible, that the K9 handler is always involved when handling an injured K9.
5. Move the downed K9 team to a safe position and prevent any human or K9 casualty from sustaining additional injuries
6. Treat immediately life-threatening hemorrhage.
7. Minimize public harm

#### PRINCIPLES:

1. The term "*Operational K9*" or *OpK9* refers to the distinct subpopulation of elite civilian working canines (K9s) that operate in high-threat or tactical environments. Examples include K9s that serve federal and local law enforcement (LE) and force protection agencies (e.g. Police, TSA, FBI, ATF, US Marshals Service, US Customs and Border Protection, etc.); and Search-and-Rescue groups (e.g. FEMA USAR, various Sheriff County's SAR K9 Teams, etc.)
2. Establish and maintain *tactical control* and defer in depth medical interventions if engaged in *ongoing direct threat* (e.g. active fire fight, structural collapse, dynamic post-explosive scenario, etc.).
3. *Threat mitigation* techniques will minimize risk to casualties and the providers. These should include techniques and tools for rapid casualty access and egress.
  - a. It is highly recommended that OpK9s operating in a tactical environment wear a body type **harness** to assist in rapid extraction/extrication from the hot zone.
  - b. K9 Handling and Restraint:
    - i. Any injured or stressed K9 is considered unpredictable and may bite, even its own handler.



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- ii. Consider applying a muzzle prior to handling a *conscious* K9 when no contraindications to muzzling exist (e.g. *upper airway obstruction, respiratory complications, severe facial trauma, heat-related injuries, vomiting, comatose, etc.*).
  - iii. Handlers should carry a quick application type muzzle in a known, easily accessible location for expedient handler /team use when and if needed.
- c. It is strongly urged to have *at least two* alternate team members or designated first responders (EMS, Fire, etc.) trained on basic K9 handling techniques for situations when the handler is down.
  - i. When feasible, these personnel should have a well-established and positive rapport with OpK9s they support.
  - ii. It is recommended that only *select* members are granted this level of rapport to prevent decreasing the reliability of the K9 asset.
- d. Threat mitigation to rescuer and casualty ALWAYS takes priority.
  - i. DO NOT delay extraction time to “safe” zone for the sole purpose of applying a muzzle on an injured K9
  - ii. Handler / Responder must weigh the benefits and risks of muzzling the K9 based upon the likelihood of a re-emerging threat.
  - iii. Consider that in situations where a threat reappears, a muzzled K9 will no longer be able to protect the downed handler or continue the mission.
- 4. Triage should be deferred to a later phase of care. Prioritization for extraction is based on available resources and the tactical/operational situation.
- 5. Limited first aid at the “Point of Injury” (POI) is warranted
- 6. Consider deferring airway management until Indirect Threat Care (ITC) if appropriate based on the tactical situation
- 7. Consider hemorrhage control for life-threatening bleeding in an injured K9 if *tactically feasible*
  - a. **Direct pressure** is the primary “medical” intervention to be *considered* during DTC for the K9 casualty.
  - b. Consider securing dressing material in place with application of a circumferential pressure bandage during DTC as tactically feasible.



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- c. Consider an **improvised tourniquet (ITQ)** application as a **last resort** for extremity or tail wounds involving amputations where hemorrhage is not controlled by direct pressure alone.
- 8. Consider quickly placing or allowing the injured K9 to remain in a *position of comfort* that protects the airway, permits ease of respiration, and is least stressful.
  - a. Depending upon the situation the position of comfort in most K9s is **sternal** (e.g. prone) recumbency. They may also prefer to sit or stand which is acceptable as long as it is amenable to the tactical situation.

### DTC / HOT ZONE - K9 GUIDELINES:

- 1. Mitigate any threat and move to a safer position (*e.g. Return fire, utilize less lethal technology, assume an overwhelming force posture, extraction from immediate structural collapse / fire, stop the burning process, etc.*).
- 2. Keep the K9 casualty (or K9 team) **ENGAGED** in any tactical operation if appropriate and until threat is neutralized.
- 3. *K9 Casualty Extraction*: The handler/responder should secure and extract an injured K9 from the hot zone to a safe location in a way that does not further jeopardize human life (self or team):
  - a. *Avoid* exposing themselves or other team members to an imminent threat for the sole reason of extracting an injured OpK9.
  - b. *Engage* and *neutralize* the threat or ensure the active threat is neutralized prior to rendering aid or extracting the OpK9 casualty.
  - c. When the handler/responder is already behind cover and separated from an injured K9, they should remain under cover and attempt to call and direct the K9 to their location as some injured OpK9s may remain ambulatory.
- 4. *K9 Handler Down*:
  - a. When the K9 Handler is injured and team members and or responders are not close to assist, then the handler (if possible) should:
    - i. Engage the threat and immediately apply self-aid when feasible
    - ii. If hostile threat is neutralized, secure the OpK9 by any quick expedient method. A loose, aggressive or anxious K9 may serve a threat to rescuers and prevent extraction or provision of medical aid to the downed handler.
  - b. If the K9 team is *down* and *unresponsive*, or is *responsive* but cannot move, the scene commander or team leader should weigh the risks and benefits of a rescue attempt in terms of manpower, likelihood of success, and mission sustainment.
    - i. Consider remote medical assessment techniques.



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- ii. Recognize that threats are **dynamic** and may be ongoing, requiring continuous threat assessments.
- 5. *Stop Life Threatening External Hemorrhage* if tactically feasible:
  - a. Remember, the primary goal during DTC is to quickly remove the K9 casualty and handler/rescuer away from the direct imminent threat (e.g. “Get off the X”)
    - i. Consider moving the K9 casualty to safety (behind cover) prior to applying direct pressure or TQ if the situation allows.
  - b. **DIRECT PRESSURE:**
    - i. Remains the primary tenet of controlling external hemorrhage in K9s under DTC.
  - c. **WOUND PACKING and HEMOSTATIC AGENTS**
    - i. Often not tactically feasible to perform appropriately under DTC
    - ii. May consider *loosely* packing (e.g. wadding or stuffing) dressing into the wound and then securing with a *quick* application pressure wrap as situation permits.
  - d. **TOURNIQUETS (TQ):**
    - i. **Not** considered first-line for controlling extremity hemorrhage in K9s since, most human commercial, windlass TQs (e.g. C-A-T®, SOFT-T, etc.) do not work effectively on K9 extremities
    - ii. Consider TQ application in K9s under the following conditions:
      - a) Extremity hemorrhage appears **life threatening** (e.g. K9 has suffered a **complete traumatic limb or tail amputation**), AND
      - b) Bleeding remains **refractory** to other methods of hemostasis (e.g. *direct pressure, pressure dressing, etc.*), AND
      - c) The anatomical site is **amenable** to TQ application (e.g. *mainly limbs and tail wounds*)
    - iii. When a TQ is warranted (as per under *Section 4.d.ii.*), consider applying an **Improvised TQ (ITQ)** or wide, elastic, non-windlass TQ (e.g. SWAT-T®)
      - a) ITQs may be constructed from material such as a cravat, long sleeve shirt, or back pack strap (**at least 3.8 cm or 1.5 inches** wide)
      - b) A stick, small metal bar or even a long blade knife (firmly seated in its sheath) may be used as the torsion (e.g. windlass) device
    - iv. Apply the ITQ as proximal (*high on the limb or tail*) as possible or **at least 2 – 3 inches** above the wound.
    - v. **DO NOT** apply ITQ directly over a joint or wound.
    - vi. Tighten until *cessation of bleeding* AND *loss of palpable distal pulses*. Optimal use of limb TQs must result in **both**
      - a) Cessation of bleeding, AND
      - b) Loss of distal pulses in the extremity



