



NPS TEMS
Field Manual

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* EMR scope of practice items approved for TacMed

TACMED GENERAL INFORMATION

How To Use This Manual

Manual Organization.

Sections: the manual is organized into four sections. Subjects are organized alphabetically within the sections and numbered as follows (see Table of Contents):

General Information Section	0000 – T – 0999 – T.
Procedures	1000 – T – 1999 – T.
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Subject: each individual subject is identified in the subject page header and footer by:

Subject Title:	Header.
Manual Title:	Footer, lower left.
Manual Revision Date:	Footer, lower left.
Manual Section:	Footer, lower right.
Subject Number:	Footer, lower right.

Table of Contents: Each Procedure, Protocol, and Drug is listed by section, in alphabetical and numerical order. Gaps in the number sequence allow future entries to be inserted in the correct order.

Protocol Organization and Definitions.

EMT and Parkmedic Protocols: each protocol is organized into “EMT” and “Parkmedic” sections, each of which contains “Standing Orders” followed by “Base Hospital Orders.” A “Special Considerations” section at the end of the protocol contains background information for the protocol. “Special Considerations” are for reference only.

Standing Orders: items under “Standing Orders” may be done prior to base contact. Unless otherwise stated, they are written to be completed sequentially.

Parks without Base Hospitals: a base hospital is defined as any communications center providing on-line medical direction (i.e. where medical consultation is available in real time by telephone or radio). Providers in a park without a base hospital essentially operate in constant communication failure. Their local medical advisor will establish policies identifying which base order interventions, if any, may be performed under these circumstances.

Base Hospital/Communication Failure Orders: items labeled “Base Hospital/Communication Failure Orders” may be performed by the EMT or Parkmedic only after base hospital contact and approval, OR base contact has been attempted and was unsuccessful. Reasonable attempts to contact base must be made, and communication failure documented.

Base Hospital Orders Only: items listed under “Base Hospital Orders Only” require base hospital approval and may NOT be performed in communication failure.

Navigation: once a protocol is selected, care should be continuous under that protocol. Exceptions to this rule are:

GO TO: if an order directs you to “**GO TO PROTOCOL: XXXXX**” (protocol named in italics), then patient care should continue under the specified protocol, IF the patient meets the stated criteria. If the patient does not meet the criteria, then continue with the original protocol.

Cardiac Arrest: if a patient experiences cardiac arrest while being cared for under another protocol, then the Provider may immediately change to the appropriate cardiac arrest protocol without first making base contact. Base contact, however, should be attempted as soon as possible without compromising patient care.

REFERENCE: Additional relevant information is available in another protocol or procedure if an order directs you to “**REFERENCE PROTOCOL or PROCEDURE: XXXXX**” (protocol or procedure named in italics). This information is intended to supplement knowledge, but patient care should continue to follow the original protocol.

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Protocols are chief complaint driven and are designed for patient care. Protocols contain orders for the appropriate care of the patient.

Procedures are step by step instructions in how to carry out a specific action in the care of a patient (e.g. IO needle insertion).

Drug Pages are designed to be informational. Therefore, as drug dosing may vary depending on the selected protocol, the range of dosing used throughout the manual is listed in the drug page; when caring for a specific patient, the administered dose is that designated in the protocol. Depending on the drug, the dose may be listed as mg/kg or ml/kg. Generic names are always used and in cases where the brand name is commonly used, this will also be listed (e.g. Midazolam/Versed).

Tactical EMS Protocols – Appendix T

Specific Scope of Practice Modifications.

These protocols outline and define the expected level of care that should be administered to patients treated by approved NPS EMS providers in tactical situations. These protocols are “chief complaint” driven and create a dynamic document that must be applied relevant to individual patient presentation and situation; as these are intended as an appendix (or supplement) to the general field manual for tactical situations. Several protocols have been eliminated (e.g. peds, child-birth) and the drug box has been significantly modified. The expectation is, that at both the BLS and ALS levels, the equipment and drugs carried will be modified for weight and the tactical mission needs. The focus here is to have adequate equipment and fluids (IV/PO) to treat primarily trauma (penetrating or blunt), dehydration and minor injuries. The remainder of the protocols are included to give treatment guidance for situations that may be confronted while on a tactical mission. It is the expectation that providers will utilize the protocols, patient assessment, and clinical findings cooperatively to establish a treatment plan for each patient.

Tactical medical care providers are expected to provide pre-hospital care in dangerous environments with little or no support and when operational security is a consideration. They may also encounter situations where communication is not assured and evacuation may be delayed significantly. The Tactical Emergency Medical Service (TEMS) Field Manual is intended to supplement the Emergency Medical Technician (EMT) and/or Parkmedic’s protocols in the areas of Tactical Emergency medical care.

The driving factors in TEMS are three-fold:

1. Mission
2. Overall Team Health
 - a. Self-care
 - b. Buddy care
 - c. Team care
3. Protection of:
 - a. Victims/Hostages
 - b. Bystanders
 - c. Team Members
 - d. Perpetrators

The care provider in the tactical situation may be forced to improvise and adapt his or her medical procedures based on situational factors in order to provide care for and prepare the patient for evacuation to a safer environment. This guide, in conjunction with the best practices learned in standard EMT/Parkmedic/Paramedic protocols, is intended to support the care provider’s efforts to provide pre-hospital life support until the patient can be transferred and given definitive care.

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Three Stages of Tactical Care.

The Tactical EMS policies use the recommendations from the Tactical Combat Casualty Care (TCCC) guide to establish three phases of combat patient care in a tactical environment:

1. Care Under Fire

The care rendered at the scene of the injury while both the provider and the patient are under hostile fire. The risk of additional injuries being sustained at any moment is extremely high for both patient and rescuer. Available medical equipment is limited to that carried by each operator and medical provider.

- Type of care carried out in this stage includes life-threatening hemorrhage control through direct pressure and tourniquet use.

-All Tactical Protocols in this phase will follow the Basic Management Plan for Care Under Fire

1. Return Fire and Take Cover
2. Direct or expect patient to remain engaged as a combatant if appropriate
3. Direct patient to move cover and apply self-aid if able
4. Try to keep the patient from sustaining additional wounds
5. Airway management is generally best deferred until Tactical Field Care Phase

2. Tactical Field Care

The care rendered once the patient and his or her unit are no longer under hostile fire. It also applies to situations in which an injury has occurred on a mission, but hostile fire has not yet been encountered. Medical equipment is still limited to that which is carried into the field by mission personnel. Time to extraction varies from minutes to hours.

-Type of care carried out in this stage includes basic airway management, establishing IV access, fluid resuscitation, hypothermia prevention, and administering medications, analgesics (pain meds) and antibiotics (Levaquin) as indicated in specific protocols (pill pack).

-All Tactical Protocols in this stage will use the mnemonic XABC to address the four most basic components of care in order of importance:

- X – eXsanguinating hemorrhage care/ eXtraction
- A – Airway management
- B – Breathing
- C – Circulation

3. Tactical Evacuation Care

The care rendered while the patient is being evacuated. Any additional personnel and medical equipment prestaged in these assets will be available during this stage.

-Type of care carried out in this stage includes advanced airway management and advanced injury specific treatments.

TacMed Notes.

Pill Pack: Acetaminophen, Ibuprofen, and Levaquin were chosen to be self-administered on a PRN basis. See specific protocols for indications. Not to be administered to non-team members. If allergic to any of these medications notify your local EMS medical advisor (LEMA) for substitutions.

Preventable Combat Deaths:

- #1 60% - extremity hemorrhage
- #2 33% - tension pneumothorax
- #3 6% - airway obstruction

TACMED GENERAL INFORMATION

General Information.

In general this NPS Tactical EMS Field Manual is designed to be used unmodified as it is part of Reference Manual 51 (RM 51) and under Director's Orders 51 (DO 51), and thus carries the weight of NPS Policy. However, given the wide range of needs and unique environments within the NPS, some local modifications may be necessary and appropriate for specific parks or park areas. These modifications will be made and approved by the Local EMS Medical Advisor (LEMA) and are authorized within an individual park or park area under his/her medical license. For example parks with extreme temperatures may modify the quantity of fluid carried on a specific mission.

If any local (park specific) modifications are made to the NPS EMS Field Manual, including appendices:

The Field Manual should contain a copy of the local park's Scope of Practice Modifications (Procedures, Protocols, and Drugs), inserted in the appropriate section(s).

Modified, deleted or added (Procedures, Protocols, and/or Drugs), should be listed and identified as such in the Table of Contents.

Procedures and Protocols removed from practice at a local park should be included in the General Information section so that EMS Providers have access to the information should they be detailed to or transfer to, another park.

If a local park chooses to modify the Field Manual (Procedures, Protocols, and/or Drugs), these steps should be followed:

The modification must be approved in writing by the LEMA.

The modified version will include the local park acronym, e.g., SEKI, and revision date in the version data in the subject footer (i.e. Version SEKI 3/09).

The local version will have the same topic number if it is a modified version of an existing protocol or procedure (e.g. 2010.SEKI).

The modified version should be inserted into the NPS Field Manual, in numerical order, for local use.

The modified version should be listed in appropriate order on the Field Manual contents page.

For procedures or protocols that are additions to the Field Manual, these will be locally designated as above, but given a unique number that places them in appropriate alphabetic order in the local version of the Field Manual.

Manual Updates/Modification Guidelines.

Most organizations update their medical guidelines periodically (e.g. AHA). Although these updates will be reviewed and incorporated into the Field Manual if relevant, these changes will usually be adopted during the normal Field Manual revision cycle.

Submitting suggestions: Comments may be submitted through any local EMS Coordinator to the Branch Chief for EMS Services, WASO. The NPS has National Medical Advisors and maintains an NPS EMS oversight committee that meets periodically to consider recommended changes and updates to the NPS EMS Field Manual.

NPS Definitions.

Refer to RM-51 for provider levels.

TACMED GENERAL INFORMATION

Recommended Equipment Lists

1. Individual Team Member (IFAK)

Thigh “Blowout” Kit:

Contents:

Item	Quantity	Acceptable Alternatives/Comments
Combat Application Tourniquet (CAT)	1	- CAT endorsed by NPS, others available but not recommended
Gauze Roll (4.5” x 4.1 yds)	2	- May substitute other gauze hemostatic agents (Combat Gauze, Trauma Gauze). These have not been proven to be superior over aggressive wound packing with clean gauze. ****Granular and wafer hemostatic agents are NOT recommended. REMOVE GRANULAR AGENTS FROM ALL KITS****
4” Ace Bandage	1	- Other compression bandages are acceptable - Israeli Emergency Bandage, Olaes, Blast, etc.
Roll of 2” X 10 yds tape	1	- Any tape (duct, medical, etc)
4”x4” – Non-Sterile Gauze Pads	4	
HALO Chest Seal (2 per package)	1	- Other Chest Seals are acceptable (2 ea in IFAK) - Asherman, Bolin, HyFin, SAM, etc. - Any other occlusive material (plastic, foil, etc) and tape
NPA – 28 fr with 3g water soluble lubricating jelly packet	1	- Optional OPA 100mm may be added to kit
Non latex gloves - Large	2pr	- May be replaced with operators glove size
Mini trauma shears 5.5”	1	
Pill Pack : Ibuprofen [800 mg PO] Acetaminophen [500 mg x2 PO] Levofloxacin [750 mg PO]	1ea	- Should be taken for any open wound sustained in tactical operations (gunshot, burn, etc) - Ensure no allergies when assigned (LEMA approved substitutions for Levofloxacin allergic team members)
Triangular bandage	1	
Personal Medical Information Card / Triage Tag	1	- Personal information should be filled out prior to mission.
3.25 “ 14 ga Decompression needle (catheter)	2	- Multiple decompression needles available but must be at least 14ga and 3.25”long

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2. Parkmedic Equipment Pack (ALS Kit)

Contents: (Standard list below may have rare mission specific modifications)

Item	Quantity	Acceptable Alternatives/Comments
Stethoscope	1	
BP Cuff – adult	1	
Non Latex Gloves - Large	5 pair	- May be replaced with operators glove size
Soft Disposable Restraints	1 pair	- Tape, gauze, or webbing - Caution when used to ensure they do not compromise perfusion
SAM Splint	2	- Universal Aluminum Splints
Triangular bandages	2	
Emergency Blanket	2	- All weather thermal blanket or sleeping bag
Gatorade powder/tabs	4	- Any electrolyte oral solution enough for oral hydration every 30 minutes up to 2 hours
EZ-IO Manual Driver – with 2 adult needles (15ga x 25mm)	1	Other IO devices available, but not recommended.
18 ga IV catheters	2	
14 ga IV catheters	2	
Mucosal Atomizer Device [MAD]	4	
IV start kit	2	- Or contents to start and secure IV/IO
IV Saline Lock	2	
Syringe 1 ml with 22 ga needle	2	- Other syringe combinations may be used
Syringe 3 ml with 22 ga needle	6	- Other syringe combinations may be used
Sharps Shuttle	1	- Other sharps container
Alcohol Prep Pads	10	- Chlorhexidine may also be used
4"x4" – Non-Sterile Gauze Pads	4	
4" Ace Bandage	2	- Other compression bandages are acceptable - Israeli Emergency Bandage, Olaes, Blast, etc.
CAT Tourniquet	2	- CAT endorsed by NPS, others available but not recommended
Permanent Pen	1	
Roll 2" x 10 yds Tape	2	- Any tape (duct, medical, etc)
Glucose paste	2	- Other sports gel packets (i.e. GU, Clif Shot, etc.)
Ondansetron (Zofran) 4 mg Oral Dissolving Tablets [ODT]	4	
Fentanyl 150 mg vial	4	- Other vial doses/concentrations acceptable
Versed 2 mg vial	4	- Other vial doses/concentrations acceptable
Epinephrine 1 ml 1:1,000 ampule	2	- Epinephrine autoinjector may also be used
Naloxone 10 mg vial	1	- Other vial doses/concentrations acceptable
Bacitracin Ointment Tube	1	
King LTSD Tube Size #4	1	- Other supraglottic airways acceptable
NPA – 28 fr with 3g water soluble lubricating jelly packet	2	
OPA 100mm	2	
Suction Easy 'SQUID' device	1	- Other suction devices are acceptable
Collapsible BVM w/ mask	1	
Triage Tags	10	

Not included in Optional Tactical Medic Kit (but may be considered – mission specific)

IV Drip set [10 or 15 gtts /ml]	2	
Normal Saline 0.9% 500 ml bag	2	- May substitute LR or other isotonic crystalloid
Pelvic Binder (T-POD, Pelvic sheet)	1	-
Saline Flush	4	-
Clamp Device	1	-

Automated External Defibrillator (AED)

Scope of Practice	Any person, but a certified EMS provider (First Responder, EMT-B, Parkmedic) is preferred.
Indications	<p>Any patient >30 days old in cardiac arrest (unresponsive, not breathing, and pulseless). If you suspect but cannot confirm arrest for any reason (e.g., possible agonal breathing), attach and turn on the AED.</p> <p>If a non-arrested patient is at risk for arrest, bring the AED to the patient's side. Do not attach the AED to the patient unless the patient arrests.</p> <p>Do not delay treatment or transport (per Step 2), in order to bring the AED to the scene.</p>
Contraindications	Patient is not in cardiac arrest; patient is <1 year old; patient is a victim of obviously fatal trauma, meets the criteria for declaration of death, or has a known DNR.
Equipment	Automated External Defibrillator (AED).
Procedure	<ol style="list-style-type: none">1. FOLLOW PROTOCOL: <i>Cardiac Arrest With AED (Adult Medical); Cardiac Arrest Without AED (Adult Medical)</i>2. Provide 2 minutes of CPR prior to using the AED; if the AED can be applied within 4 minutes of a known sudden collapse, skip initial CPR and proceed to Step 3.3. Turn on AED and follow prompts (<i>attach pads, analyzing, shock advised/not advised</i>, etc).4. After each "Shock Delivered" or "No Shock Advised" message, immediately provide CPR until AED prompts for next analysis (approx. two minutes). Check pulse only if prompted by PROTOCOL.5. After pulse check: if <u>pulse present</u> turn AED off but leave it attached to the patient in case of re-arrest; continue PROTOCOL. If <u>pulse absent</u> continue CPR until AED prompts for next analysis; continue PROTOCOL.
Notes	<p>Minimize number and duration of interruptions to CPR. No interruption longer than 10 seconds. Provide CPR while AED charges, if possible. Deliver other interventions (airway, IV, medications) during CPR.</p> <p>Before applying pads: move patient from water and dry off wet/sweaty skin. Remove transdermal medication patches and wipe off medication (e.g. Nitropaste). Place pads at least one inch from an implanted pacemaker.</p> <p>For adults, use adult pads with adult energy doses only. Do not allow pads to touch each other. If pads are too large to both fit on the front of the patient without touching, place one pad on right upper chest and the other on the left back (see package for diagram).</p> <p>Do not use AED in moving vehicles. Stop vehicle to prevent interference with AED analysis. Do not focus only on the AED. Monitor patient for signs of resuscitation (e.g. color change, pupil response, spontaneous respirations).</p> <p>AEDs may have different programming. If AED prompts conflict with PROTOCOL, follow the PROTOCOL.</p> <p>If declaration of death, leave pads attached to patient.</p> <p>Save data stored by the AED regardless of patient outcome.</p>

Cross Reference

Protocols:

Abdominal Pain (Injuries)
Allergic Reactions
Altered Mental Status/Altered Level of Consciousness (ALOC)
Cardiac Arrest Without AED
Electrical and Lightning Injuries
Ingestion/Poisoning
Seizures
Shock Without Trauma

Base Hospital Contact Criteria

General

Base hospital contact is to be made as specified in individual protocols.

Tactical situations

The care provider in the tactical situation may be forced to improvise and adapt his or her medical procedures based on situational factors in order to provide care for and prepare the patient for evacuation to a safer environment. It is presumed that in tactical situations all providers will function in radio failure, allowing all medications within their scope of practice, to be given without base contact. If safe to do so, the base can be contacted for further orders.

Non-tactical situations or when safe to do so as above

Base hospital contact should be attempted if no protocol exists for an individual patient's particular complaint.

Base hospital contact is NOT required in any of the following circumstances:

Patients transported with normal vital signs, normal mental status and a non-life-threatening complaint.

Patients signed out "Against Medical Advice" with normal vital signs, normal mental status and a non-life-threatening complaint.

Patients treated and released (TAR) per criteria in specific PROTOCOL.

If base contact is indicated but cannot be made, proceed by individual PROTOCOL and use your best judgment. Make base contact as soon as possible. Document inability to contact base.

Epinephrine Ampule

Scope EMT (per Local Medical Advisor approved extended scope of practice) **and Parkmedic.**

Indications Anaphylaxis (allergic reaction with respiratory distress)

Equipment Epinephrine kit containing: 1, 1 ml ampule of epinephrine 1:1000, 1 tuberculin syringe with needle, alcohol prep

Procedure Refer to specific PROTOCOL for indications and dosages.