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- vii. **EXPOSE & CLEARLY MARK** all TQ sites with an indelible marker;
  - a) Indicate **Date** and **Time** of application.
  - b) Do not cover a TQ.
- e. **IMMOBILIZE** and **ELEVATE** the area when practical and feasible. Keep the K9 as calm as possible to avoid inadvertent elevations in arterial blood pressure.
- f. *Consider* quickly placing the K9 casualty in position to protect airway if tactically feasible.

### DTC Skill Sets:

1. Move to Safety
2. Make "Safe" (e.g. muzzle, restrain, etc.) the K9 as warranted
3. Massive Hemorrhage Control
  - a. Direct pressure
  - b. Application of *Improvised* TQ as last resort for distal extremity or tail hemorrhage
4. Casualty movement and extraction
5. Rapid placement in recover position



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### K9 TECC - INDIRECT THREAT CARE (ITC) / WARM ZONE

#### GOALS:

1. Goals 1-6 as above with DTC care
2. Stabilize the K9 casualty as required to permit safe extraction to dedicated treatment sector or medical evacuation assets

#### PRINCIPLES:

1. Maintain *tactical control* and complete the overall mission.
2. As applicable, ensure safety of both first responders and K9 casualties by always:
  - a. Always keeping the K9 handler involved when handling or treating an injured K9.
  - b. Consider muzzling the K9 when no contraindications to applying muzzle exist (*e.g. respiratory complications, heat-related injuries, vomiting, comatose, etc.*) and if not performed during DTC.
  - c. Consider early use of chemical restraint for injured K9s that are fractious and potentially aggressive due to pain, stress, and / or fear.
  - d. Medical providers with the likelihood for treating injured K9s should be trained in safe K9 handling techniques.
3. Conduct *dedicated patient assessment* and initiate appropriate life-saving interventions as outlined in the following ITC guidelines.
4. DO NOT DELAY casualty extraction/evacuation for non-lifesaving interventions.
5. Consider establishing a *Casualty Collection Point* if multiple casualties are encountered.
6. Unless in a fixed casualty collection point, triage in this phase of care should be limited to the following categories:
  - a. Uninjured
  - b. Deceased / expectant
  - c. All others
7. Establish *communication* with the tactical and/or command element and request or verify initiation of casualty extraction/evacuation.
8. Prepare casualties for extraction and document care rendered for continuity of care purposes.



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### K9 - ITC / WARM ZONE GUIDELINES:

#### 1. RESTRAINT: Properly restrain K9 per Guidelines described under DTC.

- a. Consider the K9's mouth and teeth as equivalent to a law enforcement officer's weapon and, therefore, it should be made safe if the K9 is injured and / or the K9 has an altered mental status.
- b. Secure once the threat is neutralized.
- c. Consider early use of chemical restraint for injured K9s that are fractious and potentially aggressive due to pain, stress, and / or fear.
  - i. Follow local veterinary-approved protocols or refer to in the *K9 TECC Supplement* (<http://www.k9tecc.org/resources.html>) for chemical restraint protocols

#### 2. BLEEDING (REASSESS FOR MASSIVE HEMORRHAGE):

- a. Reassess interventions applied for Massive Hemorrhage performed during DTC.
- b. Assess for and control any other unrecognized sources of major hemorrhage.
- c. DIRECT PRESSURE:
  - i. If not already done, apply **direct pressure** and pressure dressing with **deep wound packing** to control life-threatening external hemorrhage.
- d. WOUND PACKING
  - i. Consider to control junctional hemorrhage (inguinal or axillary) or other deep compressible hemorrhaging wounds if the bleeding site is not controlled by direct pressure application alone.
    - a) Performed on major junctional bleeders and upper extremity wounds above the elbow and stifle (e.g. triceps, caudal thighs, etc.)
    - b) Not very effective or necessary on most K9 *distal* limb wounds (below elbow and knee/stifle) due to lack of significant musculature
  - ii. Impregnated hemostatic dressing or standard roll gauze may be used for wound packing.
    - a) Topical hemostatic agents are to be applied in the form of an impregnated *gauze dressing*. Apply in accordance with manufacturer's guidelines.
    - b) DO NOT apply **powdered or granular forms** of hemostatic agents directly to the wound.
  - iii. Refer to *K9 TECC Supplement or local veterinary-approved protocols* for guidance on deep wound packing for K9s (e.g. *types of material, wound packing protocol, etc.*)





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e. **TOURNIQUET (TQ):**

- i. Reassess all TQs that were applied during previous phases of care by exposing the injury and determining if a TQ is needed
- ii. TQs applied hastily during DTC phase that are determined to be both *necessary* and *effective* in controlling hemorrhage should remain in place if the casualty can be rapidly evacuated to definitive veterinary care.
- iii. **Consider** conversion to pressure or hemostatic dressing and bandage if:
  - a) TQ is deemed *ineffective* for controlling hemorrhage
  - b) Bleeding can be controlled by other methods such as with *direct pressure, pressure bandage, and or deep wound packing*
  - c) If any potential delay in evacuation to care (**> 2 h**), expose the wound fully and reassess need for TQ around the 2-hour time point
  - d) *Refer to K9 TECC Supplement for guidance on TQ conversion*
- iv. Before releasing any TQ on a casualty that has received IV fluid resuscitation for hemorrhagic shock, ensure a positive response to resuscitation efforts (*e.g. improving mentation and peripheral femoral pulses normal in character*)
- v. When time and the tactical situation permit, a **distal pulse** check should be accomplished on any extremity where a TQ remains in place. If a distal pulse or visual hemorrhage is still present, to eliminate hemorrhage and distal pulse, consider:
  - a) Additional tightening of the TQ, and / or
  - b) Use of a second juxtaposed TQ, side by side & proximal to the first.
- vi. Reasons to consider **NOT** removing TQ include:
  - a) The distal extremity or tail is a complete amputation.
  - b) The K9 casualty remains in Shock or is suffering TBI.
  - c) The TQ has been on for **> 6 hours**.
  - d) Medical treatment facility is **within 2 hours** after time of application.
  - e) Considered inadvisable to transition to other hemorrhage control methods based off tactical or medical situation.

vii. **EXPOSE AND CLEARLY MARK** all TQ sites with the time of TQ application.

- f. **JUNCTIONAL TOURNIQUETS:** Consider using a junctional TQ for difficult to control junctional hemorrhages (*e.g., axilla and inguinal placements*) in K9s. *Note: The Abdominal Aortic Junctional TQ (e.g. AAJT™) has not been evaluated in K9s, but has been evaluated and shown effective in swine models.*
- g. **IMMOBILIZE** (*e.g. splint*) and **ELEVATE** the injured area whenever feasible
- h. **REASSESS** frequently for evidence of rebleeding





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### 3. AIRWAY MANAGEMENT:

- a. **Unconscious** casualty WITHOUT airway obstruction:
  - i. Place the K9 casualty in the recovery position, this typically in a sternal (prone) position.
  - ii. Extend the head and neck into a straight in-line position
  - iii. Physically open the mouth and pull tongue forward to help open the airway and allow examination of the mouth & pharyngolaryngeal area
    - a) Consider using a roll of tape or syringe tube casing (w/out plunger) as a mouth gag to keep the mouth open
- b. K9 Casualty WITH airway obstruction or impending airway obstruction:
  - i. Clinical Signs: Pawing at mouth, gagging, excessive drooling, frequent swallowing motions, extended head and neck, elbows and upper legs held out from the chest (e.g. "tripod position"), reluctant to lie down, and cyanosis (bluish gums) as a late sign.
  - ii. Evaluation:
    - a) It is not advised to stick your hand into the mouth of a conscious K9's mouth. Consider team safety for not suffering bite wounds:
      - 1) Use a leash, rope or roll gauze looped behind the upper Canine teeth pry the mouth open.
      - 2) If in your scope of practice, consider sedating the K9 IAW with **local veterinary-approved protocols or refer to in the K9 TECC Supplement for chemical restraint recommendations.**
    - b) Position the K9 in any position that allows the K9 to breath with minimal restriction of air flow and protects the airway, even if that involves a sitting position
    - c) Observe for bilateral chest rise and fall
    - d) Listen for labored or noisy breathing (e.g. stridor, stertor, etc.)
    - e) Palpate throat and trachea
    - f) Open airway as described above in *para. 3.a.ii*
  - iii. Intervention:
    - a) For patients with an observable obstruction. Quickly remove any obvious **moveable** foreign material from the oropharyngolaryngeal area.
    - b) BE CAREFUL not to push the object down further into the airway
      - 1) If foreign material is not readily visible, **DO NOT** perform blind 2-Finger Sweep of the mouth and pharynx.



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- c) Consider *abdominal thrusts* (e.g. *Heimlich maneuver*) for **moveable** foreign bodies. **NOTE:** NEVER attempt abdominal thrusts if sharp objects such as sticks or bones are present.
  - d) If attempts to clear or remove the object or obstruction from the airway have failed and the K9 collapses, consider initiating:
    - 1) Direct visualization and removal with Magill Forceps or other similar instrument
    - 2) Chest compressions (100 – 120 compressions / minute)
    - 3) Artificial ventilation via Bag-Mask-Valve technique or *Mouth to Snout* at a rate of 8 – 10 breaths / min
    - 4) If within scope of practice and training, pursue *advanced airway techniques* (e.g. *needle or surgical cricothyrotomy*)
  - e) PARTIAL AIRWAY OBSTRUCTIONS (*where some air is able to flow into the lungs*) transport ASAP and continuously monitor for progression to complete airway obstruction. DO NOT delay on-scene time.
- c. ADVANCED AIRWAY TECHNIQUES: If previous measures are unsuccessful at clearing the airway, the provider is properly trained, and the intervention is within the provider's scope of practice then perform:
- i. OROTRACHEAL (OTT) / ENDOTRACHEAL INTUBATION (ETT):
    - a) Preferred technique in K9s for gaining patent airway due to ease of ETT placement as compared to humans
    - b) To facilitate ETT placement ensure head and neck are extended (not flexed) and in-line. This will allow a direct "line of site" or path from the oral cavity, through the pharyngolaryngeal area, and into the trachea.
    - c) A laryngoscope is not often required (but helpful) for K9 OTT/ETT
    - d) Common sizes for 25 – 30 kg K9 are: 9 – 11 mm internal diameter
  - ii. BLIND INSERTION AIRWAY DEVICE (BIAD):
    - a) Not considered first-line; ETT placement is preferred; Consider if ETT is not available.
    - b) Consider placing a 37 – 41 Fr Comitube (Tyco, Kendall-Sheridan Corporation).
    - c) King LT's and I-Gel® have not been clinically evaluated in K9s; LMA's often become dislodged during movement.



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- iii. NEEDLE OR SURGICAL CRICOTHYROTOMY
  - a) Use the same procedure as described for humans.
  - b) Use chemical restraint (*IAW with approved-veterinary guidelines or K9 TECC Supplement*) and local lidocaine if conscious.
- iv. NEEDLE OR SURGICAL TRACHEOSTOMY
  - a) Not recommended over cricothyrotomy considering it is *more invasive, time consuming, and possesses a higher rate of complications* as compared to cricothyrotomy.
  - b) Use chemical restraint (*See K9 TECC Supplement or local veterinary approved protocols*) and local lidocaine if conscious.
- v. **NOTE:** If Cervical Spinal Cord Injury is suspected, try and maintain the Head and Neck in a neutral, in-line position; avoid excessive flexion or extension of the neck.
- d. Consider administering oxygen supplementation if available
- e. If no spontaneous ventilations provide artificial respirations at **8 – 10 breaths / min**
- f. Monitor **SpO<sub>2</sub>%** (if available); Normal values **> 94%** on room / atmospheric air
  - i. Pulse Oximetry probe placement in order of preference: tongue (if unconscious), lip, ear pinna, prepuce (male) or vulva (female).

### 4. RESPIRATION / BREATHING:

- a. All **OPEN AND/OR SUCKING CHEST** wounds should be treated by immediately applying gloved hand over wound, followed by a vented or non-vented occlusive seal to cover the defect.
  - i. Rapidly **clip hair** (if feasible, not necessary) around the wound, to allow the seal to become airtight (*clipping is often not a necessary step due to elasticity of K9 skin*)
  - ii. If hair clippers are not available place water soluble lube (or other water soluble media, e.g. blood) on the underside of the chest seal to form an occlusive seal between the skin and the chest seal;
  - iii. Secure in place on all four-sides (vented or non-vented) with adhesive tape.
- b. Monitor the casualty for the potential development of a subsequent **tension pneumothorax (T-PTX)**.