1. Refer to Allergic Reactions assessment.
2. Ask patient if they have any drug allergies.
3. Confirm medication, concentration, dose and clarity of liquid in vial
4. Tap ampule to get medicine down from top, break top off ampule with gauze 2x2, place top in sharps container.
5. Draw up 0.3 ml of epinephrine 1mg/ml 1:1000, syringe approximately 1/3 full.
6. Pointing syringe up, expel all air.
7. Inform patient they are going to receive an injection, side effects may include feeling shaky or heart racing.
8. Select and cleanse area for intramuscular injection, primary sites upper arm or thigh.
9. Using one hand to tent skin, insert needle at 90 degrees into administration site and draw back checking for blood return. If there is blood return, select a different site, and insert needle, again check for blood return.
10. If no blood, administer 0.3 ml of epinephrine for any patient.
11. Remove needle. Discard needle properly in sharps container if additional needles are available. If not, retain needle with syringe and remaining epinephrine as additional doses may be required.
12. Observe patient for improvement or deterioration of condition. Repeat exam and vitals after each dose.
13. Document procedure, vitals and response to treatment.
14. If an additional dose is required consult Allergic Reactions Protocol.
15. If indicated by protocol, begin again from step 5.

Cross Reference

Protocols:

Allergic Reactions

Fracture and Dislocation Management

(Reduction and Splinting)

Scope of Practice **EMT and Parkmedic** (per Local Medical Advisor approved extended scope of practice).

PROCEDURE: Reduction of Fracture per PROTOCOL: *Minor or Isolated Extremity Trauma, Trauma (Non-Penetrating), Trauma (Penetrating)*.

1. Identify site of injury.
2. Assess distal circulation, sensation and motor function.
3. Irrigate open fractures per PROCEDURE: *Wound Care*. Use LR/NS or sterile water if available, otherwise potable water.
4. Provide analgesia if available per appropriate PROTOCOL.
5. Grasp extremity above and below injury (use two rescuers if available).
6. Apply steady gentle traction below (distal to) injury in direction of long axis of extremity.
7. Continue until patient complains of intolerable pain, resistance is felt, or reduction is accomplished.
8. Apply splint.
9. Reassess distal circulation, sensation and motor function.
10. Document procedure.

Note: for deformed femur fractures, reduction is best performed with application of a traction splint.

PROCEDURE: Splinting per PROTOCOL: *Minor or Isolated Extremity Trauma, Trauma (Non-Penetrating), Trauma (Penetrating)*.

1. Assess distal circulation, sensation and motor function.
2. Irrigate and dress open wounds per PROCEDURE: *Wound Care*.
3. Reduce potential fractures if indicated per **Reduction of Fracture**.
4. Immobilize the joint if the joint is the site of primary injury. Immobilize joints above and below long bone injuries.
 - Suspected mid-shaft femur fractures are best immobilized with a traction splint.
 - Suspected pelvis, bilateral femur or multiple lower extremity fractures may be immobilized with MAST antishock trousers per PROCEDURE: *Pelvic Stabilization*.
 - Suspected hip fractures may be immobilized on a long board.
 - Suspected pelvic fractures may be immobilized per PROCEDURE: *Pelvic Stabilization*.
5. Splint must be well-padded.
6. Toes or fingers must be accessible for repeated assessment.
7. Injury should be elevated above the level of the heart if practical.
8. Reassess distal circulation, sensation and motor function.
9. Document procedure.

PROCEDURE: Reduction of Dislocated Digit (finger or toe) per PROTOCOL: *Minor or Isolated Extremity Trauma, Trauma (Non-Penetrating), Trauma (Penetrating)*.

1. Assess other injuries, digits and distal circulation, sensation, and motor function.
2. Confirm indications (ALL must be present):
 - Greater than two hours transport time to hospital or clinic.
 - For all digit/shoulder/patella reductions, base hospital order or documented communication failure.
 - History of “jamming” finger.
 - Clear deformity to proximal or distal interphalangeal joint.
 - Patient with limited ability to bend finger because of pain.
 - Procedure does not delay care and transportation of life-threatening injuries.
3. If laceration or exposed bone irrigate thoroughly per PROCEDURE: *Wound Care*.
4. Grasp distal portion of finger securely with gauze.
5. Stabilize proximal portion of finger and hand per included diagram.
6. Apply gentle, firm, steady, longitudinal traction while gently pushing distal bone back into place.
7. Reduction is confirmed by “clunk”, resolution of deformity and pain, and return of motion.
8. If successful, digit should be buddy taped and padded.
9. If unsuccessful or not attempted, finger should be splinted in the position it was found.
10. Reassess distal circulation, sensation and motor function.
11. Document procedure.

Fracture and Dislocation Management

(Reduction and Splinting)

PROCEDURE: Reduction of Dislocated Shoulder per PROTOCOL: *Minor or Isolated Extremity Trauma, Trauma (Non-Penetrating), Trauma (Penetrating)*.

1. Assess other injuries, shoulder and distal circulation, sensation and motor function.
2. Confirm indications (ALL must be present):
 - Greater than two hours transport time to hospital or clinic.
 - For all digit/shoulder/patella reductions, base hospital order or documented communication failure.
 - History of indirect “lever-type” trauma to arm rather than blow directly to shoulder.
 - Clear deformity to shoulder (loss of rounded appearance of lateral shoulder).
 - No physical findings of direct shoulder trauma (e.g. shoulder contusions/abrasions).
 - No other suspected fractures to same arm.
 - Patient with limited ability to move shoulder because of pain.
 - Procedure does not delay care and transportation of life-threatening injuries.
3. Place patient on unaffected side.
4. Provide analgesia if available per appropriate PROTOCOL.
5. Continually remind patient to relax shoulder muscles.
6. Apply gentle steady traction away from shoulder by grasping wrist and slowly lifting entire arm away from body to 90 degrees per attached diagram. Slowly lift patient using their body weight for countertraction. This may take several minutes. Maintain traction at all times.
7. Continue steady traction until reduction is felt/heard, patient reports relief, or 5 minutes have elapsed.
8. If reduction is accomplished, arm should be easily moveable into position against body. Apply sling and swath per attached diagram.
9. If reduction is not accomplished, arm should be slowly moved into original position, padding applied in space between arm and body, and arm secured in position for transport.
10. Reassess distal circulation, sensation and motor function.
11. Document procedure.

PROCEDURE: Reduction of Dislocated Patella (kneecap) per PROTOCOL: *Minor or Isolated Extremity Trauma, Trauma (Non-Penetrating), Trauma (Penetrating)*.

1. Assess other injuries, knee and distal circulation, sensation and motor function.
2. Confirm indications (ALL must be present):
 - Greater than two hours transport time to hospital or clinic.
 - For all digit/shoulder/patella reductions, base hospital order or documented communication failure.
 - History of indirect “lever-type” trauma to knee rather than direct blow.
 - Obvious lateral displacement of knee cap to outside.
 - Knee held flexed (bent) and patient with limited ability to straighten knee voluntarily because of pain.
 - No physical findings of direct knee trauma (e.g. knee lacerations/contusions/abrasions).
 - Procedure does not delay care and transportation of life-threatening injuries.
3. Apply steady, gentle pressure from lateral (outside) to medial patella and simultaneously straighten leg.
4. If successful, knee should be immobilized in extension (straight).
5. If there are no other extremity injuries that prevent walking, patient may ambulate with immobilization (e.g. ensolite pad wrapped and secured around leg). Minimize walking unless necessary to facilitate evacuation and patient states there is no significant pain.
6. If unsuccessful, time/injuries do not permit reduction, or all indications not met, knee should be immobilized in the position it was found.
7. Reassess distal circulation, sensation and motor function.
8. Document procedure.

Notes

Deformities (fractures and/or dislocations) with distal neurovascular compromise should be reduced in an attempt to regain circulation.

Deformities (fractures and/or dislocations) with **NO** distal neurovascular compromise should be splinted in position unless reduction needed for transport.

The only three types of joints in which dislocation reduction may be attempted with intact distal neurovascular exams are shoulders, digits, and patellae.

Fracture and Dislocation Management (Reduction and Splinting)

Cross Reference

Procedures:

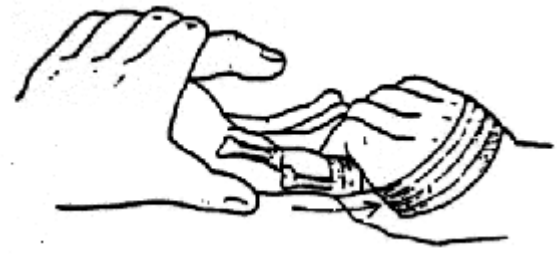
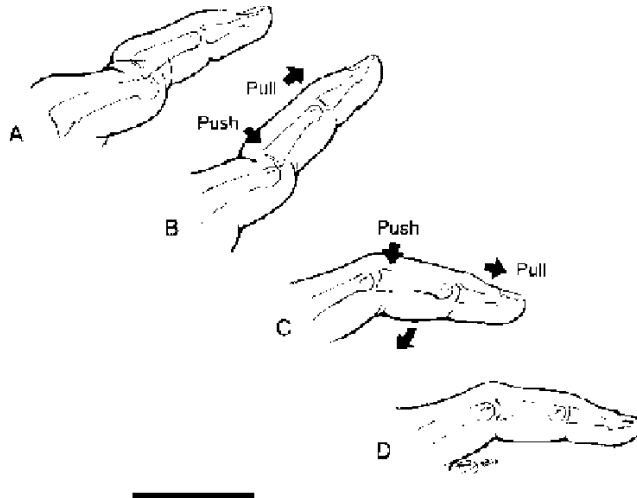
Pelvic Stabilization
Wound Care

Protocols:

Bites and Stings
Electrical and Lightning Injuries
Minor or Isolated Extremity Trauma
Trauma (Non-penetrating)
Trauma (Penetrating)

Fracture and Dislocation Management (Reduction and Splinting)

Pictures courtesy of Harcourt Health



Sciences/Clinical Procedures in Emergency
Medicine, 3rd Ed.

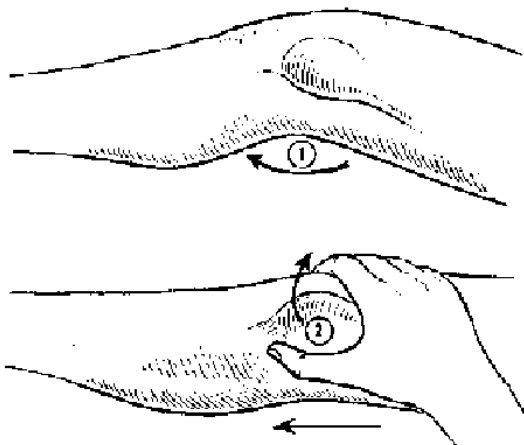


Figure 52-44 Manipulative reduction of a lateral patellar dislocation. Extend the knee gradually (1) while medially directed pressure is applied on the patella (2), pushing it over the lateral femoral condyle. (From DePalma AF: Management of Fractures and Dislocations. Philadelphia, WB Saunders, 1970, p 1665. Reproduced by permission.)

Pictures courtesy of Harcourt Health Sciences/Clinical Procedures in Emergency Medicine, 3rd Ed.

Fracture and Dislocation Management (Reduction and Splinting)



Note deformity



Intraosseous Access

Manual IO

Scope of Practice	Parkmedic.
Indications	Children 6 years of age or less. Start with an IO in pediatric arrests or shock with no easily identifiable IV site. An IO may be attempted in other situations after 3 failed IV attempts.
Contraindications	Do not place an IO in a bone that is known to be fractured.
Relative Contraindications	Placement in a bone that is suspected to contain a fracture. Placement distal to a fractured bone unless there is good distal circulation. Avoid areas with burns, infections, and contaminated wounds.
Equipment	16 or 18 gauge IO needle, 5ml syringe, 60ml syringe, IV fluid.
Complications	Infection of skin and bone; puncturing completely through the bone or into growth plate.
Procedure	<p><u>Proximal Tibia (first choice site):</u></p> <p>Support the leg with towel under the knee. Identify the target area. Mark 2cm below and medial to the tibial tuberosity so you are on the flat, medial aspect of the bone. Clean the skin with alcohol pad or Betadine. Stabilize the 16 or 18 gauge IO needle in your palm with your index finger on the skin. Enter the bone with the needle directed toward the foot along the axis of the bone at a 60-degree angle with the skin. Advance the needle firmly with a twisting motion until you feel a decrease in resistance and a crunching, indicating penetration into the bone marrow cavity. THIS DISTANCE IS USUALLY NO MORE THAN 1cm from the skin surface. Remove the stylet and see if the needle stands without support. If it does, use a 5ml syringe to aspirate. Aspiration of blood indicates successful placement, but this may not occur. If blood not aspirated, try infusing with syringe 2-3ml of NS/LR. Successful placement is indicated by successful infusion of fluid without extravasation (skin swelling). If resistance is met to fluid infusion, advancing and/or withdrawing the needle 1–3mm may improve flow. If no success with third attempt, pull needle out, apply pressure dressing over site and try the other leg. If fluid pushes easily, continue with manual bolus or medications per specific PROTOCOL. Secure needle with tape, dressing and leg board. Reassess frequently.</p> <p><u>Distal Anterior Femur (second choice site):</u> Same procedure as above, only after both tibial sites have been excluded.</p> <p>Insertion point is 3cm above the patella on the anterior femur, midline above the knee. Angle needle toward patient's head along the axis of the bone at a 60-degree angle (reference diagram). Distance from skin surface to marrow cavity varies but is usually greater than 1cm.</p>

Intraosseous Access

Notes

The “Needle” is the hollow, steel needle that is left in place, and also refers to the needle/stylet combination. The “Stylet” is the solid wire core that is removed after placement. The term “Catheter” is sometimes used in the literature to mean the “Needle.”

Once needle is in place, secure firmly or it may become dislodged.

Medication and Fluid delivery: passive gravity infusions will not work with IO lines.

Use a 60ml syringe to give fluid/boluses. All IV medications can be administered through the IO line. Flush all medications with 10ml NS/LR.

Continue attempts at IV access. If IV established, use it for fluids and medications, but keep IO backup.

IO fluids/medication administration requires some pressure with syringe or pressure bag. Gravity is insufficient for adequate flow.

Intraosseous Access



These diagrams are intended to show the angle at which the IO needle should be inserted into the leg.

Diagram A demonstrates that the angle of the needle should be approximately 10 degrees off perpendicular to angle the needle tip away from the growth plate.

Diagram B demonstrates that the angle of the needle should be approximately 10 degrees off perpendicular to allow penetration directly through the flat surface of the anterior tibia.

Intraosseous Access

EZ - IO

Scope of Practice	EMT and Parkmedic (per Local Medical Advisor approved extended scope of practice).
Indications	All ages: after 3 failed IV attempts, or initially if in shock or no adequate IV sites identified. <6 years: In pediatric code, start with IO or EZ-IO access.
Contraindications	Do not place EZ-IO in a bone that is known to be fractured. Do not place EZ-IO if there is an obvious infection at the site of insertion. Do not place EZ-IO if the site of insertion is grossly contaminated.
Relative Contraindications	Placement in a bone that is suspected to contain a fracture. Previous knee replacement on the leg being considered for EZ-IO insertion. Areas that are burned. An IO or EZ-IO placed in the same bone within the past 24 hours. Inability to locate anatomical landmarks due to significant edema at the site. Excessive tissue at insertion site (obese or excessive muscle tissue). Osteomyelitis (bone infection). Osteogenesis imperfecta (a genetic abnormality resulting in extremely brittle bones). Note: fracture of another bone (e.g. femur) proximal to the bone being considered as the insertion site is not a contraindication to use of the site as long as perfusion distal to the fracture site can be confirmed.
Equipment	EZ-IO Insertion kit, IV fluid.
Complications	Fracture of bone or damage to the growth plate; bleeding from insertion site; neurovascular injury; infection of skin or bone.
Procedure	Prepare EZ-IO driver and needle set. Open EZ-IO cartridge and attach needle set to driver; a “snap” should be felt as magnet connects. Remove needle set from cartridge. Remove safety cap from needle set. Grasp and rotate clockwise to remove. Locate appropriate insertion site (reference attached diagrams). Proximal Tibia: find the tibial tuberosity and insert IO 2cm inferior and medial, on the flat anteromedial aspect of the tibia. Distal Anterior Femur (second choice site, only if both tibias excluded): insertion point is 3cm above the patella on the anterior midline femur (above the knee). Humerus: (third choice site, only if both tibias and femurs excluded): insertion site is slightly anterior to the lateral midline of the arm at the greater tubercle. Keep patient supine with the elbow bent and shoulder exposed. Adduct the patient’s arm so that their hand is resting on their umbilicus. Firmly palpate the humeral shaft, progressing superiorly toward the humeral head until the greater tubercle is palpated. Insert needle slightly anterior to the lateral midline of the arm at the greater tubercle. Sterilize or disinfect the skin over the insertion site. Stabilize the patient’s leg/arm as appropriate near insertion site. Position EZ-IO driver at insertion site with needle at 90° angle to the surface of the bone and power needle through skin until bone is encountered. Verify that 5mm mark on catheter is visible. If mark is not visible there may be excessive tissue at the site making needle too short to penetrate the IO space. Continue insertion by maintaining 90° angle to bone surface and applying firm steady pressure as the needle is powered through the outer surface of the bone. Stop when the needle flange contacts skin, or when a sudden decrease in resistance is felt.

Intraosseous Access

Remove stylet from catheter by grasping hub with one hand and rotating stylet counterclockwise to unscrew it from the catheter. Properly dispose of stylet.
Proper placement of the catheter is confirmed through any one of the following:
Catheter stands at 90° angle to the skin and is firmly seated.
Blood at hub of catheter.
Free flow of fluid with no evidence of extravasation under the skin.
If proper insertion cannot be confirmed or catheter appears to be blocked and cannot flush, repeat procedure at another site; do not remove existing EZ-IO until successful IV/IO has been established.
Connect primed extension set to EZ-IO hub. Do not attach syringe or flow set directly to EZ-IO catheter.
Using a 10ml syringe, rapidly flush catheter with 5-10ml NS/LR.
Connect primed flow set and begin infusion. Use only for IV push and not gravity drips.
Properly dress and secure catheter with bulky gauze and cross-tape.

Notes

The “Needle” is the hollow, steel needle that is left in place, and also the needle/stylet combination. The “Stylet” is the solid wire core that is removed after placement.
The term “Catheter” is sometimes used in the literature to mean the “Needle.”
Once needle is in place, secure or it may become dislodged.
Medication and Fluid delivery: passive gravity infusions will not work with IO lines.
Use a 60ml syringe to give fluid/boluses. All IV medications can be administered through the IO line. Flush all medications with 10ml NS/LR.
Continue attempts at IV access. If IV established, use it for fluids and medications, but keep IO backup.

Cross Reference

Procedures:

IV Access and IV Fluid Administration

Protocols:

Abdominal Pain (Injuries)
Allergic Reactions
Altered Mental Status/Altered Level of Consciousness
Bites and Stings
Burns
Cardiac Arrest Without AED
Electrical and Lightning Injuries
Eye Trauma
Heat Illness
Ingestion/Poisoning
Minor and Isolated Extremity Trauma
Seizures
Shock Without Trauma and Dehydration
Trauma Arrest
Trauma (Non-Penetrating)
Trauma (Penetrating)

IV Access and IV Fluid Administration

Scope of Practice	Parkmedic.												
Indications	IV fluid or medications.												
Contraindications	None.												
Relative Contraindications	IV placement in an extremity with a <u>suspected</u> fractured bone.												
Complications	Bleeding, infection, vein or tissue damage from extravasation.												
Vascular Access	<table border="0" style="width: 100%;"> <tr> <td style="width: 30%;">Adults:</td> <td style="width: 30%;">TKO or maintenance fluids:</td> <td style="width: 40%;">(1) 18–20 gauge IV catheter.</td> </tr> <tr> <td></td> <td>Signs/symptoms/high risk for shock:</td> <td>(2) 14–18 gauge IV catheters.</td> </tr> <tr> <td>Pediatrics:</td> <td>Medications:</td> <td>Appropriate size for vein.</td> </tr> <tr> <td></td> <td>Volume resuscitation:</td> <td>(2) largest age-appropriate IV catheters.</td> </tr> </table>	Adults:	TKO or maintenance fluids:	(1) 18–20 gauge IV catheter.		Signs/symptoms/high risk for shock:	(2) 14–18 gauge IV catheters.	Pediatrics:	Medications:	Appropriate size for vein.		Volume resuscitation:	(2) largest age-appropriate IV catheters.
Adults:	TKO or maintenance fluids:	(1) 18–20 gauge IV catheter.											
	Signs/symptoms/high risk for shock:	(2) 14–18 gauge IV catheters.											
Pediatrics:	Medications:	Appropriate size for vein.											
	Volume resuscitation:	(2) largest age-appropriate IV catheters.											
Fluid Delivery	<table border="0" style="width: 100%;"> <tr> <td style="width: 30%;">Adults:</td> <td style="width: 70%;">All IVs: macrodrip set (10–15 drops/ml).</td> </tr> <tr> <td>Pediatrics:</td> <td>All IVs: measured-volume solution administration set (Volutrol).</td> </tr> <tr> <td>0-6 years:</td> <td>All IOs: bolus with 60ml syringe, not Volutrol.</td> </tr> </table>	Adults:	All IVs: macrodrip set (10–15 drops/ml).	Pediatrics:	All IVs: measured-volume solution administration set (Volutrol).	0-6 years:	All IOs: bolus with 60ml syringe, not Volutrol.						
Adults:	All IVs: macrodrip set (10–15 drops/ml).												
Pediatrics:	All IVs: measured-volume solution administration set (Volutrol).												
0-6 years:	All IOs: bolus with 60ml syringe, not Volutrol.												

IV Fluid

Saline lock or TKO: may generally use interchangeably if fluid or medication not currently required but may be in future (exceptions are noted in specific PROTOCOLS). Saline lock avoids IV line entanglement during complex extrications, however TKO allows for immediate administration of fluids as needed.

Maintenance fluids: stable patients with no contraindications to fluid (pulmonary edema):

Adults:	120ml/hr (macrodrip 1 drop every 2-3 seconds).
Pediatrics:	2 ml/kg/hr or reference Broselow tape.

Fluid challenge:

Adults (SBP80-100 or HR>100):	500ml bolus (recheck vitals after bolus).
Pediatrics:	Bolus only - no challenge indicated.

Fluid bolus:

Adults:	(SBP<80):	1-L bolus wide open under pressure.
	Repeat SBP<80:	Repeat bolus once, then contact base.
Pediatrics:	Shock, indicated by protocol:	20ml/kg bolus.
	If no improvement:	Repeat bolus once then contact base.

Pediatric Shock: SBP<(70+2x age in years) per PROTOCOL: *Pediatric Parameters*.

In the case of fluid challenge or bolus: Contact base as soon as possible. If communication failure, continue per guidelines to a maximum of 3-L in adults and 60ml/kg in pediatrics.

	<u>TKO</u> Stable	<u>Maintenance</u> Stable	<u>Challenge</u> At risk	<u>Bolus</u> Shock	<u>Maximum</u> Shock
ADULT	TKO	120ml/hr	SBP80–100 or HR>100 500ml bolus	SBP<80 1-L bolus	3-L
1-14 yrs	TKO	2 ml/kg/hr or Broselow	No challenge; use bolus	SBP<(70+2x age in years) 20ml/kg	60ml/kg

Fluid Challenge or Bolus Procedure

Check vitals and lung exam after each fluid challenge/bolus.

As vitals change refer back to the table above for fluid guidelines (i.e. initial SBP=80, give 1-L bolus; recheck SBP=90, give 500ml bolus; recheck.)

If signs of pulmonary edema (crackles, respiratory distress, increased respiratory rate) develop during IV fluid administration, decrease to TKO and contact base for fluid orders.

Notes

If PROTOCOL orders IV fluid, refer to this PROCEDURE for gauge, IV number, and fluid rate. If IV fluid orders differ from this it will be indicated in the specific PROTOCOL.

If it is likely that patient will not be transported, contact base prior to IV attempts.

IV Access and IV Fluid Administration

Cross Reference

Procedures:

Intraosseous (IO) Access

Protocols:

Abdominal Pain (Injuries)
Allergic Reactions
Altered Mental Status/Altered Level of Consciousness (ALOC)
Bites and Stings
Burns
Cardiac Arrest Without AED
Electrical and Lightning Injuries
Eye Trauma
Heat Illness
Ingestion/Poisoning
Minor or Isolated Extremity Trauma
Seizures
Shock Without Trauma and Dehydration
Trauma Arrest
Trauma (Non-Penetrating)
Trauma (Penetrating)

King Tube

Scope of Practice	EMT (per Local Medical Advisor approved extended scope of practice) and Parkmedic.
Indications	ALL must be present: Patient appears to be ≥ 4 feet tall (Broselow tape is 4 feet at blue/orange junction). GCS ≤ 6 . Apneic or agonal respirations ≤ 6 per minute.
Contraindications	Do not use if ANY are present: Patient appears to be < 4 feet tall. Known esophageal pathology (e.g. cancer). Suspected hydrocarbon or caustic ingestion. Suspected narcotic overdose prior to administration of Naloxone; King LT(S)-D Tube may be attempted in suspected narcotics overdose if unresponsive to Naloxone. Upper airway obstruction.
Equipment	King LT(S)-D Tube (size 3, 4 or 5), syringe to inflate balloon (60ml), suction.
Procedure	<ol style="list-style-type: none">1. Maintain C-spine precautions if indicated.2. Have suction equipment available and ready.3. Pre-oxygenate with BVM and oxygen at 15 L/min for minimum one minute prior to King LT(S)-D Tube placement.4. Choose appropriate-sized tube based on patient height: 4–5 ft: Size 3. 5–6 ft: Size 4. >6 ft: Size 5.5. Check integrity of balloon by fully inflating it briefly.6. King LT(S)-D Tube placement: Lubricate tube with KY jelly or water. If present, remove dentures, broken teeth or OPA. Lift tongue and lower jaw with non-dominant hand (grip tongue with gauze). Hold King LT(S)-D Tube in dominant hand so that distal tip curves up. With the King LT(S)-D Tube rotated laterally 45-90° such that the blue orientation line is touching the right corner of the mouth, introduce tip into mouth and advance behind the base of the tongue. As the King LT(S)-D Tube tip passes over and behind the tongue, rotate the tube back to midline (blue orientation line faces chin). Advance King LT(S)-D Tube until base of connector aligns with teeth or gums. King LT(S)-D Tube should be placed within 30 seconds. If unable to properly place tube within 30 seconds, stop, insert OPA/NPA, pre-oxygenate for one minute, and reattempt tube placement.7. Fully inflate balloon using the maximal volume of the syringe included in the kit (60ml).8. Ventilate patient with bag-valve and 15L/min oxygen.9. Verify King LT(S)-D Tube placement: Look for chest rise. Listen with stethoscope for absence of epigastric air entry while bagging. Listen with stethoscope for breath sounds in both axillae while bagging. If air is leaking around balloon and out of patient's mouth, add small quantities of air to the balloon (5-10ml at a time) to ensure oropharyngeal seal. If unable to ventilate with King LT(S)-D Tube, remove tube, insert OPA/NPA and ventilate with BVM. If still unable to ventilate, consider TTJI per PROCEDURE: <i>Transtracheal Jet Insufflation</i>.10. Secure King LT(S)-D Tube as soon as possible.11. Reassess adequate tube placement every time patient is moved, per Step 9.

King Tube

Notes

Do not delay BLS airway, ventilations, CPR, or AED in order to place King LT(S)-D Tube.

The gastric access lumen allows the insertion of up to an 18 Fr diameter OG tube into the esophagus and stomach.

If unable to fully insert the King LT(S)-D Tube despite changing the angle of insertion, remove the tube, coil it tightly to increase its curvature, and then reinsert it quickly before it fully uncoils.

If narcotic overdose is suspected as the cause of ALOC, give Naloxone (Narcan) per **PROTOCOL: Altered Mental Status/Altered Level of Consciousness (ALOC)** prior to inserting the King LT(S)-D Tube. If no effect, insert tube as indicated.

Cross Reference

Procedures:

Transtracheal Jet Insufflation

Protocols:

Abdominal Pain (Injuries)
Allergic Reactions
Altered Mental Status/Altered Level of Consciousness (ALOC)
Bites and Stings
Burns
Cardiac Arrest Without AED
Electrical and Lightning Injuries
Heat Illness
Ingestion/Poisoning
Seizures
Shock Without Trauma and Dehydration
Trauma Arrest
Trauma (Non-Penetrating)
Trauma (Penetrating)

Drugs:

Naloxone (Narcan)

Mucosal Atomizer Device (MAD)

Scope of Practice	Parkmedic.
Indications	Administration of approved medications intranasally.
Contraindications	None, although administration may be less effective with nasal obstruction.
Side Effects	Possible choking.
Equipment	Mucosal Atomizer Device; 3ml syringe, medication.
Procedure	Fill syringe with desired medication. Attach Mucosal Atomizer Device to tip of syringe. Patient to blow nose to optimize absorption surface Split dose between both nares. Insert Mucosal Atomizer Device into nostril and depress syringe with sufficient force to atomize medication. The Mucosal Atomizer Device may be used in all body positions.

Cross Reference

Protocols:

Abdominal Pain (Injuries)
Altered Mental Status/Altered Level of Consciousness (ALOC)
Bites and Stings
Burns
Electrical and Lightning Injuries
Eye Trauma
Ingestion/Poisoning
Minor or Isolated Extremity Trauma
Seizures
Trauma (Non-Penetrating)
Trauma (Penetrating)

Drugs:

Fentanyl
Midazolam (Versed)
Naloxone (Narcan)

NAAK/MARK I

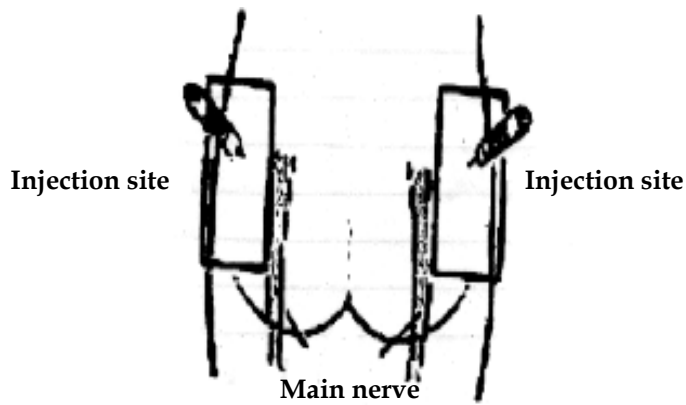
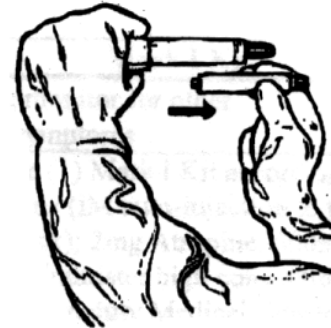
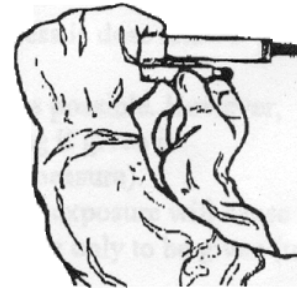
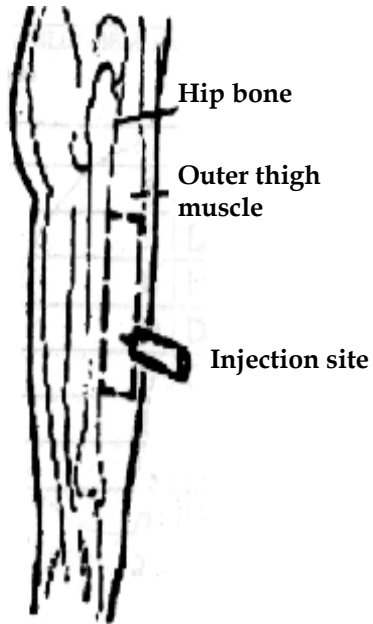
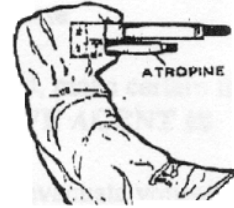
Scope of Practice	EMT and Parkmedic.
Indications	Patient or provider who is exposed to <u>and</u> symptomatic from nerve agent or organophosphate with multiple symptoms of the toxidrome: AB-SLUDGEM (Altered mental status; Bronchorrhea, Breathing difficulty or Bradycardia; Salivation, Sweating or Seizures; Lacrimation; Urination; Defecation or Diarrhea; GI upset (abdominal cramps); Emesis; Miosis/Muscle twitching). Multiple patients with multiple symptoms makes the diagnosis more likely.
Contraindications	Use of Mark I kit in patients who in fact do not have nerve agent/organophosphate exposure. A single symptom of AB-SLUDGEM will almost certainly not be due to a poisoning. As prophylaxis against suspected nerve agents/organophosphate exposure (The kit will <u>not</u> protect from an anticipated exposure).
Equipment	NAAK/Mark I kit: Atropine 2mg (one dose/auto-injector). 2 PAM (Pralidoxime Chloride), 600mg (one dose/auto-injector).
Complications	Atropine: tachycardia, headache, ALOC, agitation, hypertension, fever, blurred vision. 2 PAM: dizziness, weakness, tachycardia, headache, hypertension, nausea, blurred vision.
Procedure	Referencing attached diagram, remove NAAK/Mark I from its storage location. With the NON-DOMINANT HAND , hold the auto-injectors by the plastic clip so the large auto-injector is on top and the kit is positioned in front at eye level. With the other hand, check the injection site (buttocks or thigh) for buttons or other objects that might interfere with injections. Grasp the Atropine auto-injector (green-tipped, marked with “1”) with the thumb and first two fingers of the dominant hand then pull the auto-injector away from the plastic clip in a smooth motion. Hold the auto-injector like a pen or pencil (between the thumb and first two fingers). Position the green tip of the auto-injector against the injection site (thigh or buttocks). Holding injector in dominant hand, apply firm, even pressure (not a jabbing motion) to the injector until it pushes the needle into the thigh or buttocks. Hold the injector in place for at least ten (10) seconds (estimated by counting “one-one-thousand, two-one-thousand” and so forth). Carefully remove the auto-injector from the injection site and place into a sharps container. Pull the 2-PAM auto-injector out of the plastic clip and inject using the procedure described for Atropine. For moderate symptoms give two stacked doses of both components of Mark I kit. For severe symptoms give three stacked doses of both components of Mark I kit. Return to PROTOCOL: <i>Ingestion/Poisoning</i> . Do not administer charcoal in PROTOCOL: <i>Ingestion/Poisoning</i> .
Notes	Attempt base contact for all suspected nerve agent/organophosphate exposures. For persistent symptoms, certified providers should give Atropine (preferably IV, alternatively IM) 2mg every 5 minutes until no respiratory secretions per PROTOCOL: <i>Ingestion/Poisoning</i> . Attend to scene safety. Do not enter any area where nerve agent or massive quantity of organophosphate is suspected/present without proper personal protection. If you or your partner are exposed AND symptomatic, evacuate from the area. Remove all clothing from any symptomatic person.

Cross Reference

Protocols:
Ingestion/Poisoning

Drugs:
Atropine
Pralidoxime Chloride (2 PAM)

NAAK/MARK I



Needle Thoracostomy

Scope of Practice	Parkmedic (EMT B/EMR per Local Medical Advisor approved extended scope of practice with TEMS training).
Indication	<p>Traumatic cardiac arrest: perform bilateral needle thoracostomies. If not in traumatic arrest.</p> <p>Clinical situation:</p> <ul style="list-style-type: none">*Penetrating Chest Trauma orSuspected pneumothorax from blunt trauma orSuspected spontaneous pneumothorax from COPD/Asthma <p>*NOTE: For EMTB/EMR penetrating chest trauma is the only indication in which needle thoracostomy is an approved scope of practice.</p> <p>Patient signs and symptoms: <u>all of the following must be present</u></p> <ul style="list-style-type: none">Severe respiratory distress (> 8yrs-Adults: RR<10 or >24; 0-8yrs: RR<10 or >40).Hemodynamic compromise, loss of radial pulse.Distended neck veins (with hypovolemia this may be absent, with strong suspicion of significant blood loss, proceed with needle decompression)
Contraindications	None, if above conditions are satisfied.
Equipment	14 gauge IV catheter ≥ 3.25 inches long; consider one-way flutter device or valve constructed with finger of a glove. (10-14 gauge needles are all acceptable if ≥ 3.25 inches in length).
Procedure	<p>Prep site with aseptic agent unless patient in traumatic arrest. If using glove fingertip for one-way valve, place on IV catheter prior to insertion. Insert the catheter immediately above the third rib (second intercostal space), mid-clavicular line, on the side of the decreased breath sounds, opposite the side of tracheal deviation (i.e. if the trachea is deviated to the left, needle should be inserted in the right chest).</p> <p>Once air returns, simultaneously remove the needle and advance catheter only to the hub. If catheter hub reaches chest wall without an air rush, remove needle and leave catheter in place. Needle thoracostomy may attempted additional times, with manual displacement of chest wall tissue (may occur with obese or extremely muscular patients). Site of additional attempts should be within 1cm of original site. Stabilize the catheter perpendicular to the chest. Consider flutter valve constructed of glove finger. Reassess the patient, including distress, breath sounds and vital signs.</p>
Notes	Use caution when placing catheter thru second intercostal space to avoid nerve, vein, and artery on the underside of the second rib. Keep catheter as close to the upper edge of the third rib as possible.