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- c. Consider the presence of a T-PTX in the setting of known or suspected thoracic trauma AND with the following clinical signs include *Progressive respiratory distress* and *increasing Respiratory Rate* with:
  - i. Rapid, shallow and open-mouth breathing,
  - ii. Acting agitated or unable to get comfortable,
  - iii. Head and neck extended + elbows and upper front legs held out away from body (e.g. tripod position),
  - iv. Asynchronous breathing pattern (*e.g. abdomen and chest move in opposite directions during inspiration*),
  - v. Barrel-chested with minimal chest excursion – more abdominal component
  - vi. Lack of drive and response to even basic commands, unwillingness to move,
  - vii. Reluctant to lie down,
  - viii. Cyanotic (blue) gums (late finding),
  - ix. Collapse.
- d. If T-PTX is present or develops, consider:
  - i. **“BURPING”** the occlusive chest seal, AND / OR
  - ii. **Needle decompression** (if within scope of practice and trained)
    - a) Performed with a 14-gauge, 2 to 3.25 inch (8 cm) needle/catheter.
    - b) Insert in the **7<sup>th</sup> to 9<sup>th</sup> intercostal space** midway up the lateral thoracic wall.
    - c) Ensure that the needle enters **cranial (towards the head) of the rib**
    - d) Insert the needle **perpendicular** to the chest wall
    - e) Once in the pleural space direct the needle ventral (towards the sternum) and the lay the needle against the thoracic wall.
      - 1) Ensure the bevel of the needle faces away from the inner thoracic wall.
    - f) Once air is evacuated, remove both the stylet and catheter. DO NOT leave in place.
      - 1) The increased elasticity of the K9's skin prevents adequate securing of the catheter and or stylet and, thus, increases the risk of further lung trauma if the stylet/catheter is left in place.
    - g) Consider decompressing the chest on **BOTH SIDES (LEFT & RIGHT)**; *K9s have a fenestrated /communicating mediastinum that allows air to infiltrate both sides.*



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- e. **PENETRATING** thoracic foreign body: (e.g., knife, arrow, rebar, etc.)
  - i. If still in place - **DO NOT REMOVE** but **SECURE** object in-place. Only consider removing impaled object if it:
    - a) Interferes with establishing a patent airway or performing CPR;
    - b) Cannot be adequately secured in place for evac/transport; or
    - c) Cannot be removed from the scene or transported with the K9 (e.g. *K9 impaled on rebar sticking out from a concrete flooring*).
  - ii. Place occlusive seal (e.g. saran wrap, MRE wrapper, commercial chest seal, etc.) around the impaled object and seal edges of occlusive seal with adhesive tape.
  - iii. Stabilize and secure the foreign body (e.g. bandaging) to prevent further injury.
  - iv. Perform needle decompression as needed if T-PTX develops.
  - v. Transport (**injury up**) ASAP with no pressure on penetrating object.

### 5. CIRCULATION [INTRAVENOUS (IV) / INTEROSSEOUS (IO) ACCESS]:

- a. If evacuation to definitive care is **> 30 minutes**, consider placing at least an 18-gauge IV catheter (or larger bore) in at least one peripheral vein (*the cephalic vein in either front leg is preferred*).
- b. If resuscitation is required and IV access is not obtainable, use the IO route (*per agency protocol and training*). Recommended IO locations in the K9 (*in order of preference*):
  - i. Flat anteromedial surface of the **proximal tibia** (1 to 2 cm distal to the tibial tuberosity; *preferred route* due to ease of placement and location of landmark. 15 to 25 mm length IO catheters often work well.
  - ii. Greater tubercle of the **humerus**. (*Similar insertion technique as humans*). Often require an adult length IO catheter.

### 6. TRANEXAMIC ACID (TXA) OR EPSILON AMINOCAPROIC ACID (EACA):

- a. If casualty is anticipated to need significant blood transfusion (e.g. *presents with hemorrhagic shock, one or more amputations, penetrating torso trauma, or evidence of severe bleeding*) consider administration of one of the following as soon as possible and **NO LATER than 3 hours** post-injury:
  - i. 10 mg/kg TXA in 100 mL NS or LR IV slowly over 15 min.
  - ii. 150 mg/kg EACA in 100 mL NS or LR slowly over 15 min; may continue as an infusion at 15 – 20 mg/kg/h for 8 h.
- b. **NOTE:** *Evidence supporting the appropriate dosage of TXA or EACA in K9s is currently limited. Current studies being conducted.*



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### 7. FLUID RESUSCITATION:

- a. Assess for hemorrhagic shock
  - i. Altered mental status (in the absence of head injury) and weak/absent peripheral **femoral** pulses are the best field indicators of shock.
  - ii. Abnormal vital signs:
    - a) Systolic Blood Pressure (SBP) < 90 mm Hg and Heart Rate > 140 bpm, or a shock index > 1 (HR/SBP).
    - b) *Refer to K9 TECC Supplement or K9 TECC resources page <http://www.k9tecc.org/resources.html> for expected changes in K9 vital parameters.*
- c. **NOT in shock:**
  - i. No IV fluids necessary.
  - ii. Per os (PO) fluids permissible if:
    - a) Conscious, able to swallow, and has no injury requiring potential surgical intervention, AND
    - b) Confirmed long delay in evacuation to care.
- d. If **IN SHOCK**
  - i. **GOAL** is to maintain perfusion, not necessarily restore to “Normal Perfusion Values”.
  - ii. Administer appropriate IV fluid bolus and re-assess casualty’s perfusion parameters (*IAW with local veterinary-approved protocols or refer to in the K9 TECC Supplement for Fluid Resuscitation Protocols*).
    - a) Repeat bolus as appropriate based upon clinical response.
  - iii. If K9-specific blood products are available, consider resuscitation with plasma (FFP) and packed red blood cells (PRBCs) in a 1:1 ratio.
  - iv. If a K9 casualty with an *altered mental status* due to **suspected TBI** has a weak or absent peripheral pulse, resuscitate as necessary to maintain a desired SBP of ≥ 90 mmHg or a strong palpable **femoral** pulse. Avoid restoring SBP > 120 mmHg with suspected TBI.

### 8. HYPOTHERMIA:

- a. Minimize casualty’s exposure to the cold elements.
- b. Move patient from cold environment / element to warm shelter.
- c. Transport patient in a horizontal / sternal position.
- d. Remove any wet outer wear (e.g. vests, harnesses, booties, etc.).
- e. *GENTLY* pat dry any wet tissues or hair coat. Avoid vigorous rubbing.
- f. Place the casualty onto an insulated surface as soon as possible.



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- g. Cover the casualty with a commercial warming device, dry blankets, poncho liners, sleeping bags, or anything that retains heat and keeps the casualty dry.
- h. ALWAYS handle markedly hypothermic patients (< 86°F or 30°C) gently to avoid triggering cardiac dysrhythmias.
- i. Primary efforts should concentrate on treating and preventing hypothermia (as described above) and transporting patient gently to a medical care facility.