Cross Reference

Protocols:

Trauma Arrest
Trauma (Non-Penetrating) - Parkmedic scope only
Trauma (Penetrating)

Oxygen Administration

Scope of Practice	EMT and Parkmedic.
Indications	Abnormal respiratory rate: Adult: RR<10 or RR>24. Pediatric: Per PROTOCOL: <i>Pediatric Parameters</i> . Respiratory distress, cyanosis, inhalation injuries, or aerosol exposure. Chest pain of possible cardiac or pulmonary cause. An irregular heart rhythm (pulse) or <u>abnormal</u> heart rate. Adults: HR<50 or HR>120. Pediatric: Per PROTOCOL: <i>Pediatric Parameters</i> . Shock from any cause. Significant multiple system trauma. Acute altered mental status or any acute neurologic symptom (syncope, seizure, stroke, numbness, etc.). Any other indication specifically covered in applicable PROTOCOL.
Contraindications	None.
Equipment	Oxygen tank, nasal cannula, nonrebreather oxygen mask.
Complications	In COPD patients, may cause sleepiness (from carbon dioxide narcosis/retention) and respiratory depression. However, do not withhold oxygen from patients in respiratory distress. If a COPD patient develops respiratory depression after receiving oxygen, assist respiration with BVM.
Dosage/Route	Mild distress or stable vitals: <u>Low Flow</u> nasal cannula (2–6L/min). Severe distress, unstable vitals, or ALOC: <u>High Flow</u> nonrebreather mask (10-15L/min). Keep reservoir bag inflated. Apnea or respiratory depression (too slow, too shallow): assist respirations: BVM with supplemental oxygen (15 liters/min). COPD patients (by history/exam or on home oxygen): Start oxygen at 2 liters/min by nasal cannula. If patient is still cyanotic or markedly dyspneic, gradually increase oxygen until cyanosis clears. If still cyanotic or markedly dyspneic on 6 liters/min by nasal cannula, change to high flow. Prepare to assist with BVM.
Notes	In every PROTOCOL where oxygen is indicated, use dosage/route above to determine proper oxygen administration. Exceptions will be noted in each individual PROTOCOL. In every PROTOCOL, if pulse oximetry available, titrate oxygen to keep saturation >94%. Exception: If a patient requires assistance by BVM, the target saturation is 100%.

Cross Reference

Protocols:

Abdominal Pain (Injuries)	Seizures
Allergic Reactions	Shock Without Trauma and Dehydration
Altered Mental Status/Altered Level of Consciousness (ALOC)	Trauma Arrest
Bites and Stings	Trauma (Non-Penetrating)
Burns	Trauma (Penetrating)
Cardiac Arrest Without AED	Upper Airway Obstruction (Mechanical)
Electrical and Lightning Injuries	
Ingestion/Poisoning	

Pelvic Stabilization

Traumatic Pelvic Orthotic Device (T-POD)

Scope of Practice	EMT and Parkmedic.
Indications	Splinting of suspected open-book pelvic fracture in a patient with or without shock.
Contraindications	Signs of respiratory distress or pulmonary edema. Suspected myocardial infarction. Penetrating trauma above the T-POD, including to the back.
Side Effects	Possible risk of re-bleeding with application or removal if patient has already clotted. Possible worsening hypotension due to application OR rapid removal. Pulmonary edema, aspiration. Respiratory compromise from decreased lung expansion due to abdominal compartment compression.
Equipment	Stethoscope, blood pressure cuff, T-POD (Traumatic Pelvic Orthotic Device).
Procedure	Maintain spinal precautions if indicated. IV access is established, or three unsuccessful attempts (IV limited to upper extremities). Continue IV fluids per PROCEDURE: <i>IV Access and IV Fluid Administration</i> . Log roll patient onto open T-POD, wrapping the fabric belt around the supine patient. Fit T-POD around the pelvis at the level of the greater trochanters (ideally the belt should cover the buttocks). Cut excess belt in front leaving a 6-8 inch gap of exposed abdomen. Apply pulley system/power unit to each side of the belt and slowly draw tension until snug, providing simultaneous circumferential compression of the pelvic region. NOTE: in male patients make certain genitalia are elevated out of groin area. Care provider should be able to insert two fingers between the patient and T-POD. After tightening, and every 15 minutes thereafter, check vitals; evaluate for respiratory distress, pulmonary edema, and chest pain. Document vitals and time device was applied.
Notes	If an obese patient requires a T-POD, two belts may be affixed together using one power unit as an extender and the other as the pulley. Monitor pulse and blood pressure every 15 minutes, or per local medical advisor approved EMS policy. If T-POD remains on the patient longer than 24 hours, skin integrity should be checked and evaluated every 12 hours. Children <50lbs (23 Kg) may be too small to obtain the 6 inch gap needed for closure.

Pelvic Stabilization

Sheet Stabilization

Scope of Practice	EMT and Parkmedic.
Indications	Splinting of suspected open-book pelvic fracture in a patient with or without shock.
Contraindications	Signs of respiratory distress or pulmonary edema. Suspected myocardial infarction. Penetrating trauma above the pelvis, including to the back.
Side Effects	Possible risk of re-bleeding with application or removal if patient has already clotted. Possible worsening hypotension due to application OR rapid removal. Pulmonary edema, aspiration. Respiratory compromise from decreased lung expansion due to abdominal compartment compression.
Equipment	Stethoscope, blood pressure cuff, sheet.
Procedure	Maintain spinal precautions if indicated. IV access is established, or three unsuccessful attempts (IV limited to upper extremities). Continue IV/IO fluids per PROCEDURE: <i>IV Access and IV Fluid Administration</i> . Prepare sheet: take rectangular sheet, and fold it in half lengthwise, then fold it again in half lengthwise. The folded width of the sheet should be one quarter of its original width, but the length should be the same. The folded width should be able to fully span the axial length of the pelvis with >5cm overhang on both sides. Slide sheet underneath buttocks with the patient centered on length of the sheet. Wrap sheet around the pelvis at the level of the greater trochanters. Cross tails of sheet over anterior pelvis and apply slow, steady force to the tails of the sheet by pulling them away from each other while centered over the patient's pelvis. This should provide simultaneous circumferential compression of the pelvic region. Tie sheet tails in square knot snugly. NOTE: in male patients make certain genitalia are elevated out of groin area. After tying, and every 15 minutes thereafter, check vitals; evaluate for respiratory distress, pulmonary edema, and chest pain. Document vitals, time and date sheet was applied.
Notes	Monitor pulse and blood pressure every 15 minutes, or per local medical advisor approved EMS policy.

Cross Reference

Procedures:
IV Access and IV Fluid Administration

Protocols:
Trauma (Non-Penetrating)
Trauma (Penetrating)

Spine Immobilization

Scope of Practice	EMT and Paramedic.
Indications	<p>Spine immobilization in Tactical EMS settings, especially care under fire is a low priority based on situational risk. C-Spine stabilization in penetrating trauma is of little benefit. Blunt trauma; apply spinal immobilization based on risk of situation vs. potential benefit. Reassess injury once the tactical situation allows.</p> <p>Any patient with a history of trauma, or found in the setting of potential trauma (including near-drowning) who meets <u>any</u> of the following criteria:</p> <ul style="list-style-type: none">Unstable Patient: per PROTOCOL: <i>Trauma(Penetrating), Trauma(Non-Penetrating)</i>.Pain: complaining of neck or back pain (without language barrier).Tenderness: midline posterior neck or back tenderness.Altered Mental Status: <u>either</u> GCS<15 <u>or</u> evidence of intoxication (drugs/alcohol).Distracting Injury: any injuries which appear to be distracting patient from identifying neck or back pain (e.g. major fractures).Neurologic Deficit: any numbness, tingling or weakness not obviously explained by a co-existing extremity fracture.Restricted or Painful Range of Motion: <u>if</u> a patient meets <u>none</u> of the previous criteria, then ask them to rotate their head slowly from side to side and to flex and extend their neck. If they are unable/unwilling to do so or describe pain or numbness/tingling in their arms or legs they should be immobilized.
Equipment	Backboard, rigid cervical collar, tape, straps, head supports.
Procedure	<p>Complete spinal immobilization should ideally include rigid cervical collar, backboard, strapping of torso/extremities, head support and taping of head to board; this permits patient to be turned on their side in case of vomiting, without movement of the spine. In the event that such equipment is not immediately available, immobilization can be maintained manually, using a blanket roll or other improvised bilateral head supports that prevent rotation and flexion. Specific attempts at improvising a collar need not be made. Before and after placing a patient in spinal precautions, check circulation, sensory and motor function.</p>
Notes	<p>Children injured in motor vehicle collisions shall be immobilized and transported in their car seats whenever possible. Small children immobilized on a board will often require padding behind their torso to maintain neutral position because of their relatively large head.</p> <p>Booster seats, designed for children 40-80 pounds, are NOT adequate for spinal immobilization.</p> <p>When placing a patient in C-spine precautions, splint head-to-pelvis with no lateral movement of pelvis/legs; limited bending at the hips is permissible for comfort.</p> <p>When placing a patient in T-spine precautions, splint head-to-pelvis and immobilize legs at the hips; padding the pelvis for comfort is permissible.</p> <p>When placing a patient in L-spine/pelvis precautions, also splint the T-spine, pelvis, and hips; the neck and head may be free for patient comfort.</p> <p>When any doubt or communication barrier exists, err on the side of immobilization. This is especially true in the elderly, mentally disabled, and patients with whom you have a language barrier.</p>

Spine Immobilization

Cross Reference

Protocols:

Altered Mental Status/Altered Level of Consciousness (ALOC)

Electrical and Lightning Injuries

Seizures

Trauma (Non-Penetrating)

Trauma (Penetrating)

Transtracheal Jet Insufflation

Scope of Practice	Parkmedic.
Indications	Complete airway obstruction not relieved by manual procedures. Inability to insert ALS airway and inability to successfully ventilate using BVM ventilation.
Equipment	10ga IV catheter, 3.5mm ET tube adapter, bag valve.
Complications	Bleeding; misplacement damaging lung, vocal cords, and/or esophagus.
Procedure	Locate cricothyroid membrane; it is the indentation below the thyroid cartilage (Adam's apple), between thyroid cartilage and 1 st tracheal ring. Insert 10 gauge IV catheter through the membrane at a 45° angle, directed toward the feet. Aspirate for air return with a syringe to check placement; proper placement is usually ½” - ¾” deep to skin surface. Remove needle while advancing catheter. Stabilize catheter securely to neck. Attach 3.5mm ET tube adapter to catheter. Ventilate with Bag-Valve with oxygen at 15 L/min per PROCEDURE: <i>Oxygen Administration</i> . If available, use oxygen-powered breathing device. Check for proper placement in the following order: Assess chest rise. Verify absence of gastric sounds. Check adequacy of breath sounds. Assess for complications; reassess ventilation and placement if subcutaneous air is noted. Reassess placement every time patient is moved. Sometimes proper placement is difficult to assess. Do not just rely on the indicators listed above. Continual clinical reassessment for adequate ventilation is essential.
Notes	TTJI is a temporizing measure and will not adequately ventilate a patient if used for more than 20–30 minutes. Continue attempts to obtain an advanced airway and remove any obstruction. Due to the small caliber of this rescue airway, a prolonged expiration phase is often encountered. Allow adequate time for exhalation.

Cross Reference

Procedures:
Oxygen Administration

Protocols:
Upper Airway Obstruction (Mechanical)

Wound Care

Scope of Practice

EMR, EMT and Parkmedic.

Indications

Any significant skin/soft-tissue injury (e.g. open blister, abrasion, burn, puncture, laceration, open fracture, avulsion, amputation).

Procedure

Control bleeding in order to further assess wound.

1. Utilize direct pressure. Well-aimed direct pressure to the source of most bleeding with a gloved hand and dressing will stop most bleeding. If bleeding continues, temporarily remove dressing to ensure that direct pressure is being appropriately applied to the source of bleeding. Pack wound if needed for additional bleeding control. Bandage wound to keep dressing in place.
2. If bleeding continues, attempt the use of a pressure dressing to control bleeding.
3. If necessary a tourniquet may be required for severe or difficult to control bleeding.
4. Once bleeding control has been achieved continue with wound care as listed below.
5. Frequently reassess wounds to ensure bleeding hasn't returned.

Tourniquets

Tourniquets should be used if:

1. There is life threatening or uncontrollable bleeding to any extremity.
2. An MCI, Tactical, or Technical situation occurs where extremity bleeding is occurring and there are limited resources or ability to apply direct pressure for initial bleeding control.

Guidelines: The tourniquet should be: at least 1-1.5 inches wide, applied directly to exposed skin, unless "under fire" or unsafe, then place over clothing, as close to the wound as possible, not over a joint. If available, a blood pressure cuff may be used and inflated 20 mmHg above systolic blood pressure, with frequent rechecking to ensure cuff has not lost pressure.

An appropriately applied tourniquet should occlude both venous and arterial blood flow and is often painful. **If a distal pulse is present, the tourniquet is not tight enough.**

Note: Once placed, tourniquets should be left in place and rapid transport should be initiated/arranged. Base contact should be made early if tourniquet applied (see special considerations for prolonged care/tourniquet removal).

CAT Tourniquet

Application Procedure

1. Wrap band around the extremity and pass the free (running) end through the inside slit of the buckle – or – insert the wounded extremity through the loop of the self-adhering band.
2. Pass band through the outside slit of the buckle.
(This utilizes the Friction Adaptor Buckle, which will lock the band in place.)
3. Pull the band tight and securely fasten the band back on itself.
4. Twist the windlass rod until bleeding has stopped and no distal pulse.
5. Lock the rod with the clip.
6. Secure the rod with the strap.
7. Document time of application



Wound Care

Wound Care

Gently remove any foreign material (except impaled objects), but do not delay transport if patient is unstable.
Remove any constricting items (rings, watches, etc.)

Irrigation:

For any open wounds - Irrigate with approximately 100 ml per centimeter of wound-length using NS/LR, sterile water, or potable water as available. Pressure irrigation using 18 gauge IV catheter and syringe is preferred. If bleeding is or was heavy, do not disturb clots to irrigate.

Burns < 15% TBSA can be gently rinsed. Do not use high pressure lavage.

Note: Do not use iodine, hydrogen peroxide, alcohol, or other antiseptics for irrigation.

Note: Wounds that should not be irrigated include:

Actively bleeding wounds

History of arterial bleeding (see special considerations – tourniquets)

Punctures below skin surface (inside the cavity)

Burns > 15% TBSA

Analgesia/Oral Antibiotics: Administer pill pack, Acetaminophen (Tylenol), Ibuprofen (Motrin/Advil), Levofloxacin (Levaquin)

Antibiotic ointment per DRUG: *Bacitracin* apply to abrasions and burns < 15% TBSA and if transport time > 2 hours.

DO NOT apply to large burns, deep wounds, puncture wounds or impaled objects.

Apply bandage and dressing to cover wound.

Reassess distal circulation, sensory and motor function every 30 minutes during transport. If compromised, loosen constricting bandages.

Specific wounds/situations:

Amputations: gently rinse the amputated part; wrap in moist, clean cloth or gauze, and place in water tight plastic bag. DO NOT IMMERGE PART DIRECTLY IN WATER OR ICE. Place bag in ice water or a cool water bath and transport with patient. Do not delay transport looking for amputated tissue. Consider helicopter transport as replantation success is highly time-dependent.

Impaled objects: stabilize in place unless they interfere with transport or ventilation. If shortening or removal is required for either reason, base hospital contact/communication failure orders apply.

Large, deep or gaping wounds should be splinted, especially if near joints; per PROTOCOL: *Fracture/Dislocation Management*.

Base contact is advised, if possible, for any questions/unusual circumstances

If wound to eye is suspected, REFERENCE PROTOCOL: *Eye Trauma*. Do not apply Bacitracin to eye.

Wound Care

SPECIAL CONSIDERATIONS

Tourniquets

Do not attempt removal/deflation of a tourniquet if the patient is in shock.

Tourniquet should not be removed by EMS, **UNLESS:**

1. Tourniquet was placed initially in MCI, technical or tactical environments where little assessment was performed. Once the scene is stabilized and assessment/treatment can continue, the tourniquet may be loosened and bleeding assessed and managed as above.
2. Prolonged care (more than 2 hours) is encountered. Base contact should be attempted to discuss tourniquet removal, if Base unavailable and vital signs are stable (SBP > 90), slowly deflate/release tourniquet to assess bleeding/circulation and with the goal of completely loosening the tourniquet. Do not remove tourniquet from limb, only loosen, in case reapplication is needed. When deflating/releasing a tourniquet, if life-threatening bleeding returns, immediately reapply tourniquet. If mild bleeding returns, attempt to use direct pressure and pressure dressing as described above. Careful monitoring is necessary to ensure bleeding does not return, and swelling of limb doesn't cause compromised blood flow.

As tourniquet is being released, if no bleeding is noted, care should be taken to not create a venous tourniquet (occluding venous flow from the extremity while allowing arterial flow to resume). This may cause pressure to build up in the extremity and cause compartment syndrome or bleeding to resume.

Tourniquets left in place for more than 12 hours should be left in place until definitive care is reached.

After placing a tourniquet that successfully controls bleeding, wound irrigation can be considered within the irrigation parameters above if transport is prolonged.

Cross Reference

Protocols:

Bites and Stings
Burns
Electrical and Lightning Injuries
Eye Trauma
Fracture/Dislocation Management
Minor or Isolated Extremity Trauma
Trauma (Non-Penetrating)
Trauma (Penetrating)

Drugs:

Acetaminophen (Tylenol)
Bacitracin
Ibuprofen (Motrin, Advil)
Levofloxacin (Levaquin)

ABDOMINAL PAIN (INJURIES)

EMT Standing Orders

1. Scene Safety Follow #1-#5 TCCC Care Under Fire Guidelines. **REFERENCE** 0010-T
TacMedGeneral Information
2. XABCs Stop exsanguinating external hemorrhage if tactically feasible. Direct patient to control hemorrhage by self-aid if able.
Protect airway with OPA/NPA, assist ventilation, and suction as needed.
If signs of trauma, **GO TO PROTOCOL: Penetrating or Non-penetrating Trauma.**
3. Assessment Vitals, PQRST, fever, vomiting/diarrhea, tenderness.
If signs/symptoms of shock, **GO TO PROTOCOL: Shock without Trauma.**
4. Oxygen **IF AVAILABLE:** per PROCEDURE: *Oxygen Administration*
5. Administer/
Take Pill Pack Adults: Acetaminophen 500mg PO x 2 (1 gram total) PRN Pain
Ibuprofen 800mg PO x 1 PRN Pain
Levofloxacin 750 mg PO x 1 PRN Open Wound
6. Transport/
ALS Backup Consider air transport for abnormal vitals, active bleeding, syncope, ALOC, seizures, trauma, or absent distal pulses.
7. Base Contact If tactically feasible for further orders. (See Special Considerations.)

ABDOMINAL PAIN (INJURIES)

Parkmedic Standing Orders

1. Scene Safety Follow #1-#5 TCCC Care Under Fire Guidelines. **REFERENCE** 0010-T
TacMed General Information
2. XABCs Stop exsanguinating external hemorrhage if tactically feasible. Direct patient to control hemorrhage by self-aid if able.
Protect airway with OPA/NPA or ALS airway if indicated (*King Tube*), assist ventilation, and suction as needed
If signs of trauma, **GO TO PROTOCOL: Trauma (Non-Penetrating); Trauma (Penetrating)**.
3. Assessment Vitals, PQRST, fever, vomiting/diarrhea, tenderness
If signs/symptoms of shock, **GO TO PROTOCOL: Shock without Trauma**.
4. Oxygen **IF AVAILABLE:** per PROCEDURE: *Oxygen Administration*
5. Administer/
Take Pill Pack Adults: Acetaminophen 500mg PO x 2 (1 gram total) PRN Pain
Ibuprofen 800mg PO x 1 PRN Pain
Levofloxacin 750 mg PO x 1 PRN Open Wound
6. Ondansetron
(Zofran ODT) Adult: If nausea or vomiting:
SL: 4mg x 1, repeat in 15 min x 2 PRN
7. Fentanyl
(Sublimaze) Adults: IV/IO/IN: 50-100 mcg every 5-15 minutes
IM: 50 - 100 mcg every 15 minutes
Recheck vitals and mental status before and after each dose
Administer **ONLY** if SBP > 100 and normal mental status.
8. IV/IO Fluids per PROCEDURE: *IV/IO Access and IV Fluid Administration*.
9. Ondansetron
(Zofran) Adult: If nausea or vomiting:
IV/IO: 4mg over 2-5 min, repeat in 15 min x 3 prn
IM: If no IV/IO, give 8mg IM, repeat in 15 min x 2 prn
10. Transport Consider air transport for patients with unmanageable airways, unstable vital signs, rapid progression of symptoms, ALOC (GCS<12), active bleeding, trauma, absent distant pulses, or failure to respond to treatment.
11. Base Contact If tactically feasible for further orders. (See Special Considerations.)

ABDOMINAL PAIN (INJURIES)

SPECIAL CONSIDERATIONS

Tac Med	The care provider in the tactical situation may be forced to improvise and adapt his or her medical procedures based on situational factors in order to provide care for and prepare the patient for evacuation to a safer environment. It is presumed that in tactical situations all providers will function in radio failure, allowing all medications within their scope of practice, to be given without base contact. If safe to do so, the base can be contacted for further orders.
Eviscerations	Cover with moist dressing, do not attempt to reintroduce bowel back into the abdomen unless definitive care is more than 24 hours away.
Assessment	Female: Possibility of pregnancy, last menstrual period, vaginal bleeding, history of ectopic pregnancy. Male or Female: PQRST, trauma, previous abdominal surgery, previous episodes of similar pain, syncopal episode, vomiting (color, amount, frequency), pain or blood with urination, diarrhea, fever, palpable pulsatile abdominal mass with age >40 years. Abdominal pain is consistent with a broad range of potential diagnoses, some with serious outcomes--see differential diagnoses below. Careful consideration of this list of possibilities, thorough reporting to medical control, and documentation of all findings is key to good care.
Differential	Ectopic pregnancy, abdominal aortic aneurysm, gallstones, kidney stone, appendicitis, pneumonia, diabetic ketoacidosis. Remember, a heart attack or pneumonia can present as upper abdominal pain.
AMA/TAR	Not applicable.
Documentation	Relevant assessment features, reassessment, response to therapy.

Cross References

Procedures:

Base Hospital Contact Criteria
Intraosseous (IO) Access
IV Access and IV Fluid Administration
King Tube
Mucosal Atomizer Device
Oxygen Administration

Protocols:

Shock Without Trauma
TCCC Care Under Fire
Trauma (Non-Penetrating)
Trauma (Penetrating)

Drugs:

Acetaminophen (Tylenol)
Fentanyl (Sublimaze)
Ibuprofen (Motrin, Advil)
Levofloxacin (Levaquin)
Ondansetron (Zofran)

ALLERGIC REACTIONS

EMT Standing Orders

1. Scene Safety Follow #1-#5 TCCC Care Under Fire Guidelines. **REFERENCE** 0010-T
TacMedGeneral Information
2. XABCs Protect airway with OPA/NPA, assist ventilation, and suction as needed.
3. Assessment Airway edema, vital signs, mental status, wheezes/stridor, rash, history.
If signs/symptoms of shock, **GO TO PROTOCOL: Shock without Trauma**
If concern for foreign body **GO TO PROTOCOL: Upper Airway Obstruction (Mechanical)**.
4. Classify **Mild** reaction: local swelling and/or hives. **Skip to Step 9 (Base Contact)**.
Severe reaction (ANY of the following): hypotension, wheezing, respiratory distress, oral swelling, ALOC, chest tightness. **Follow Steps 5 to 9**.
5. Epinephrine Per Local Medical Advisor approved extended scope of practice, PROCEDURE:
Epinephrine Auto-injector or Epinephrine Ampule.
All ages: 0.3ml (0.3mg) of 1:1,000 concentration IM.
6. Oxygen **IF AVAILABLE**: High flow per PROCEDURE: *Oxygen Administration*
7. Remove Allergen If possible (e.g., bee stinger) per PROTOCOL: *Bites and Stings*.
8. Transport/
ALS Backup Consider air transport and/or rendezvous with higher level of care for patients with unmanageable airways, unstable vital signs, rapid progression of symptoms, ALOC (GCS<12), active bleeding, trauma, absent distant pulses, or failure to respond to treatment.
9. Base Contact If tactically feasible for further orders. (See Special Considerations).

***** For items inside box below, unless otherwise instructed, presume/operate under communication failure in all tactical situations.

EMT Base Hospital/Communication Failure Orders:

Severe reactions only:

1. Epinephrine Repeat dose every 10 minutes until severe symptoms resolve.
Increase frequency to every 5 minutes if symptoms worsen.

ALLERGIC REACTIONS

Parkmedic Standing Orders

1. Scene Safety Follow #1-#5 TCCC Care Under Fire Guidelines. **REFERENCE** 0010-T
TacMed General Information
2. XABCs Protect airway with OPA/NPA or ALS if indicated, (*King Tube*), assist ventilations and suction as needed.
3. Assessment Airway edema, vital signs, mental status, wheezes/stridor, rash, history.
If signs/symptoms of shock, **GO TO PROTOCOL: Shock without Trauma.**
If concern for foreign body **GO TO PROTOCOL: Upper Airway Obstruction.**
4. Classify **Mild** reaction: local swelling and/or hives. **Skip to Step 11 (Base Contact).**
Severe reaction (ANY of the following): hypotension, wheezing, respiratory distress, oral swelling, ALOC, chest tightness. **Follow Steps 5 to 11.**
5. Epinephrine Adults: 0.3ml (0.3mg) of 1:1,000 concentration IM.
Repeat once in 10 minutes if not significantly improved.
6. Oxygen **IF AVAILABLE:** High flow per PROCEDURE: *Oxygen Administration*
7. Remove Allergen If possible (e.g., bee stinger) per PROTOCOL: *Bites and Stings.*
8. Transport Consider air transport for patients with unmanageable airways, unstable vital signs, rapid progression of symptoms, ALOC (GCS<12), active bleeding, trauma, absent distant pulses, or failure to respond to treatment.
9. IV/IO Fluids per PROCEDURE: *IV/IO Access and IV Fluid Administration.* Do not delay other therapies if difficult IV access.
10. Diphenhydramine (Benadryl) Adults: 50mg IV every 6 hours, may utilize IM or IO if no IV access.
11. Base Contact If tactically feasible for further orders. (See Special Considerations).

***** For items inside box below, unless otherwise instructed, presume/operate under communication failure in all tactical situations.

Parkmedic Base Hospital/Communication Failure Orders

Severe reactions only:

1. Epinephrine Repeat IM dose every 10 minutes until severe symptoms resolve.
Increase frequency to every 5 minutes if symptoms worsening.
Consider IV epinephrine if worsening despite above measures.
All ages: 1ml (0.1mg) of 1:10,000 SIVP over 20–30 seconds.
Repeat every 1–2 minutes if symptoms worsening or no improvement.
Flush with 20ml NS/LR after each dose.

Mild reactions only:

1. Diphenhydramine (Benadryl) Adults: 50mg PO/IV/IO/IM.

ALLERGIC REACTIONS

SPECIAL CONSIDERATIONS

Tac Med	The care provider in the tactical situation may be forced to improvise and adapt his or her medical procedures based on situational factors in order to provide care for and prepare the patient for evacuation to a safer environment. It is presumed that in tactical situations all providers will function in radio failure, allowing all medications within their scope of practice, to be given without base contact. If safe to do so, the base can be contacted for further orders.
Assessment	<ul style="list-style-type: none">• Respiratory status: airway swelling? Wheezes? Stridor?• Rash?• Known or suspected exposure to allergen. If unclear contact base.• Medication use prior to arrival: epinephrine auto-injector, Benadryl?• PMH: allergic reactions, heart disease, stroke, hypertension?• Medications: beta-blockers (atenolol, propranolol) may block effects of epinephrine.• Vital signs including mental status.
Transport Priorities	Any patient with signs or symptoms of a severe reaction requires immediate evacuation. Consider air transport and/or rendezvous with higher level of care unless symptoms responding well to therapy.
AMA/TAR	Not applicable in tactical situations.
Documentation	History of allergies, possession of epinephrine auto-injector, rash. Patient should not drive for 1 hour after taking epinephrine or 6 hours after taking Diphenhydramine (Benadryl).

Cross Reference

Procedures:

Base Hospital Contact Criteria
Epinephrine
Intraosseous (IO) Access
IV Access and IV Fluid Administration
King Tube
Oxygen Administration

Protocols:

Bites and Stings
Shock Without Trauma
TCCC Care Under Fire

Drugs:

Diphenhydramine (Benadryl)
Epinephrine

ALTERED MENTAL STATUS/ ALTERED LEVEL OF CONSCIOUSNESS (ALOC)

Including stroke, syncope, behavioral, diabetic and hypertensive emergencies

EMT Standing Orders

1. Scene Safety Follow #1-#5 TCCC Care Under Fire guidelines. **REFERENCE** 0010-T *TacMed General Information*
2. XABCs Secure airway as needed.
Protect airway with OPA/NPA, assist ventilation, and suction as needed.
Perform spinal immobilization in setting of trauma per PROCEDURE: *Spine Immobilization*.
3. Restraints If needed to protect patient or caregivers from injury.
Law enforcement to immediately disarm pt if GCS <15.
4. Oxygen **IF AVAILABLE:** High-flow per PROCEDURE: *Oxygen Administration*.
5. Assessment Setting, history, vitals, temperature, neurological deficits, trauma, PMH. Consider differential: "AEIOUTIPS," (See Special Considerations).
If appropriate, **GO TO PROTOCOL:** *Cardiac Arrest Without AED; Electrical Injuries; Heat Illness; Seizures; Shock Without Trauma; Trauma (Penetrating); Trauma (Non-penetrating)*.
Consider nerve agent/organophosphate exposure if multiple victims and/or "AB-SLUDGEM" (See Special Considerations). If appropriate, **GO TO PROTOCOL:** "Ingestion/Poisoning."
6. Glucose Paste If ALOC and unable to determine glucose:
Administer 1 tube of Glucose (15g) squeezed into mouth and swallowed.
If patient is unable to swallow, paste may be placed outside the teeth, between the gum and cheek, while patient is positioned on side. (Maintain spinal precautions if indicated).
7. Transport/
ALS Backup Consider air transport and/or rendezvous with higher level of care for patients with unmanageable airways, unstable vital signs, rapid progression of symptoms, ALOC (GCS<12), active bleeding, major trauma, absent distant pulses, or failure to respond to treatment.
8. Base Contact If tactically feasible for further orders. (see Special Considerations).

ALTERED MENTAL STATUS/ ALTERED LEVEL OF CONSCIOUSNESS (ALOC)

Including stroke, syncope, behavioral, diabetic and hypertensive emergencies

Parkmedic Standing Orders

1. Scene Safety Follow #1-#5 TCCC Care Under Fire guidelines. **REFERENCE** 0010-T *TacMed General Information*
2. XABCs Secure airway as needed. Assist ventilation and suction as needed, utilizing OPA/NPA or ALS airway (*King Tube*) if indicated.
Spinal immobilization in setting of trauma per PROCEDURE: *Spine Immobilization*.
If narcotic overdose suspected, give Naloxone (Narcan) per **Step 8**. If unlikely, continue with protocol.
3. Restraints If needed to protect patient or caregivers from injury.
Law enforcement to immediately disarm pt if GCS <15.
4. Oxygen **IF AVAILABLE:** High-flow per PROCEDURE: *Oxygen Administration*.
5. Assessment Setting, history, vitals, temperature, neurological deficits, trauma, PMH. Consider differential: "AEIOUTIPS," (See Special Considerations).
If appropriate, **GO TO PROTOCOL:** *Cardiac Arrest Without AED; Electrical Injuries; Heat Illness; Seizures; Shock Without Trauma; Trauma(Non-penetrating); Trauma, (Penetrating)*.
Consider nerve agent/organophosphate exposure if multiple victims and/or "AB-SLUDGEM," (See Special Considerations). If appropriate, **GO TO PROTOCOL:** *Ingestion/Poisoning*.
6. IV/IO If unable to establish IV after 2 attempts or IO access, proceed to **Steps 7-10** before reattempting IV
Fluids per PROCEDURE: *IV/IO Access and IV Fluid Administration*.
7. Glucose Paste If ALOC and unable to determine glucose
If no IV, administer 1 tube of Glucose (15g) squeezed into mouth and swallowed.
If patient is unable to swallow, paste may be placed outside the teeth, between the gum and cheek, while patient is positioned on side. (Maintain spinal precautions if indicated).
8. Naloxone (Narcan) If still ALOC and narcotic overdose suspected (IN route preferred):
Adults: 2mg IN/IV/IO/IM every 2 minutes prn ALOC (max 10mg).
9. Transport Consider air transport for patients with unmanageable airways, unstable vital signs, rapid progression of symptoms, ALOC (GCS<12), active bleeding, major trauma, absent distant pulses, or failure to respond to treatment.
10. Base Contact If tactically feasible for further orders. (see Special Considerations).

ALTERED MENTAL STATUS/ ALTERED LEVEL OF CONSCIOUSNESS (ALOC)

***** For items inside box below, unless otherwise instructed, presume/operate under communication failure in all tactical situations.

EMT Base Hospital/Communication Failure Orders

1. Intraosseous Access May Attempt if GCS < 10, per PROCEDURE: *Intraosseous (IO) Access*.
2. Midazolam (Versed) For combative patients (must be a danger to self or others).
 IN/IV/IO: 2mg every 3 minutes, titrated up to 10mg.
 IM: 5mg every 15 minutes, up to 3 doses.

ALTERED MENTAL STATUS/ ALTERED LEVEL OF CONSCIOUSNESS (ALOC)

SPECIAL CONSIDERATIONS

Tac Med

The care provider in the tactical situation may be forced to improvise and adapt his or her medical procedures based on situational factors in order to provide care for and prepare the patient for evacuation to a safer environment. It is presumed that in tactical situations all providers will function in radio failure, allowing all medications within their scope of practice, to be given without base contact. If safe to do so, the base can be contacted for further orders.

Assessment

“**AEIOUTIPS**” Mnemonic for causes of ALOC.

- A:** Alcohol, Altitude, Age.
- E:** Epilepsy, Electrolytes, Electrocution, Eclampsia, Encephalopathy.
- I:** Insulin (hypo/hyperglycemia).
- O:** Overdose, Oxygen (hypoxemia).
- U:** Uremia (kidney failure).
- T:** Trauma, Tumor, Temperature.
- I:** Infection, Infarction (stroke, MI).
- P:** Psychosis, Poisons.
- S:** Stroke, Shock.

“**AB-SLUDGEM**” Mnemonic for organophosphate poisoning.

- A:** Altered mental status.
- B:** Bronchorrhea, Breathing difficulty or wheezing, Bradycardia.
- S:** Salivation, Sweating, Seizures.
- L:** Lacrimation (tearing).
- U:** Urination.
- D:** Defecation or Diarrhea.
- G:** GI upset (abdominal cramps).
- E:** Emesis (vomiting).
- M:** Miosis/Muscle activity (twitching).

Physical Exam

Mental Status via GCS:

Vitals, pupils, neurologic deficits, seizures, medications, track marks, pill bottles, alcohol, drug paraphernalia, trauma setting.

**Differential
Diagnosis**

- | | |
|-------------------------|---|
| Stroke | <p>History: numbness/tingling/weakness to one side of body or face. May have history of prior stroke. No trauma.</p> <p>Exam: difficulty speaking or understanding, weakness to one side of body or face. May have ALOC but usually not.</p> <p>No specific treatment in field.</p> <p>Patients whose deficit has resolved (transient ischemic attack [“TIA”]) still need hospital transport because they are at risk for stroke.</p> |
| Syncope or Near Syncope | <p>Causes include heart rhythm disturbances, seizures, stroke, dehydration, internal bleeding.</p> <p>These patients require stabilization and transfer to higher level of care with cardiac monitoring.</p> |
| Heat Illness | <p>May cause ALOC. In appropriate setting check temperature and institute cooling or warming measures per <i>PROTOCOL: Heat Illness</i>.</p> |

ALTERED MENTAL STATUS/ ALTERED LEVEL OF CONSCIOUSNESS (ALOC)

Hypertensive Encephalopathy	This entity exists with elevated BP (usually SBP >200 and DBP >120), along with CNS dysfunction such as ALOC, severe headache, seizure or stroke. Patients may also have chest pain or pulmonary edema. Isolated hypertension, without symptoms, need not be treated in the field, regardless of the degree of elevation. Contact base for guidance.
Diabetic Emergencies	<p>Hypoglycemia may cause ALOC and/or focal neurologic deficits and thereby mimic stroke or coma. Treatment is with glucose (D-50, paste) and/or glucagon.</p> <p>Hyperglycemia may occasionally cause ALOC, usually secondary to dehydration and coexisting illness. Treatment is with fluids, preferably IV. Contact base for guidance.</p>
Behavioral Emergencies	<p>Causes include drug and alcohol intoxication, psychiatric illness, developmental delay and any cause of ALOC. Any patient that may be a danger to self or others including impaired judgment must be transported. Consider legal psychiatric hold.</p> <p>If due only to psychiatric illness patients are usually alert and oriented.</p> <p>Speak to patients in a calm non-threatening manner</p>

Transport Consider air transport and/or rendezvous with higher level of care for patients with unmanageable airways, unstable vital signs, rapid progression of symptoms, or failure to respond to treatment.

Restraint Issues Use only if necessary to protect patient or personnel from injury. Consider restraining patient in swimmers position (one arm extended laterally beside head, one arm extended on lateral side of body) for airway protection. Reassess mental status and vital signs every 10 minutes. Check distal neurovascular status of restrained extremities every 30 minutes. Consider base contact whenever restraints are used for medical purposes.

AMA/TAR Not applicable in tactical situations.

Documentation All pertinent positives and negatives under assessment.
Frequent vital signs.
Neurologic exam (pupils, facial droop, weakness of arms or legs).
Blood glucose.
Reassessments of mental status/symptoms and any change.
Treatments rendered and response.