### 9. OCULAR (EYE) TRAUMA:

- a. Consider flushing the affected eye and adjacent tissues with copious amounts of sterile saline or ophthalmic rinse.
- b. Non-Penetrating injuries:
  - i. Protect the eye from further injury.
  - ii. If available, place a commercial or improvised (*e.g. bucket with bottom cut out*) Elizabethan-collar on the K9 to prevent self-trauma.
  - iii. Consider covering the uninjured eye to reduce the level of anxiety as well as reduce “sympathetic” movement of the injured eye.
- c. Penetrating Eye Trauma:
  - i. If a penetrating eye injury is noted or suspected, protect the eye from external pressure and stabilize any impaled object to prevent movement during extraction.
- d. Refer to K9 TECC Supplement or local veterinary-approved guidelines under “**Ocular Trauma**” for further guidance.

### 10. REASSESS CASUALTY:

- a. Perform secondary survey (head-to-**tail** full body examination) checking for additional injuries. Reassessment includes:
  - i. **Inspection** (visual observation),
  - ii. **Palpation** (hands-on assessment), and
  - iii. **Auscultation** (auditory assessment)
- b. Consider *Focused Assessment* of identified localized injured areas.
- c. Reassess *Vital Parameters* (heart rate, resp. rate, pulse quality, capillary refill, etc.)





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### 11. WOUNDS AND FRACTURES

- a. **IMPORTANT: Handle** an injured K9 with a fracture with extreme care and proper restraint. Consider administering chemical restraint and analgesia before manipulating the fractured site (*Refer to K9 TECC Supplement for Drug Protocols*).
- b. Inspect for and dress additional Closed / Open wounds and fractures:
  - i. Consider splinting known/suspected fractures if time and resources permit.
  - ii. Rapidly identify and attend to *open abdominal* wounds.
- c. *Refer to K9 TECC Supplement or follow local veterinary-approved guidelines for Wound and Fracture Management Protocols*

### 12. ANALGESIA / SEDATION:

- a. Provide adequate analgesia as necessary for the injured K9.
- b. For K9s **ABLE** to continue mission:
  - i. **DO NOT** use any human-derived non-steroidal anti-inflammatory medications (*e.g. aspirin, ibuprofen, naproxen, ketorolac, etc.*) in K9s
  - ii. When available consider: Tramadol: 3 – 5 mg/kg q 6 – 8 h PO (*75 – 125 mg for a 25 kg K9*)
  - iii. Use caution when attempting to administer ORAL medications to an injured, painful K9.
- c. For K9s **UNABLE** to continue mission:
  - i. Consider narcotic (opiate) medications.
    - a) IV, IO, or IM pure mu-agonist opiates (*e.g. morphine, fentanyl, hydromorphone, etc.*) are the most effective.
    - b) **NOTE**: Oral opiates are not effective while, intranasal / transmucosal fentanyl (*e.g. lozenges*) have not been fully evaluated in K9s.
  - ii. Consider Ketamine (at analgesic dosages) for moderate to severe pain.
    - a) Ketamine must be combined with a benzodiazepine (*e.g. midazolam, diazepam or lorazepam*) in K9s.
  - iii. Consider adjunct administration of anti-emetic medications (*e.g. ondansetron*).
- d. *Refer K9 TECC Supplement or local veterinary-approved guidelines for Analgesia Protocols*



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### 13. ANTIBIOTICS:

- a. Consider initiating antibiotic administration for K9 casualties with open wounds/fractures and penetrating eye injury when evacuation to definitive care is significantly delayed or infeasible.
- b. This is generally determined in the mission planning phase and requires **medical oversight**.
- c. If antibiotics are warranted select either a cephalosporin or potentiated penicillin [e.g. *amoxicillin-clavulanic acid*, *cephalexin (Keflex)*, etc.].
- d. *NOTE: Ertapenem - Currently there is no pharmacokinetic data on this antibiotic use in K9s. Due to the very limited information available regarding its use in K9s, it is considered an investigational treatment. If this is the only antibiotic available, then suggested dosage is to use the human pediatric dose of 15 mg/kg IV or IM every 12 hours, not to exceed a daily dosage of 1 gram. (E.g. 25 kg OpK9 = 375 mg)*

### 14. BURNS:

- a. **IMPORTANT:** Analgesia in accordance with K9 TECC guidelines should be considered for all K9 burn casualties.
- b. Consider burns may not be readily evident in K9s as their hair coat covers cutaneous / skin lesions effectively.
  - i. Hot liquids seep under hair coat and, therefore, only an area wet, oily or greasy hair may be present.
  - ii. A K9 often reacts to a painful burn by displaying agitation and continually biting, licking, or rubbing the affected area. Look for these behavioral signs to help support any suspicion that a K9 may have been burned.
- c. Immediately remove the K9 from the burning source and stop the burning process.
  - i. Remove all harnesses, collars, vest, booties, etc. Avoid pulling away any items that are melted and have stuck to the K9's skin.
- d. Consider Inhalational – Airway Injury in any K9 trapped in a confined fire environment and with any one of the following clinical signs: *carbonaceous sputum, singed facial or nasal hairs, facial burns, oropharyngeal edema, vocal changes (stridorous), or altered mental status*.
  - i. FACIAL BURNS, especially those that occur in closed spaces, may be associated with **inhalation** and **corneal** injuries.
  - ii. Aggressively monitor airway status and oxygen saturation (SpO<sub>2</sub>) in such patients and consider early definitive airway management for respiratory distress or oxygen desaturation. *\*\*Consider (SpO<sub>2</sub>) may appear normal as most devices do not differentiate between carbon monoxide and oxyhemoglobin.*
- e. Consider treating ocular / corneal injuries (e.g. *flushing eyes, applying topical non-preserved lubricant, etc.*)



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- f. SMOKE INHALATION, particularly in a confined space, may be associated with significant carbon monoxide (CO) and cyanide toxicity (CN). Patients with signs of significant smoke inhalation plus:
  - i. Significant symptoms of carbon monoxide toxicity should be treated with **high flow oxygen** if available.
  - ii. Significant symptoms of cyanide toxicity should be considered candidates for **cyanide antidote** administration (if available) (*See K9 TECC Supplement for Cyanide Antidote options*)
- g. Estimate total body surface area (TBSA) burned to the nearest 10% using the appropriate locally approved burn TBSA estimate calculation (*See K9 TECC Supplement or go to [www.k9tecc.org/resources](http://www.k9tecc.org/resources) for K9 Casualty Care Card*)
- h. **Local** and **Minor burns** (superficial or partial thickness < 15 % TBSA): Consider cooling burned skin with cool to cold water (*sterile fluid if available*) within 20 minutes of burn incident.
  - i. Avoid actively cooling (i.e. irrigation, application of ice, etc.) burns > 15% TBSA to prevent inducing hypothermia.
  - ii. Cover the burn area with **dry, sterile** dressings and initiate measures to prevent heat loss and hypothermia once cool irrigation is completed (*if performed*).
- i. For **Moderate** to **Severe** burns > 20% TBSA or any **Full-Thickness** (3<sup>rd</sup>/4<sup>th</sup> degree):
  - i. Fluid resuscitation should be initiated as soon as IV/IO access is established (*Refer to K9 TECC Supplement under "Burns"*).
  - ii. If hemorrhagic shock is also present, resuscitation for hemorrhagic shock takes precedence over resuscitation for burn shock (*Refer to K9 TECC Supplement under "Shock - Fluid Resuscitation" or locally approved veterinary guidelines*).
  - iii. DO NOT actively cool by applying ice and / or water to burned area.
  - iv. Cover the burn area with **dry, sterile** dressings and initiate measures to prevent heat loss and hypothermia once cool irrigation is completed (*if performed*).
  - v. Aggressively act to **prevent hypothermia** for burns > 20% TBSA
- j. All previously described casualty care interventions can be performed on or through burned skin in a burn casualty.