ALTERED MENTAL STATUS/ ALTERED LEVEL OF CONSCIOUSNESS (ALOC)

Cross Reference

Procedures:

Base Hospital Contact Criteria
Intraosseous (IO) Access
IV Access and IV Fluid
Administration
King Tube
Oxygen Administration
Spine Immobilization

Protocols:

Cardiac Arrest Without AED
Electrical and Lightning Injuries
Heat Illness
Seizures
Shock Without Trauma
TCCC Care Under Fire
Trauma (Non-penetrating)
Trauma (Penetrating)

Drugs:

Glucose Paste or Gel
Naloxone (Narcan)
Midazolam (Versed)

BITES AND STINGS

EMT Standing Orders

1. Scene Safety Follow #1-#5 TCCC Care Under Fire Guidelines. **REFERENCE** 0010-T
TacMed General Information
2. XABCs Secure airway as needed.
Protect airway with OPA/NPA, assist ventilation, and suction as needed.
If signs or symptoms of allergic reaction **GO TO PROTOCOL: Allergic Reactions**.
If signs of hemorrhage with shock **GO TO PROTOCOL: Trauma (Penetrating)**
3. Assessment Vitals, mental status. Type, time, location and circumstances of injury. Progression of injury (draw marks on patient if appropriate). Behavior of animal prior to and after bite. Associated injuries. Distal neurovascular and tendon exam.
4. Classify Bite Reassure patient and keep patient calm. Treat as specified in sections below:
Insect Sting/Bite:
Remove Remove constricting items (e.g. rings) from area of bite/swelling.
Remove stinger if visible.
Ice Use ice and/or "sting ease" if available for symptomatic relief.
Snake Bite:
Remove Remove constricting items (e.g. rings) from area of bite/swelling.
Document Mark area of swelling and record progression over time.
Irrigate Sterile saline or potable water per PROCEDURE: *Wound Care*.
Immobilize Splint injured extremity above (if possible) the level of heart per PROCEDURE: *Fracture/Dislocation Management*.
Animal Bite:
Remove Remove constricting items (e.g. rings) from area of bite/swelling.
Control Bleeding Per PROCEDURE: *Wound Care*.
Irrigate Sterile saline or potable water per PROCEDURE: *Wound Care*.
Splint Splint injury as per PROCEDURE: *Fracture Management*.
5. Administer/ Adult Acetaminophen 500mg PO x 2 PRN Pain(1 gram total)
Take Pill Pack Ibuprofen 800mg PO x 1 PRN Pain
Levofloxacin 750mg PO x 1 PRN animal/snake bite
6. Transport/ ALS Backup Consider air transport and/or rendezvous with higher level of care for patients with unmanageable airways, unstable vital signs, rapid progression of symptoms, ALOC (GCS<12), active bleeding, trauma, absent distant pulses, or failure to respond to treatment. Transport all snake bites. (See Special Considerations).
7. Base Contact If tactically feasible for further orders. (See Special Considerations).

BITES AND STINGS

Parkmedic Standing Orders

1. Scene Safety Follow #1-#5 TCCC Care Under Fire Guidelines. **REFERENCE** 0010-T
TacMed General Information

2. XABCs Secure airway as needed. assist ventilation, and suction as needed.
OPA/NPA or ALS airway if indicated (*King Tube*).
If signs or symptoms of allergic reaction **GO TO PROTOCOL: Allergic Reactions**.
If signs of hemorrhage with shock **GO TO PROTOCOL: Trauma (Penetrating)**

3. Assessment Vitals, mental status. Type, time, location and circumstances of injury. Progression of injury (draw marks on patient if appropriate). Behavior of animal prior to and after bite. Associated injuries. Distal neurovascular and tendon exam.

4. Classify Bite Reassure patient and keep patient calm. Treat as specified in sections below:
 - Insect Sting/Bite:**
 - Remove Remove constricting items (e.g. rings) from area of bite/swelling. Remove stinger if visible.
 - Ice Use ice and/or “sting ease” if available for symptomatic relief.

 - Snake Bite:**
 - Remove Remove constricting items (e.g. rings) from area of bite/swelling.
 - Document Mark area of swelling and record progression over time.
 - Irrigate Sterile saline or potable water per PROCEDURE: *Wound Care*.
 - Immobilize Splint injured extremity above (if possible) the level of heart per PROCEDURE: *Fracture/Dislocation Management*.

 - Animal Bite:**
 - Remove Remove constricting items (e.g. rings) from area of bite/swelling.
 - Control Bleeding Per PROCEDURE: *Wound Care*.
 - Irrigate Sterile saline or potable water per PROCEDURE: *Wound Care*.
 - Splint Splint injury as per PROCEDURE: *Fracture Management*.

5. Administer/ Adult: Acetaminophen 500mg PO x 2 PRN Pain(1 gram total)
Take Pill Pack Ibuprofen 800mg PO x 1 PRN Pain
Levofloxacin 750mg PO x 1 PRN animal/snake bite

6. Ondansetron Adult: If nausea or vomiting:
(Zofran ODT) SL: 4mg x 1, repeat in 15 min x 2 PRN

7. IV/IO Per PROCEDURE: *Intraosseous (IO) Access; IV Access and IV Fluid Administration*.

8. Ondansetron Adult: If nausea or vomiting:
(Zofran) IV/IO: 4mg over 2–5 min, repeat in 15 min x3 prn
IM: If no IV/IO, give 8mg IM, repeat in 15 min x2 prn

9. Transport Consider air transport for patients with unmanageable airways, unstable vital signs, rapid progression of symptoms, ALOC (GCS<12), active bleeding, trauma, absent distant pulses, or failure to respond to treatment. Transport all snake bites. (See Special Considerations)

10. Base Contact If tactically feasible for further orders. (See Special Considerations).

BITES AND STINGS

***** For items inside box below, unless otherwise instructed, presume/operate under communication failure in all tactical situations.

Parkmedic Base Hospital /Communication Failure Orders

1. Fentanyl (Sublimaze) Adults: IV/IO/IN: 50-100 mcg every 5-15 minutes
IM: 50 - 100 mcg every 15 minutes
Recheck vitals and mental status before and after each dose
Administer ONLY if SBP > 100 and normal mental status

BITES AND STINGS

SPECIAL CONSIDERATIONS

TacMed The care provider in the tactical situation may be forced to improvise and adapt his or her medical procedures based on situational factors in order to provide care for and prepare the patient for evacuation to a safer environment. It is presumed that in tactical situations all providers will function in radio failure, allowing all medications within their scope of practice, to be given without base contact. If safe to do so, the base can be contacted for further orders.

Assessment **Insect Sting or Bite**
Some insects leave their stinger in the victim. Try to remove the stinger as soon as practical. Spider bites may not be painful immediately. Ice can be helpful in treating pain.

Snakebite

Remember personal protection. Many snakes thought to be “dead” have bitten rescuers.

Even the severed head may still be able to inflict a venomous bite. Do not engage in a search for the snake.

Most snakebites are “dry,” i.e., no venom is injected.

If envenomated some of the following should occur in 5–30 minutes.

1. Severe burning pain out of proportion to the wound.
2. Edema around the bite out of proportion to the wound.
3. Small, non-blanching purple spots (petechiae), bruising, or continued oozing from site.
4. Numbness or tingling of the mouth, extremities, or bite site.
5. Metallic taste in the mouth.
6. Involuntary twitching of the mouth, extremities, or bite site.
7. Weakness

Exotic snakes (Cobra, Krait, etc.) or Coral may cause neurologic and respiratory depression prior to a local reaction. Observe for mental status change, respiratory depression, convulsions, or paralysis.

Do not apply ice to snake bites. Do not incise wound or try to “suck” the venom out.

Animal Bites

Depending on the animal there can be a great deal of traumatic injury. Consider penetration of abdomen and/or thorax, fractures, etc.

If the animal is suspected of having rabies, an attempt should be made to obtain the animal. However, the patient and rescuers take priority. Be careful not to injure other personnel in an attempt to capture the animal. If the animal is killed, try to preserve the head for necropsy.

Most wounds should be irrigated with Normal Saline if available. Plain soap and water is also effective in decreasing infection rates. If there is a high suspicion for rabies, the wound should be scrubbed. (Scrubbing in the wound is not recommended for other wounds). If uncertain, address wound per PROCEDURE: *Wound Care*.

Transport Consider air transport for serious bites to head or neck, airway difficulties, respiratory distress, major trauma, shock, or neurologic deficits.

AMA/TAR Not applicable for tactical situations.

Cross Reference

Procedures:

Base Hospital Contact Criteria
Fracture/Dislocation Management
Intraosseous (IO) Access
IV Access and IV Fluid Administration
King Tube
Mucosal Atomizer Device
Wound Care

Protocols:

Allergic Reaction
TCCC Care Under Fire
Trauma (Penetrating)

Drugs:

Acetaminophen (Tylenol)
Fentanyl (Sublimaze)
Ibuprofen (Motrin, Advil)
Levofloxacin (Levaquin)
Ondansetron (Zofran)

BURNS

EMT Standing Orders

1. Scene Safety Follow #1-#5 TCCC Care Under Fire Guidelines. **REFERENCE** 0010-T
TacMed General Information
Beware of Hazardous Material (HazMat); protect yourself from injury.
2. Rescue Remove patient from source of injury. Stop burning process (see Special Considerations).
Decontaminate HazMat.
3. XABCs Protect airway with OPA/NPA, assist ventilation, and suction as needed.
4. Assessment Vitals, shock, mental status, airway burns, singed hair, stridor, lung sounds, circumferential burns to torso or extremity.
Mechanism of burn (e.g. enclosed space, explosion, acid, oil, water, electrical, flame).
Percentage and degree (thickness) of burn.
5. Prevent Hypothermia Cover patient with blanket and remove wet clothing. Move patient to warm environment.
Consider insulating patient from ground with blanket.
6. Remove Remove constricting items (e.g. rings).
7. Dressing Small burns: (< 15% TBSA): Cover with moist sterile dressings. May apply Bacitracin if transport time > 1 hour per PROCEDURE: *Wound Care*.
Large burns: No Bacitracin. Cover with dry sterile dressings to prevent hypothermia.
8. Administer/
Take Pill Pack Adult Acetaminophen 500mg PO x 2 PRN Pain(1 gram total)
Ibuprofen 800mg PO x 1 PRN Pain
9. Transport/
ALS Backup Consider air transport and/or rendezvous with higher level of care for patients with unmanageable airways, unstable vital signs, rapid progression of symptoms, ALOC (GCS<12), active bleeding, major trauma, absent distant pulses, for >15% TBSA or failure to respond to treatment. Transport to Regional Burn Center unless directed elsewhere by base. (see Special Considerations).
10. Base Contact If tactically feasible for further orders. (see Special Considerations).

BURNS

Parkmedic Standing Orders

1. Scene Safety Follow #1-#5 TCCC Care Under Fire Guidelines. **REFERENCE** 0010-T
TacMed General Information
Beware of Hazardous Material (HazMat); protect yourself from injury.
2. Rescue Remove patient from source of injury. Stop burning process (see Special Considerations).
Decontaminate HazMat.
3. XABCs Protect airway with OPA/NPA or ALS if indicated, (*King Tube*), assist ventilations and suction as needed.
4. Assessment Vitals, shock, mental status, airway burns, singed hair, stridor, lung sounds, circumferential burns to torso or extremity.
Mechanism of burn (e.g. enclosed space, explosion, acid, oil, water, electrical, flame).
Percentage and degree (thickness) of burn.
5. Prevent Hypothermia Cover patient with blanket and remove wet clothing. Move patient to warm environment.
Consider insulating patient from ground with blanket.
6. Remove Remove constricting items (e.g. rings).
7. Dressing Small burns: (< 15% TBSA): Cover with moist sterile dressings. May apply Bacitracin if transport time > 1 hour per PROCEDURE: *Wound Care*.
Large burns: No Bacitracin. Cover with dry sterile dressings to prevent hypothermia.
8. Administer/ Take Pill Pack Adult: Acetaminophen 500mg PO x 2 PRN Pain(1 gram total)
Ibuprofen 800mg PO x 1 PRN Pain
9. Ondansetron (Zofran ODT) Adult: If nausea or vomiting:
SL: 4mg, repeat in 15 min x 2 PRN
10. IV/IO All transported patients: One IV/IO with maintenance fluids (NS/LR) per PROCEDURE: *Intraosseous (IO) Access; IV Access and IV Fluid Administration..*
Shock or TBSA > 15%: Two IVs, with total IV fluid at the following rates:
Adults: 1-L LR/NS bolus
11. Ondansetron (Zofran) Adult: If nausea or vomiting:
IV/IO: 4mg over 2-5 min, repeat in 15 min x3 prn
IM: If no IV/IO, give 8mg IM, repeat in 15 min x2 prn
12. Transport Consider air transport for patients with unmanageable airways, unstable vital signs, rapid progression of symptoms, ALOC (GCS<12), active bleeding, major trauma, absent distant pulses, >15% TBSA, or failure to respond to treatment. Transport to Regional Burn Center unless directed elsewhere by base. (see Special Considerations).
13. Base Contact If tactically feasible for further orders. (see Special Considerations).

***** For items inside box below, unless otherwise instructed, presume/operate under communication failure in all tactical situations.

Parkmedic Base Hospital /Communication Failure Orders

1. Fentanyl (Sublimaze) Adults: IV/IO/IN: 50-100 mcg every 5-15 minutes
IM: 50 - 100 mcg every 15 minutes
Recheck vitals and mental status before and after each dose
Administer ONLY if SBP > 100 and normal mental status

BURNS

SPECIAL CONSIDERATIONS

Tac Med	The care provider in the tactical situation may be forced to improvise and adapt his or her medical procedures based on situational factors in order to provide care for and prepare the patient for evacuation to a safer environment. It is presumed that in tactical situations all providers will function in radio failure, allowing all medications within their scope of practice, to be given without base contact. If safe to do so, the base can be contacted for further orders.
Rescue	Thermal Burns: Protect yourself. Remove patient from source of burn to fresh air, remove burning or smoldering clothing, stop burning process. Use any water available. Consider ways of smothering the fire. Chemical Burns: Protect yourself. Remove all contaminated clothing. Wash patient with copious amounts of water. Do not scrub. Sterile water or saline is preferred, but any available water may be used. Record type of chemical and manner and time of exposure. Electrical Burns: Protect yourself. Be aware of likelihood of cardiac arrhythmias. REFERENCE PROTOCOL: <i>Electrical and Lightning Injuries</i> . Treat as medical arrest, not trauma. If in cardiac arrest, GO TO PROTOCOL: <i>Cardiac Arrest Without AED</i> .
Assessment	Check for evidence of airway burn (singled nose or facial hair, black tinged sputum, hoarse voice, abnormal lung sounds). Consider all enclosed-space burn victims to have carbon monoxide poisoning and possible inhalation injury. Remember that inhalation injuries may have delayed presentation of life threatening lung or airway injuries. Check nature and extent of burn (rule of nines), mental status, smoke inhalation, duration of exposure, depth of wounds. Evaluate for associated trauma and/or drug/alcohol intoxication. Depth of Burn: <u>Superficial</u> (first degree): Erythema only. (Does not count for % TBSA calculation) <u>Partial Thickness</u> (second degree): Blisters; sensation and capillary refill present. <u>Full Thickness</u> (third degree): White or charred; firm to touch; lack of sensation. Even though small, burns that involve the eyes, hands, feet, airway, genitalia, or those that are circumferential, are more concerning. Burns often have greatly increased fluid requirements, especially in the first eight hours. Contact base hospital for further fluid requirements. If no other site is available, it is acceptable to place an IV through burned skin.
Transport	All patients with the following should be transported to a Regional Burn Center unless directed otherwise by base: airway burns or respiratory distress; burns greater than 15% TBSA; burns with major trauma; face, hands, feet, or genitalia involvement; circumferential extremity burns; any 3 rd degree burn; extremes of age. All other patients may go to the hospital of their choice.
AMA/TAR	Not applicable in tactical situations.
Documentation	Degree (thickness) and extent (TBSA) of burn using the “rule of nines” or patients palm size = 1% TBSA, mechanism of burn, time of burn, associated injuries, tetanus status.

Cross Reference

Procedures:

Base Hospital Contact Criteria
Intraosseous (IO) Access
IV Access and IV Fluid Administration
King Tube
Mucosal Atomizer Device
Wound Care

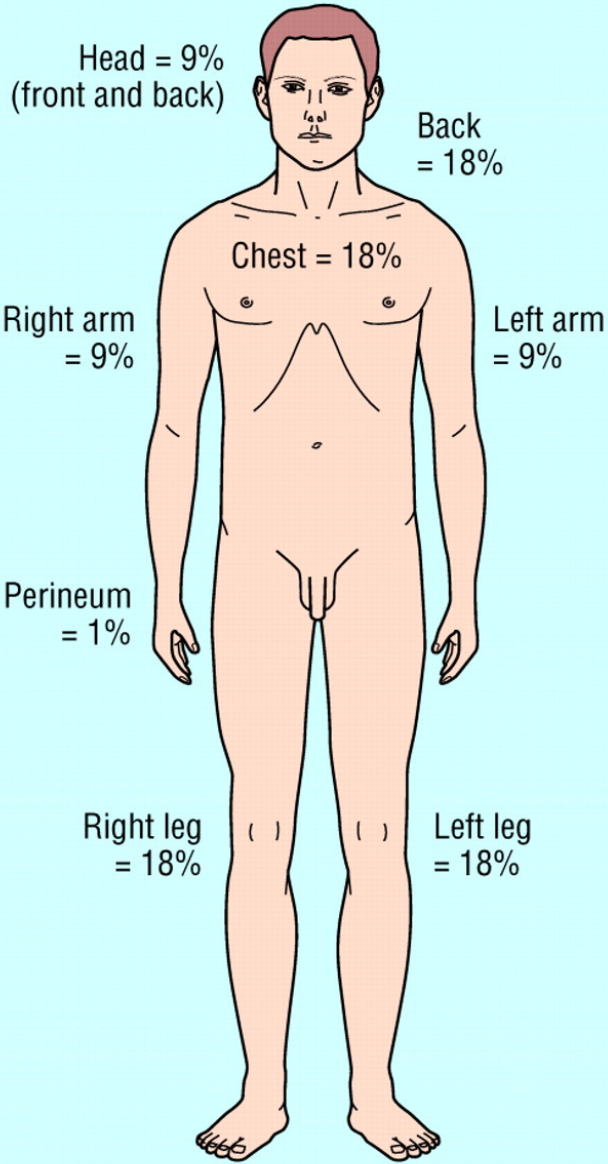
Protocols:

Cardiac Arrest Without AED
Electrical and Lightning Injuries
TCCC Care Under Fire

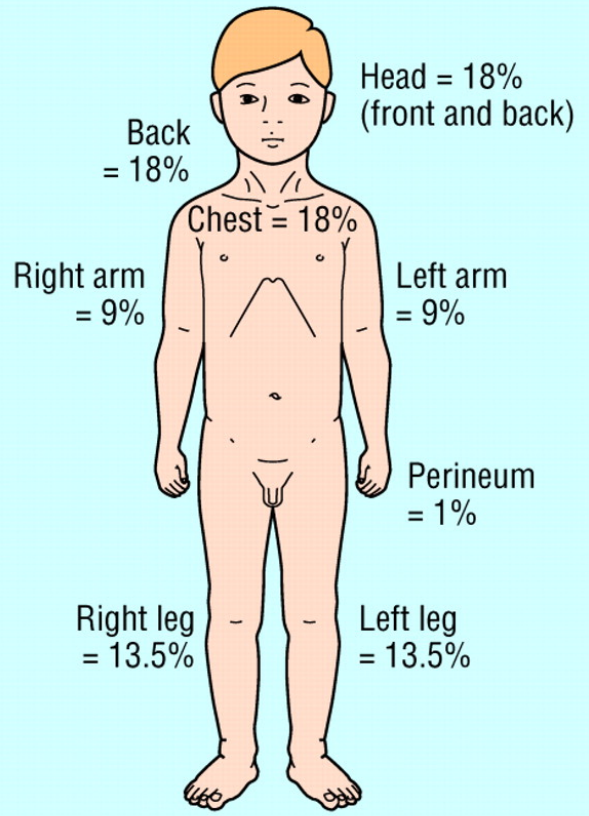
Drugs:

Acetaminophen (Tylenol)
Bacitracin
Fentanyl (Sublimaze)
Ibuprofen (Motrin)
Ondansetron (Zofran)

BURNS



Adult



Child

CARDIAC ARREST WITHOUT AED

EMT Standing Orders

1. Scene Safety Follow #1-#5 TCCC Care Under Fire Guidelines. **REFERENCE** 0010-T
TacMed General Information
Remove victim from unsafe environment including electrical hazard, cold, and heat.
2. Confirm Arrest No response to aggressive stimulation.
Call for AED and ACLS backup ASAP.
Check breathing, give 2 breaths if indicated, and check pulse 6 seconds (preferably carotid).
If pulse is present, patient is NOT in cardiac arrest. **GO TO PROTOCOL:**
Altered Mental Status/Altered Level of Consciousness (ALOC), or other appropriate protocol.
If pulse is absent and AED is NOT available, continue this PROTOCOL.
3. Assessment Quickly obtain information (15-30 seconds) from witnesses to determine whether resuscitation should be initiated. As time allows, obtain additional information including: bystander CPR, preceding events and symptoms, PMH.

Do not attempt resuscitation in the following cases:
Rigor mortis, lividity, obviously fatal trauma, or DNR.
Documented pulseless downtime greater than 15 minutes. In specific SPECIAL CASES (cold water drowning, hypothermia, barbiturate ingestion, electrocution or lightning strike) downtime is extended to 30 min.
4. XABCs Secure airway as needed.
Protect airway with OPA/NPA, assist ventilation, and suction as needed.
5. CPR Regardless of single- or dual-rescuer CPR, compression-to-ventilation ratio is 30:2. Compression rate is 100/minute; "Push Hard, Push Fast."
IF AVAILABLE: Active ventilation with 15-L Oxygen per PROCEDURE: *Oxygen Administration*.
Continue CPR for **15 minutes**, or until patient has palpable pulse or shows signs of life
6. Transport/
ALS Backup Transport if patient has a palpable pulse or transit time to healthcare facility is <10 min. SPECIAL CASES (as noted in Assessment section): Transport if patient has a palpable pulse or transit time to healthcare facility is <30 min.
If indicated but not yet performed, all patients should be assessed for airway intervention. If patient has a palpable pulse, or shows signs of life, check pulse every 3 min and provide appropriate ventilatory support.
7. CPR Termination CPR may be terminated after **15 minutes**, if the following conditions are met:
Patient does not respond to aggressive stimulation,
Patient has no palpable pulse for 15 seconds, AND
Patient has no spontaneous respirations for 15 seconds.
8. Base Contact If tactically feasible for further orders. (see Special Considerations).
9. Glucose Paste ALOC and unable to determine glucose:
Administer 1 tube of Glucose (15g) squeezed into mouth and swallowed.
If patient is unable to swallow, paste may be placed outside the teeth, between the gum and cheek, while patient is positioned on side. (Maintain spinal precautions if indicated).

CARDIAC ARREST WITHOUT AED

***** For items inside box below, unless otherwise instructed, presume/operate under communication failure in all tactical situations.

EMT Base Hospital/Communication Failure Orders

1. CPR Termination Follow **CPR Termination Algorithm** at end of this PROTOCOL.

Any return of spontaneous circulation restarts the clock (time for CPR termination) should the patient subsequently re-arrest.

CARDIAC ARREST WITHOUT AED

Parkmedic Standing Orders

Resuscitation Guidelines

Resuscitation Management

This protocol is written to be followed as circumstances permit by a single provider. CPR and AED (if available) are the priorities. These interventions should not be delayed for IV/IO placement or ALS airways.

Once there is a second provider (even a well-trained bystander) who can perform CPR, then the Parkmedic is to attempt IV placement per **Step 6** while instructing the second provider to proceed with CPR.

In cardiac arrest, emphasis should be on good CPR; however, at some point an advanced ALS airway will augment the effectiveness of ventilations. Early in the resuscitation, if BLS airway is inadequate or if manpower allows, consideration of ALS airway is warranted.

1. Scene Safety
Follow #1-#5 TCCC Care Under Fire Guidelines. **REFERENCE** 0010-T
TacMed General Information
Remove victim from unsafe environment including electrical hazard, cold, and heat.
2. Confirm Arrest
No response to aggressive stimulation.
Call for AED and ACLS backup ASAP.
Check breathing, give 2 breaths if indicated, and check pulse (preferably carotid).
If pulse is present, patient is NOT in cardiac arrest. **GO TO PROTOCOL:**
Altered Mental Status/Altered Level of Consciousness (ALOC), or other appropriate protocol.
If pulse is absent and AED is NOT available, continue this PROTOCOL.
3. Assessment
Quickly obtain information (15-30 seconds) from witnesses to determine whether resuscitation should be initiated. As time allows, obtain additional information including: bystander CPR, preceding events and symptoms, PMH.

Do not attempt resuscitation in the following cases:
Rigor mortis, lividity, obviously fatal trauma, or DNR.
Documented pulseless downtime greater than 15 minutes. In specific SPECIAL CASES (cold water drowning, hypothermia, barbiturate ingestion, electrocution or lightning strike) downtime is extended to 30 min.
4. XABCs
Secure airway as needed.
Protect airway with OPA/NPA, assist ventilation, and suction as needed.
ALS airway (*King Tube*) and BVM.
Note: REFERENCE "Resuscitation Management" section for priority of BLS versus ALS airway.
5. CPR
Regardless of single- or dual-rescuer CPR, compression-to-ventilation ratio is 30:2. Compression rate is 100/minute; "Push Hard, Push Fast."
IF AVAILABLE: Active ventilation with 15-L Oxygen per PROCEDURE: *Oxygen Administration*.
Do not stop CPR to perform pulse checks unless specified by protocol.
6. IV/IO
Make 3 attempts per PROCEDURE: Per PROCEDURE: *Intraosseous (IO) Access; IV Access and IV Fluid Administration*.
If successful, bolus 1-L LR/NS
If unsuccessful, proceed to **Step 7**.
7. CPR
Continue CPR for 3 minutes, then recheck carotid pulse for 6 seconds.
If patient has a palpable pulse, or shows signs of life, proceed to **Step 9**.
If patient has not regained pulse, nor shows signs of life, proceed to **Step 8**.

CARDIAC ARREST WITHOUT AED

8. CPR
Repeat cycle for 15 minutes
If patient has a palpable pulse, or shows signs of life, proceed to **Step 9**.
If patient has not regained pulse, nor shows signs of life, reference “CPR Termination” section in **Parkmedic Base Hospital/Communication Failure Orders**.
9. Reassess
If patient has a palpable pulse, or shows signs of life, check pulse every 3 min and provide appropriate ventilatory support.
10. Transport
Transport if patient has a palpable pulse or transit time to healthcare facility is <10 min.
SPECIAL CASES (as noted in Assessment section): Transport if patient has a palpable pulse or transit time to healthcare facility is <30 min.
If indicated but not yet performed, all patients should be assessed for airway intervention.
11. Base Contact
If tactically feasible for further orders. (see Special Considerations).
12. Glucose Paste
ALOC and unable to determine glucose:
Administer 1 tube of Glucose (15g) squeezed into mouth and swallowed.
If patient is unable to swallow, paste may be placed outside the teeth, between the gum and cheek, while patient is positioned on side. (Maintain spinal precautions if indicated).

***** For items inside box below, unless otherwise instructed, presume/operate under communication failure in all tactical situations.

Parkmedic Base Hospital/Communication Failure Orders

1. Return of Spontaneous Circulation
If return of spontaneous circulation, contact base for further management. If in communication failure consider clinical situation. If indicated, **GO TO** *PROTOCOL: Altered Mental Status/Altered Level of Consciousness (ALOC), Shock Without Trauma, etc.*
2. CPR Termination
Follow **CPR Termination Algorithm** at end of this PROTOCOL.

Any return of spontaneous circulation restarts the clock (time for CPR termination) should the patient subsequently re-arrest.

CARDIAC ARREST WITHOUT AED

SPECIAL CONSIDERATIONS

Tac Med	The care provider in the tactical situation may be forced to improvise and adapt his or her medical procedures based on situational factors in order to provide care for and prepare the patient for evacuation to a safer environment. It is presumed that in tactical situations all providers will function in radio failure, allowing all medications within their scope of practice, to be given without base contact. If safe to do so, the base can be contacted for further orders.
Initiation/ Termination of CPR	<p>Do not start CPR in the following cases:</p> <ul style="list-style-type: none">Documented pulseless and non-breathing for more than 15 minutes by a reliable witness who has observed the patient carefully.A pulseless, non-breathing patient with signs of prolonged lifelessness (e.g. rigor mortis [fairly reliable] or lividity [less reliable--must undress patient]).A pulseless, non-breathing patient with a non-survivable injury (e.g. severe [100% 3rd degree] burn or decapitation). <p>Note: the downtime for initiation of CPR is extended from 15 minutes to 30 minutes in certain SPECIAL CASES:</p> <ul style="list-style-type: none">Situations in which brain viability may be prolonged such as cold water drowning, hypothermia, and barbiturate ingestion.Situations resulting in externally-caused sudden cardiac arrest in an otherwise healthy individual such as electrocution or lightning strike. <p>With termination of CPR, consider early base contact as these situations are highly emotional and the base may assist in difficult decision-making.</p>
Assessment	<p>Patient condition immediately prior to arrest: chest pain, shortness of breath? Bystander resuscitation: downtime before CPR, duration of CPR, bystander experience? Physical Exam:</p> <ul style="list-style-type: none">Respirations: Shallow? Rate? Spontaneous?Breath sounds: Equal? Crackles? Rhonchi?Heart: Beating? Regular or irregular?Pulses: Carotid? Peripheral? Regular? All pulse checks during resuscitation should be for 6 seconds. Pulse checks for termination are for 30 seconds. Do not stop CPR to perform pulse checks unless specified by protocol.Abdomen: Soft? Signs of GI bleeding?Skin: Warm? Dry? Cyanosis? Rigor/lividity? Cold? Surgical scars/implants?Pupils: Reactive? Size?Evidence of trauma? Acute blood loss? <p>Previous medical history: medications, allergies, depression/previous attempt at self injury, drug ingestions, history of renal failure?</p>
Differential Diagnosis	Cardiac arrest is the final common pathway for every cause of death. It is important to differentiate irreversible causes of cardiac arrest from potentially reversible causes of cardiac arrest. Some examples of potentially reversible causes of cardiac arrest include: cardiogenic shock, cardiac arrhythmia, hypovolemia, tension pneumothorax, pericardial tamponade, respiratory arrest, allergic reaction, drug/medication/toxin ingestion, hypothermia, hyperthermia, drowning, electrical injury or trauma.
Transport	Once cardiac arrest is suspected, begin arrangements for transport and ALS rendezvous.
Documentation	<p>Initial and subsequent vital signs and mental status. Downtime before CPR, duration of CPR, and by whom. Time and response to interventions administered. Time of death if applicable. If outcome unsuccessful, leave airway, IV, etc. in place. If CPR was not initiated, the reason for not initiating CPR.</p>

CARDIAC ARREST WITHOUT AED

Cross Reference

Procedures:

Base Hospital Contact Criteria
Intraosseous Access
IV Access and IV Fluid
Administration
King Tube
Oxygen Administration

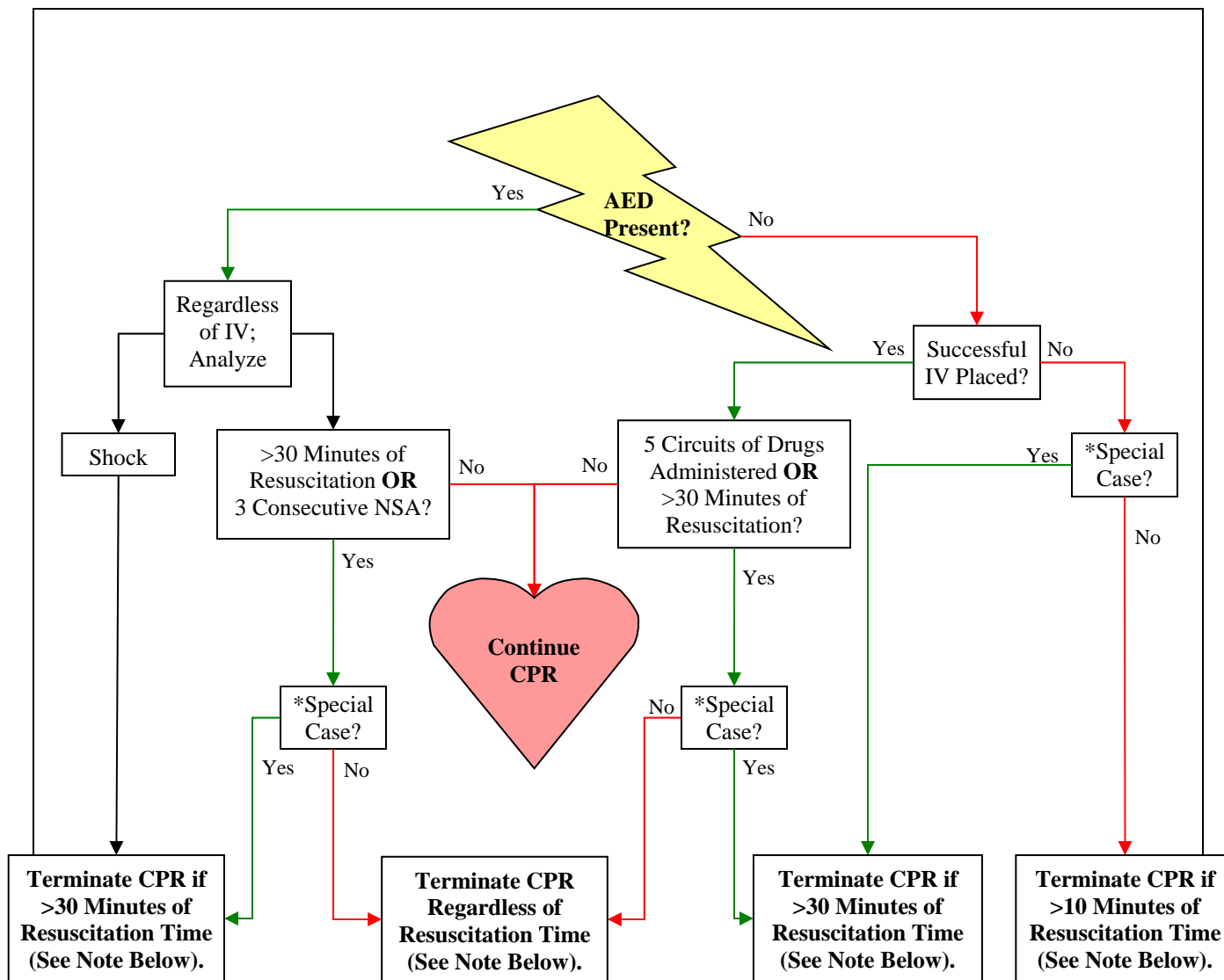
Protocols:

Altered Mental Status/Altered
Level of Consciousness (ALOC)
Shock Without Trauma
TCCC Care Under Fire

Drugs:

Glucose Paste or Gel

CPR TERMINATION ALGORITHM



***Special Cases:** cold water drowning, hypothermia, barbiturate ingestion, electrocution, lightning, or pediatric patients (age <14yrs).

NSA: No Shock Advised.

Note: Before terminating CPR, palpate pulse and evaluate for spontaneous respirations for 30 seconds. Confirm with a second provider if available. If no palpable pulse nor spontaneous respirations, CPR may be terminated. If patient has a palpable pulse or spontaneous respirations, continue with **PROTOCOL: Cardiac Arrest Without AED–Adult Medical**. Any return of spontaneous circulation restarts the clock (time for CPR termination) should the patient subsequently re-arrest.

ELECTRICAL AND LIGHTNING INJURIES

EMT Standing Orders

1. Scene Safety Follow #1-#5 TCCC Care Under Fire Guidelines. **REFERENCE** 0010-T
TacMed General Information
Protect yourself and others from injury.
2. Rescue Remove victim from unsafe environment including electrical hazard, cold, and heat.
3. Spinal Precautions If secondary trauma suspected or cannot be ruled out, reference PROCEDURE: *Spine Immobilization*.
4. XABCs Secure airway as needed.
Protect airway with OPA/NPA, assist ventilation, and suction as needed.
If cardiac arrest, **GO TO PROTOCOL: Cardiac Arrest Without AED**.
5. Assessment Vitals, mental status, burns, entry/exit wounds, fractures and dislocations, blunt trauma (from falls or being thrown), hypothermia.
If ALOC, **GO TO PROTOCOL: Altered Mental Status; Altered Level of Consciousness (ALOC)**.
6. Consider Trauma Treat for shock.
If suspected, **REFERENCE PROTOCOL: Burns; Trauma (Non-penetrating)**.
If applicable, **REFERENCE PROCEDURE: Fracture/Dislocation Management; or Wound Care**.
7. Administer/
Take Pill Pack

<u>Adult</u>	Acetaminophen	500mg PO x 2 PRN Pain(1 gram total)
	Ibuprofen	800mg PO x 1 PRN Pain
8. Transport/
ALS Backup Consider air transport and/or rendezvous with higher level of care for patients with unmanageable airways, unstable vital signs, rapid progression of symptoms, ALOC (GCS<12), active bleeding, major trauma, absent distant pulses, >15% TBSA or failure to respond to treatment.
9. Base Contact If tactically feasible for further orders. (see Special Considerations).

ELECTRICAL AND LIGHTNING INJURIES

Parkmedic Standing Orders

1. Scene Safety Follow #1-#5 TCCC Care Under Fire Guidelines. **REFERENCE** 0010-T
TacMed General Information
Protect yourself and others from injury.
2. Rescue Remove victim from unsafe environment including electrical hazard, cold, and heat.
3. Spinal Precautions If secondary trauma suspected or cannot be ruled out, **REFERENCE PROCEDURE:**
Spine Immobilization.
4. XABCs Secure airway as needed.
Protect airway with OPA/NPA or ALS airway (*King Tube*) if indicated, assist ventilation, and suction as needed.
If cardiac arrest, **GO TO PROTOCOL:** *Cardiac Arrest Without AED.*
5. Assessment Vitals, mental status, burns, entry/exit wounds, fractures and dislocations, blunt trauma (from falls or being thrown), hypothermia.
If ALOC, **GO TO PROTOCOL:** *Altered Mental Status / Altered Level of Consciousness (ALOC).*
6. Administer/
Take Pill Pack Adult: Acetaminophen 500mg PO x 2 PRN Pain(1 gram total)
Ibuprofen 800mg PO x 1 PRN Pain
7. Ondansetron
(Zofran ODT) Adult: If nausea or vomiting:
SL: 4mg, repeat in 15 min x 2 PRN
8. IV/IO All transported patients: One IV/IO with maintenance fluids (NS/LR) per
PROCEDURE: *Intraosseous (IO) Access and IV Access; IV Fluid Administration.*
Shock or TBSA >15%: Two IVs, with total IV fluid at the following rates:
Adults: 1-L NS/LR bolus
9. Ondansetron
(Zofran) Adult: If nausea or vomiting:
IV/IO: 4mg over 2-5 min, repeat in 15 min x3 prn
IM: If no IV/IO, give 8 mg IM, repeat in 15 min x2 prn
10. Consider Trauma Treat for shock.
If suspected, **REFERENCE PROTOCOL:** *Burns; Trauma (Non-penetrating).*
If applicable, **REFERENCE PROCEDURE:** *Fracture/Dislocation Management; or Wound Care.*
11. Transport Consider air transport for patients with unmanageable airways, unstable vital signs, rapid progression of symptoms, ALOC (GCS<12), active bleeding, major trauma, absent distant pulses, >15% TBSA, or failure to respond to treatment.
12. Base Contact If tactically feasible for further orders. (see Special Considerations).