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### 15. MONITORING:

- a. Periodically, obtain and record vital signs (*temperature, pulse, respiration, pulse quality, mucous membrane color, capillary refill time, mentation*)
- b. If available electronically monitor:
  - i. Pulse oximetry (SpO<sub>2</sub>) - Tongue (*if unconscious*), lip, ear pinna, prepuce or vulva, rectum (*if rectal probe available*)
  - ii. ECG
  - iii. ETCO<sub>2</sub> (if intubated)
  - iv. Non-Invasive Blood pressure

### 16. PREPARE K9 CASUALTY FOR MOVEMENT:

- a. Consider environmental factors for safe and expeditious evacuation.
- b. Secure casualty to a movement assist device when available.
- c. If vertical extraction required, ensure casualty is secured within appropriate harness, equipment is assembled, and anchor points are identified.

### 17. COMMUNICATE with the K9 casualty to provide reassurance

- a. If available, ensure K9 Handler travels with the K9 to provide restraint, comfort, and reassurance (this is important for both the handler and the K9).
- b. Encourage and provide positive reassurance to the injured K9 by stroking the K9's hair coat and / or patting the K9 on the head if they are not aggressive.

### 18. CARDIOPULMONARY RESUSCITATION:

- a. CPR within a tactical or high threat environment for victims of blast or penetrating trauma who have **no pulse, no ventilations, and no other signs of life** is not often successful and, therefore, should not be attempted during ITC. May have a greater role for consideration during the EVACUATION PHASE
- b. May benefit those patients suffering CPA subsequent to *electrocution, hypothermia, atraumatic arrest, or submersion injury* and, therefore, should be considered in the context of the tactical situation.
- c. Consider *bilateral needle decompression* for K9 casualties suffering torso or polytrauma with *no respirations or pulse* to ensure T-PTX is not the cause of cardiac arrest prior to discontinuation of care.
- d. *Refer to K9 TECC Supplement or K9TECC resources paged ([www.k9tecc.org/resources](http://www.k9tecc.org/resources)) for Veterinary CPR guidelines.*



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### 19. DOCUMENTATION OF CARE:

- a. Document clinical assessments, treatments rendered, and changes in the casualty's status in accordance with local protocol.
- b. Forward this information with the casualty to the next level of care.
- c. Consider implementing a **K9 CASUALTY CARE CARD** (*Located in K9 TECC Supplement and at [www.k9tecc.org/resources](http://www.k9tecc.org/resources)*) that can be quickly and easily completed by non-medical first responder.



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### ITC / Warm Zone Skill set:

#### 1. Hemorrhage Control:

- a. Apply Direct Pressure
- b. Apply Pressure Dressing
- c. Apply Wound Packing
- d. Apply Hemostatic Agent
- e. Apply / Reassess Improvised or Elastic Tourniquet (last resort)

#### 2. Airway:

- a. Apply Manual Maneuvers (position head and neck, straight and in-line)
- b. Perform Endotracheal Intubation
- c. Perform Needle or Surgical Cricothyrotomy / Tracheotomy

#### 3. Breathing:

- a. Application of effective occlusive chest seal
- b. Assist Ventilations with Bag Valve Mask
- c. Apply Oxygen
- d. Apply Occlusive Dressing
- e. Perform Needle Chest Decompression (consider bilateral)

#### 4. Circulation:

- a. Gain Intravascular Access
- b. Gain Intraosseous Access
- c. Administer IV/IO medications and IV/IO fluids
- d. Administer blood products
- e. Keep warm

#### 5. Wound management:

- a. Protect the Injured Eye
- b. Apply Dressing for evisceration
- c. Apply Extremity Splint
- d. Initiate Basic Burn Treatment
- e. Initiate Treatment for Traumatic Brain Injury

#### 6. Prepare Casualty for Evacuation:

- a. Move Casualty (drags, carries, lifts)
- b. Apply Spinal Immobilization Devices
- c. Secure casualty to litter
- d. Initiate Hypothermia Prevention

#### 7. Other Skills:

- a. Perform Hasty Decontamination
- a. Initiate Casualty Monitoring
- b. Establish Casualty Collection Point

**Note:** Care provided within the ITC guidelines is based upon individual first responder training and scope of practice, available equipment, local medical protocols, and medical director approval.



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### K9 TECC - EVACUATION / COLD ZONE

#### Goals:

1. Maintain any lifesaving interventions conducted during DTC and ITC phases
2. Provide rapid and secure extraction to an appropriate level of care
3. Avoid additional preventable causes of death

#### Principles:

1. Reassess the casualty or casualties.
2. Utilize a triage system/criteria per local policy that considers priority AND destination and includes **both Human and K9** casualties.
3. Utilize additional resources to maximize advanced care.
4. Avoid hypothermia.
5. Communication is critical, especially between tactical and non-tactical EMS teams and **veterinary resources**.
6. Maintain situational awareness – In dynamic events, there are NO threat free area (e.g. green or cold zone)

#### Guidelines:

##### 1. PRIMARY GOAL:

- a. The **M<sup>2</sup>ARCH<sup>2</sup>** principles performed during ITC are similar in EVACUATION CARE
- b. Reassess all interventions applied in previous phases of care, DTC and ITC.
- c. If multiple wounded (**humans and K9s**), perform primary triage for priority AND destination
- d. Consider utilizing the traditional approach to primary assessment with evaluating Airway and Breathing prior to Bleeding / Circulation.

##### 2. AIRWAY MANAGEMENT:

- a. Unconscious K9 *without* airway obstruction: **Same as ITC**
- b. Downed K9 *with* airway obstruction or impending airway obstruction:
  - i. Initially, same as ITC
  - ii. If previous measures unsuccessful, it is prudent to consider OTT/ETT or needle / surgical cricothyrotomy or tracheostomy (*with lidocaine if conscious*).
- c. If intubated, reassess for respiratory decline in patients with potential pneumothoraces





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- d. Consider the mechanism of injury and the need for spinal immobilization (*See NEUROLOGICAL TRAUMA below*).
  - i. Consider most conscious K9s may need chemical restraint to remain immobilized (*Refer to K9 TECC Supplement or locally approved veterinary protocols*)
  - ii. Spinal immobilization may not be necessary for downed K9s with penetrating trauma if the K9 appears neurologically intact

### 3. BREATHING:

- a. Immediately apply an occlusive bandage to all open and/or sucking chest wounds that were not treated prior to transport.
- b. Monitor the K9 for the potential development of a subsequent T-PTX. Clinical signs of a T-PTX in K9s include: (*e.g. progressive respiratory distress, hypoxia, and/or hypotension in the setting of known or suspected thoracic trauma*).
- c. Treat T-PTX as described in ITC (*e.g. 'burping' chest seal or needle decompression*). Repeat steps as needed to mitigate respiratory distress.
  - i. **ALWAYS** consider decompressing both left + right sides of the chest in K9s
  - ii. For situations with prolonged transport times that require multiple decompressions, then consider placing a thoracostomy tube (*again pending the provider experience and scope of practice*)
- d. If available, consider administration of oxygen to maintain SpO<sub>2</sub> at ~ 94% for all traumatically injured K9s and any K9 with:
  - i. Low oxygen saturation by pulse oximetry (SpO<sub>2</sub> < 94%)
  - ii. Injuries associated with impaired oxygenation (*e.g. pulmonary contusion, smoke inhalation, etc.*)
  - iii. Unconsciousness
  - iv. Traumatic Brain Injury (TBI) (*maintain oxygen saturation > 90%*)
  - v. Circulatory shock
  - vi. Casualties with pneumothoraces

### 4. BLEEDING

- a. Re-assess all interventions and sources of major hemorrhage for bleeding
- b. Control all sources of major bleeding with appropriate use of direct pressure, deep wound packing and pressure bandages
- c. Avoid use of TQs as first line intervention in K9s to control bleeding, except for:
  - i. Situations in which hemorrhage remains uncontrolled despite application of direct pressure dressing, hemostatic agents or deep wound packing,
  - ii. Areas that are anatomically appropriate (limb or tail) for TQ application
  - iii. A traumatic total or partial amputation of an extremity
- e. Reassess all TQs that were applied during previous phases of care. Expose the injury and determine if a TQ is needed.



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- f. Tourniquets applied in prior phases that are determined to be both necessary and effective in controlling hemorrhage should remain in place if the casualty can be rapidly evacuated to definitive medical care.
- g. If TQ is ineffective in controlling hemorrhage or if there is any potential delay in evacuation to care, identify an appropriate location 2-3 inches above the injury, and apply a new TQ.
- h. If delay to definitive care longer than 2 hours is anticipated and wound for which TQ was applied is anatomically amenable, attempt a TQ downgrade.  
**Refer to K9 TECC Supplement for guidance on TQ conversion**
- i. A distal pulse check should be performed on any limb where a TQ is applied. If a distal pulse or active bleeding is still present consider:
  - i. Additional tightening of the original TQ, or
  - ii. The use of a second TQ, juxtaposed (side by side) and proximal to the first
- j. **Expose** and **clearly mark** all TQ sites with the Date/Time of TQ application. Use an indelible marker.

#### 4. TRANEXAMIC ACID (TXA) OR EPSILON AMINOCAPROIC ACID (EACA):

- a. If casualty is anticipated to need significant blood transfusion (*e.g. presents with hemorrhagic shock, one or more amputations, penetrating torso trauma, or evidence of severe bleeding*) consider administration of one of the following as soon as possible and **NO LATER THAN 3 hours** post-injury:
  - a) 10 mg/kg **TXA** in 100 mL NS or LR IV slowly over 15 min
  - b) 150 mg/kg **EACA** in 100 mL NS or LR slowly over 15 min; after initial bolus, may consider continued infusion at 15 – 20 mg/kg/h for 8 hours

#### 5. CIRCULATION

- a. Reassess casualty for hemorrhagic shock (*e.g. altered mental status in the absence of brain injury, weak or absent peripheral pulses, and/or change in pulse character*)
- b. Establish IV or IO access if not performed already performed in ITC
- c. Restore perfusion as recommended in ITC (**refer to K9 TECC Supplement For Shock and Fluid resuscitation**)
- d. If BP monitoring is available, maintain **SBP 80 – 90 mm Hg**
  - i. K9 casualty with an altered mental status due to **suspected TBI**, maintain a desired SBP  $\geq 90$  mm Hg or a strong palpable femoral pulse
    - a) For TBI, consider utilizing a **low-volume** fluid strategy comprised of hypertonic saline combined with a synthetic colloid



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- ii. If in shock and K9 specific blood products are available, with appropriate provider scope of practice / local protocols resuscitate with 1:1 ratio of PRBCs to FFP.
  - a) If K9 blood component therapy is not available consider collecting and transfusing Fresh Whole Blood, if veterinary approved protocols, appropriate training, and methods of compatibility testing are in place.
- e. Further administration of IV fluids to maintain hemodynamic stability must take into the consideration transport time as well as the adverse effects on the patient that may be invoked by using large volume fluid resuscitation
  - i. If transport times are anticipated to **exceed 2 hours**, consider administering small aliquots of fluids to maintain targeted BP / clinical perfusion parameters or consider starting a low-rate infusion of:
    - a) **Synthetic colloids** (low-molecular weight, preferred) at 1 mL/kg/h, OR
    - b) **Isotonic crystalloids** at 2 mL/kg/h

### 6. PREVENTION OF HYPOTHERMIA:

- a. Minimize casualty's exposure to the elements; move into medic unit, vehicle or warmed structure if possible.
- b. If not performed already during previous phases of care:
  - i. Remove any wet over garments and dry the casualty
  - ii. Place the casualty onto an insulated surface as soon as possible
  - iii. Cover the casualty with commercial warming device, dry blankets, poncho liners, sleeping bags, or anything that will retain heat and keep the casualty dry
- c. If available and required to maintain perfusion, provide warm IV fluids

### 7. MONITORING

- a. Periodically, obtain and record vital signs (*temperature, pulse, respiration, pulse quality, mucous membrane color, capillary refill time, mentation*)
- b. If available electronically monitor:
  - i. Pulse oximetry
  - ii. EKG
  - iii. EtCO<sub>2</sub> (if intubated)
  - iv. Non-Invasive Blood pressure



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### 8. REASSESS PATIENT

- a. Perform secondary survey to check for additional injuries
- b. Inspect / dress known wounds and splint known/suspected fractures that were previously deferred. Recheck pulses/warmth of bandaged limbs
- c. Attend to any suspected or known blunt or penetrating eye injuries:
  - i. Protect the eye from external pressure
  - ii. Stabilize any impaled object to prevent movement during transport and movement
- d. **IMPORTANT: Handle** an injured K9 with a fracture with extreme care and proper restraint. Consider administering chemical restraint and analgesia before manipulating the fractured site
- e. *Refer to K9 TECC Supplement for: Wound and Ocular Trauma Management and recommended analgesia/chemical restraint protocols.*

### 9. ANALGESIA / SEDATION:

- a. Provide adequate analgesia as necessary as described under ITC and *K9 TECC Supplement*
- b. **DO NOT** use any human-derived non-steroidal anti-inflammatory medications (e.g. aspirin, ibuprofen, naproxen, ketorolac, etc.) in K9s

### 10. ANTIBIOTICS:

- a. Consider initiating antibiotic administration for K9 casualties with open wounds/fractures and penetrating eye injury when evacuation to definitive care is significantly delayed or infeasible
- d. This is generally determined in the mission planning phase and requires **medical oversight**.
- e. If antibiotics are warranted select either a cephalosporin or potentiated penicillin [e.g. amoxicillin-clavulanic acid, cephalexin (Keflex), etc.]

### 11. BURNS

- a. Consider burns may not be readily evident in K9s as their hair coat covers cutaneous / skin lesions effectively
- b. Burn care is consistent with the principles described in ITC. For recommended interventions refer to *"Burns"* section in *K9 TECC Supplement*
- c. Smoke inhalation, particularly in a confined space, may be associated with significant **carbon monoxide** and **cyanide toxicity**. Patients with signs of significant smoke inhalation plus:
  - i. Significant symptoms of carbon monoxide toxicity should be treated with high flow oxygen if available



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- ii. Significant symptoms of cyanide toxicity should be considered candidates for cyanide antidote administration (*Refer to K9 TECC Supplement for Cyanide Antidote options*)
- d. Be cautious of **off-gassing** from patient in the evacuation vehicle if there is suspected chemical exposure (e.g. cyanide) from the fire
- e. Consider **early airway management** if there is a prolonged evacuation period and the patient has signs of significant airway thermal injury (*e.g. singed facial hair, oral edema, carbonaceous material in the posterior pharynx and respiratory difficulty*)
- f. Provide adequate analgesia for all burn patients
- g. Aggressively act to prevent hypothermia for burns > 20% TBSA

### 12. PREPARE K9 CASUALTY FOR MOVEMENT:

- a. Consider environmental factors for safe and expeditious evacuation
- b. Secure casualty to a movement assist device when available
- c. If vertical extraction required, ensure casualty is secured within appropriate harness, equipment is assembled, and anchor points are identified

### 13. COMMUNICATE with the K9 casualty to provide reassurance

- a. If available, ensure K9 Handler travels with the K9 to provide restraint, comfort, and reassurance (this is important for both the handler and the K9)
- b. Encourage and provide positive reassurance to the injured K9 by stroking the K9's hair coat and or patting the K9 on the head if the K9 is not aggressive

### 14. CARDIOPULMONARY RESUSCITATION:

- a. May have a beneficial role for patients suffering CPA from electrocution, hypothermia, non-traumatic arrest or drowning
- b. **NOTE:** Consider bilateral needle decompression for casualties with thoracic or blunt polytrauma with no respirations or pulse to ensure T-PTX is not the cause of CPA prior to discontinuation of care.
- c. For CPR Guidelines in K9s, *See recommendations listed in K9 TECC Supplement under CPR*

### 15. DOCUMENTATION OF CARE:

- a. Contact and relay the following information to the receiving veterinary facility:
  - i. Estimated Time of Arrival (ETA)
  - ii. **Mechanisms of the injury** sustained (*e.g. smoke inhalation, blunt versus penetrating trauma, etc.*)
  - iii. **Index of suspicion** for the seriousness of unseen injuries
  - iv. Initial and trends in **vital parameters**
  - v. K9's **known or suspected injuries**
  - vi. Overall condition or status (*e.g. vitals, mentation, neurological, etc.*)



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- vii. **Interventions** performed
- viii. Patient's **response** to interventions
- b. Continue or initiate documentation of clinical assessments, treatments rendered, and changes in the casualty's status in accordance with local protocol
- c. Transfer information with the casualty to the next level of care either verbally or in writing.
- d. Considering implementing a **K9 CASUALTY CARE CARD** (*see K9 TECC Supplement*)

### Skills:

- 1. Familiarization with advanced monitoring techniques
- 2. Familiarization with transfusion protocols
- 3. Advanced airway management

K9 TECC						
Skill Set Based on Provider Level						
Provider Level	Pressure Bandage + Wound Packing	Hemostatic Agents	TQs	Needle Decompression	ETT	Surgical Airway
K9 Handler	X	X	X			
LEO (non-handler)	X	X	X			
EMR or equivalent	X	X	X	X***		
EMT or equivalent	X	X	X	X***	X***	
Advanced EMT or equivalent	X	X	X	X	X***	X***
Paramedic	X	X	X	X	X***	X***

\*\*\* Only with special training, specialized protocol, and agency / OMD approval. Ideally, this skill set should be performed by all providers, but need to prove safety and efficacy prior to inclusion of additional provider levels

Other EMS/medical related skills such as patient assessment, chest seal placement, splinting, and hypothermia management should be considered standard for all levels of providers. Additional skills can be considered with agency approval



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### K9 TECC DISCLAIMER:

The information and resources made available by the K9 TECC working group do not provide authorization for non-veterinary licensed personnel to *practice veterinary medicine* without the direct or indirect supervision from a licensed veterinarian. The available resources are, rather, intended to be used as a template and / or reference to assist each EMS / FIRE / LE agency in developing their own prehospital protocols and standing orders for rendering emergency lifesaving preveterinary care to OpK9s injured in the Line of Duty.

Further the K9 TECC working group advises that:

1. Each agency's guidelines and standing orders should be developed in collaboration and partnership with a veterinarian that is licensed in their State or region.
2. These resources are intended to be utilized ONLY:
  - a. For rendering emergency lifesaving care to OpK9s injured in the Line of Duty when licensed veterinary professionals are not readily available to render care, AND
  - b. By licensed or certified EMS paraprofessionals (EMTs, AEMTs, paramedics), law enforcement officers, and / or K9 Handlers in accordance with the level of their legal scope of practice for providing medical care to human casualties, and by their respective State's:
    - i. Veterinary Practice Act or statutes regulating the practice of veterinary medicine, AND
    - ii. Practice acts or statutes of their respective profession (*e.g. State EMS statutes, etc.*)
  - c. By the aforementioned personnel that have received training in K9 anatomy, K9 first responder care, and K9 TECC procedures under the direction of a licensed veterinary professional or a professional training organization that employs a licensed veterinarian as a their medical director to oversee their training curriculum.

The "**practice of veterinary medicine**" is defined and governed on a State-by-State basis. The requirements and exemptions for practicing veterinary medicine may be found in the respective State's Veterinary Practice Act or in a section of the State's laws that regulates veterinary medicine.





## K9 TACTICAL EMERGENCY CASUALTY CARE (K9-TECC) GUIDELINES

DATED: 20161213



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