***** For items inside box below, unless otherwise instructed, presume/operate under communication failure in all tactical situations.

Parkmedic Base Hospital /Communication Failure Orders

1. Fentanyl
(Sublimaze) Adults: IV/IO/IN: 50-100 mcg every 5-15 minutes
IM: 50 - 100 mcg every 15 minutes
Recheck vitals and mental status before and after each dose
Administer ONLY if SBP > 100 and normal mental status

ELECTRICAL AND LIGHTNING INJURIES

SPECIAL CONSIDERATIONS

Tac Med	<p>The care provider in the tactical situation may be forced to improvise and adapt his or her medical procedures based on situational factors in order to provide care for and prepare the patient for evacuation to a safer environment. It is presumed that in tactical situations all providers will function in radio failure, allowing all medications within their scope of practice, to be given without base contact. If safe to do so, the base can be contacted for further orders.</p>
Mechanism of Electrical Injury	<p>If possible, determine voltage, current (AC or DC), duration of exposure, and pathway of the electricity.</p> <p>High-voltage is >1000 Volts, usually industrial, high-tension wires, lightning. Low-voltage is <1000 Volts, usually household voltage.</p> <p>High-voltage electrocutions create worse injuries. AC prevents victims from releasing, so they sustain greater internal electrical injury. DC often throws victims, so they sustain less electrical injury but greater trauma. Lightning voltage is very high but exposure is very brief, making lightning strikes much more survivable than might be expected. Lightning exposure may occur as direct strike, side flash, or ground current.</p> <p>In electrocutions, cardiac arrest is the usual cause of death. <u>Respiratory arrest may last longer than cardiac arrest</u> so respirations may need assistance after pulse returns. <u>With multiple patients, triage priorities are different:</u> Patients in cardiac or respiratory arrest from electrocution have a better prognosis than patients in cardiac or respiratory arrest from other causes. Therefore, in multiple patient triage situations, <u>attend to patients in cardiac or respiratory arrest first.</u></p>
Common Findings	<p>High-voltage/lightning injury: cardiac and/or respiratory arrest, arrhythmias, ALOC, trauma. High-voltage electrical: entry/exit burns; fractures/dislocations; internal burns with resultant compartment syndrome, hypovolemia and kidney failure <u>requiring vigorous hydration.</u> Hypovolemic shock may occur from internal burns or blunt trauma. Cardiogenic shock may occur from direct electrical injury to heart.</p> <p>Lightning injuries: ruptured eardrums, transient paralysis of legs, “fern-like” or punctuate burns. Compared to major electrocutions, internal burns with relative hypovolemia and kidney failure rarely occurs, so IV hydration is much less important unless there is concomitant trauma.</p>
Disposition	<p>Victims of low-voltage electrical injury with mild or no symptoms may be transported to the closest facility.</p> <p>Consider transport to nearest burn/trauma center for patients with burns, significant trauma, lightning or high-voltage electrical injuries.</p>
AMA/TAR	<p>Not applicable in tactical situations.</p>

ELECTRICAL AND LIGHTNING INJURIES

Cross Reference

Procedures:

Base Hospital Contact Criteria
Fracture/Dislocation Management
Intraosseous (IO) Access
IV Access and IV Fluid
Administration
King Tube
Mucosal Atomizer Device
Oxygen Administration
Spine Immobilization
Wound Care

Protocols:

Altered Mental Status / Altered Level
of Consciousness (ALOC)
Burns
Cardiac Arrest Without AED
TCCC Care Under Fire
Trauma (Non-Penetrating)

Drugs:

Acetaminophen (Tylenol)
Fentanyl (Sublimaze)
Ibuprofen (Motrin, Advil)
Ondansetron (Zofran)

EYE TRAUMA

EMT Standing Orders

1. Scene Safety Follow #1-#5 TCCC Care Under Fire Guidelines. **REFERENCE** 0010-T
TacMed General Information
2. XABCs Secure airway as needed.
Protect airway with OPA/NPA, assist ventilation, and suction as needed.
3. Assessment Vision, pupil response, contact lenses, foreign body, chemical (alkali/acid), welding or sun exposure, globe rupture. If globe rupture suspected, skip to **Step 5**, (see Special Considerations.)
4. Irrigate If chemical exposure, immediately irrigate with LR/NS or any available potable water for 15 minutes.
5. Protect If impaled object, foreign body, or globe rupture suspected, do not irrigate. Do not remove impaled object. Cover eye with a loose, protective dressing (eye cup), putting no pressure on the globe. Cover BOTH eyes if practical (e.g., if patient does not need to walk unassisted) to reduce eye movement.
6. Administer/
Take Pill Pack Adult: Acetaminophen 500mg PO x 2 PRN Pain(1 gram total)
Ibuprofen 800mg PO x 1 PRN Pain
Levofloxacin 750mg PO x 1
7. Transport/
ALS Backup Consider air transport and/or rendezvous with higher level of care for patients with unmanageable airways, unstable vital signs, rapid progression of symptoms, ALOC (GCS<12), active bleeding, major trauma, absent distant pulses, or failure to respond to treatment. (see Special Considerations).
8. Base Contact If tactically feasible for further orders. (see Special Considerations).

EYE TRAUMA

Parkmedic Standing Orders

1. Scene Safety Follow #1-#5 TCCC Care Under Fire Guidelines. **REFERENCE** 0010-T
TacMed General Information
2. XABCs Secure airway as needed.
Protect airway with OPA/NPA or ALS airway (*King Tube*) if indicated, assist ventilation, and suction as needed.
3. Assessment Vision, pupil response, contact lenses, foreign body, chemical (alkali/acid), welding or sun exposure, globe rupture. If globe rupture suspected, skip to **Step 5**, (see Special Considerations.)
4. Irrigate If chemical exposure, immediately irrigate with LR/NS or any available potable water for 15 minutes.
5. Protect If impaled object, foreign body, or globe rupture suspected, do not irrigate or apply ointment. Do not remove impaled object. Cover eye with a loose, protective dressing (eye cup), putting no pressure on the globe. Cover **BOTH** eyes if practical (e.g., if patient does not need to walk unassisted) to reduce eye movement.
6. Administer/
Take Pill Pack Adult: Acetaminophen 500mg PO x 2 PRN Pain(1 gram total)
Ibuprofen 800mg PO x 1 PRN Pain
Levofloxacin750mg PO x 1
7. Ondansetron
(Zofran ODT) Adult: If nausea or vomiting:
SL: 4mg, repeat in 15 min x 2 PRN
8. IV/IO Saline lock if needed for pain control per PROCEDURE: *Intraosseous (IO) Access; IV Access and IV Fluid Administration.*
9. Ondansetron
(Zofran) Adult: If nausea or vomiting:
IV/IO: 4mg over 2-5 min, repeat in 15 min x3 prn
IM: If no IV/IO, give 8mg IM, repeat in 15 min x2 prn
10. Transport Consider air transport for patients with unmanageable airways, unstable vital signs, rapid progression of symptoms, ALOC (GCS<12), active bleeding, major trauma, absent distant pulses, or failure to respond to treatment. (see Special Considerations).
11. Contact Base If tactically feasible for further orders. (see Special Considerations).

***** For items inside box below, unless otherwise instructed, presume/operate under communication failure in all tactical situations.

Parkmedic Base Hospital/Communication Failure Orders

1. Fentanyl
(Sublimaze) Adults: IV/IO/IN: 50-100 mcg every 5-15 minutes
IM: 50 - 100 mcg every 15 minutes
Recheck vitals and mental status before and after each dose
Administer **ONLY** if SBP > 100 and normal mental status

EYE TRAUMA

SPECIAL CONSIDERATIONS

Tac Med	The care provider in the tactical situation may be forced to improvise and adapt his or her medical procedures based on situational factors in order to provide care for and prepare the patient for evacuation to a safer environment. It is presumed that in tactical situations all providers will function in radio failure, allowing all medications within their scope of practice, to be given without base contact. If safe to do so, the base can be contacted for further orders.
General	Suspect an eye injury if any significant facial trauma. LR/NS is the preferred solution for irrigation but potable water may be used. If globe rupture is suspected (high velocity mechanism, impaled object, irregular pupil, significantly decreased vision in the acute setting) eye should be protected from environment and no irrigation or ointment should be administered. Do not remove impaled objects. Protect them from movement with a protective dressing (eye cup) and cover BOTH eyes to reduce eye movement. Explain to patient that the injured eye moves with the other eye and movement can worsen injury.
AMA/TAR	Not applicable in tactical situations.
Documentation	Document eye exam and assessment, focusing on vision, pupil size, and pupil shape.

Cross Reference

Procedures:

Base Hospital Contact Criteria
Intraosseous (IO) Access
IV Access and IV Fluid Administration
Mucosal Atomizer Device
Wound Care

Protocols:

TCCC Care Under Fire

Drugs:

Acetaminophen (Tylenol)
Fentanyl (Sublimaze)
Ibuprofen (Motrin, Advil)
Levofloxacin (Levaquin)
Ondansetron (Zofran)

HEAT ILLNESS

EMT Standing Orders

1. Scene Safety Follow #1-#5 TCCC Care Under Fire Guidelines. **REFERENCE** 0010-T
TacMed General Information
2. XABCs Secure airway as needed.
Protect airway with OPA/NPA, assist ventilation, and suction as needed.
3. Assessment Vitals, mental status (coordination, confusion), temperature if available, skin signs (sweaty or dry), or shock.
4. Cooling Remove patient from hot environment to a cool area if possible.
Remove constricting and warm clothing.
If ALOC or severe symptoms, begin evaporative cooling (see special considerations).
Don't let cooling delay transport – cool en route!
5. Oral Fluid If alert may give oral fluid. Frequent small amounts of water
or sport drink/electrolyte solution (diluted to half strength) if available.
Adults: Give a total of one liter per hour.
6. Glucose Paste If ALOC and unable to determine glucose:
Administer 1 tube of Glucose (15g) squeezed into mouth and swallowed.
If patient is unable to swallow, paste may be placed outside the teeth, between
the gum and cheek, while patient is positioned on side. (Maintain spinal
precautions if indicated).
7. Transport/
ALS Backup Consider air transport and/or rendezvous with higher level of care for patients with
unmanageable airways, unstable vital signs, rapid progression of symptoms, ALOC
(GCS<12), active bleeding, major trauma, absent distant pulses, or failure to respond
to treatment.
8. Base Contact If tactically feasible for further orders. (see Special Considerations).

HEAT ILLNESS

Parkmedic Standing Orders

1. Scene Safety Follow #1-#5 TCCC Care Under Fire Guidelines. **REFERENCE** 0010-T
TacMed General Information
2. XABCs Secure airway as needed.
Protect airway with OPA/NPA or ALS airway (*King Tube*) if indicated, assist ventilation, and suction as needed.
3. Assessment Vitals, mental status, temperature if available, skin signs (sweaty/dry), or shock.
4. Cooling Remove patient from hot environment to a cool area if possible.
Remove constricting and warm clothing.
If ALOC or severe symptoms, begin evaporative cooling (see special considerations).
Don't let cooling delay transport – cool en route!
5. Oral Fluid If alert and no signs of heat stroke may give oral fluid. Frequent small amounts of water or sport drink/electrolyte solution (diluted to half strength) if available.
Adults: Give a total of one liter.
6. IV/IO If ALOC, unable to take oral fluids, or signs of heatstroke, place IV/IO per
PROCEDURE: *Intraosseous (IO) Access; IV Access and IV Fluid Administration*.
Adults: 1-L LR/NS bolus
If still symptomatic after initial bolus, give second bolus.
7. Glucose Paste If ALOC and unable to determine glucose:
Administer 1 tube of Glucose (15g) squeezed into mouth and swallowed.
If patient is unable to swallow, paste may be placed outside the teeth, between the gum and cheek, while patient is positioned on side. (Maintain spinal precautions if indicated).
If no response to Glucose Paste in 5 minutes, then proceed to **Step 10**.
8. Seizures If present, **GO TO PROTOCOL: Seizures**.
9. Transport Consider air transport for patients with unmanageable airways, unstable vital signs, rapid progression of symptoms, ALOC (GCS<12), active bleeding, major trauma, absent distant pulses, or failure to respond to treatment.
10. Base Contact If tactically feasible for further orders. (see Special Considerations).

HEAT ILLNESS

SPECIAL CONSIDERATIONS

Tac Med	The care provider in the tactical situation may be forced to improvise and adapt his or her medical procedures based on situational factors in order to provide care for and prepare the patient for evacuation to a safer environment. It is presumed that in tactical situations all providers will function in radio failure, allowing all medications within their scope of practice, to be given without base contact. If safe to do so, the base can be contacted for further orders.
Assessment	<p>Try to differentiate heat stroke from other heat illness early! There is a continuum from heat exhaustion to heat stroke, and assessment of mental status, temperature (if available), and hypotension are key.</p> <p>Many factors alter the body's ability to regulate temperature, including: age extremes, heart disease/medications (diuretics, beta blockers), antihistamines (alter sweating), alcohol, amount/type of fluid replacement, dehydration, acclimatization, humidity, altitude.</p> <p><u>Mental Status</u>: Ataxia (incoordination) and combativeness are often early signs of heat stroke. If patient has ALOC, assume heat stroke until proven otherwise and begin rapid cooling.</p> <p><u>Seizures</u> often occur in heat stroke. Be prepared to protect the airway and treat for seizures.</p> <p><u>Temperature</u>: Take oral temperature only if normal mental status, otherwise take rectal temperature if able.</p> <p><u>History</u>: heat exposure, exertion, age, recent alcohol use, rehydration status/fluid intake.</p> <p><u>PMH</u>: thyroid disease, psychiatric history, heart disease, seizures.</p> <p><u>Medications</u>: Haldol (other antipsychotics), blood pressure/heart medications (diuretics, beta blockers), and antihistamine (cold medicines/herbal medicine) can worsen heat illness.</p>
Differential Diagnosis	<p>Drug overdose (amphetamines, antihistamines, tricyclic antidepressants, aspirin).</p> <p>Alcohol withdrawal.</p> <p>Sepsis, Febrile illness.</p> <p>Diabetic ketoacidosis.</p> <p>Meningitis, Encephalitis.</p> <p>Thyroid storm (hyperthyroidism).</p> <p>Cerebral hemorrhage.</p> <p>Medication reaction (antipsychotics, e.g. Haldol).</p> <p>Status Epilepticus.</p>
Treatment	<p>Judicious fluid replacement (water/sports drink/electrolyte solution):</p> <p>Cooling measures:</p> <p>Evaporative cooling: The most effective. Spray or wipe skin with water and evaporate water with air using a fan, fanning or wind. Applying a moist cloth that retains moisture (cotton) is also effective.</p> <p>Immersion: The next most effective, but potentially dangerous. Use only if you cannot provide evaporative cooling. Immerse the patient in cool/cold water for 10 minutes, remove patient and recheck temperature. Be cautious! Keep patient's head out of the water. It is difficult to protect an airway and manage a seizing patient in a stream! Also, it is easy to make the patient hypothermic using this method. Cool only to goal temperature of 39°C (102.5°F). Cooling will continue after you stop. If first attempt not successful then continue with 5 minute cycles, rechecking temperature 5 minutes after each immersion.</p> <p>Adjunctive measures: Placing ice or cool towels in areas of high blood flow (neck veins, armpits, groin) works but is much less effective.</p> <p>AVOID cooling below 39° C (102.5° F) and stop if the patient starts shivering (hypothermic overshoot). Shivering increases body temperature and reflects overcooling.</p>
Transport	Transport any patient with signs of severe heat exhaustion or heat stroke. Heat stroke warrants air transport.
AMA/TAR	Not applicable in tactical situations.

HEAT ILLNESS

Types of Heat Illness				
	Who/Why	Symptoms	Treatment	Disposition
Heat Edema	Elderly, not acclimated to hot environment. History of rigorous activity then sitting/standing for long periods.	Redness, swelling of hands, ankles and feet.	Resolves with elevation of extremity and acclimatization.	Treat and release but make sure not CHF!
Heat Rash (prickly heat)	Anyone, usually in tropical/humid environment.	Blockage of sweat glands causing red painful, itchy rash in areas where clothing rubs.	None in field. Antibacterial cream, loose clothing, antihistamines.	TAR.
Heat Syncope	Elderly most common. Relative volume depletion. Must rule out other serious causes of syncope.	Dizziness and syncope with postural changes in hot environment.	Oral or IV fluids.	All symptoms should resolve with shade and fluid. But, you can't rule out other causes of syncope so transport all patients.
Heat Tetany	Anyone doing vigorous activity in a hot environment.	Hyperventilation, hand/foot spasm and tingling/ numbness.	Shade and normal breathing.	All symptoms should resolve with shade, rest and cessation of hyperventilation. Base contact for disposition.
Heat Cramps	Unconditioned people starting vigorous activity in the heat. Fluid replacement with water and lack of adequate salt and potassium replacement.	Involuntary, spasmodic, painful cramps in calves, thighs or shoulders during or after exercise.	Rest and re-hydration with sport drink or salted water. (NOT salt pills).	All symptoms should resolve with shade, rest and adequate electrolyte replacement. Base contact for disposition.
Heat Exhaustion normal mental status, body temp < 40° C (104°F)	Anyone active in hot environment without adequate fluid replacement. Caused by water and/or salt depletion.	Dizziness, weakness, fatigue, body aches, headache, nausea, sweating, vomiting, syncope, positional hypotension, tachycardia, elevated temperature but NORMAL MENTAL STATUS!	Rest, cooling, aggressive fluid/electrolyte replacement.	Transport. By ground OK if stable and improving. May be early heat stroke and must rule out other conditions.

HEAT ILLNESS

<p>Heat Stroke</p> <p>altered mental status, temp over 104° F or 40° C A medical emergency!</p>	<p>Anyone active in hot environment without adequate fluid replacement. Water and/or salt depletion <u>Classic:</u> elderly in heat wave--poor ability to regulate heat because of age/meds. <u>Exertional:</u> young, healthy athletes after strenuous exercise in hot environment.</p>	<p>Same as heat exhaustion but no longer able to regulate heat so they develop neuro signs: un-coordination, combative, hallucinations, seizures. Severe vasodilation = hypotension, tachycardia. Dry skin = loss of sweating mechanism, i.e. temp control.</p>	<p>Rapid cooling, airway protection, IV fluids, seizure treatment if present.</p>	<p>Air transport if possible.</p>
<p>Hyponatremia</p>	<p>Prolonged physical activity with sweating without consuming adequate water, especially in a hot and/or dry environment.</p>	<p>Minor symptoms: headaches, muscle cramps (especially in the legs), dry mouth, fatigue, dizziness, thirst. Severe symptoms: confusion, ALOC and seizures.</p>	<p>Minor symptoms: rest and re-hydration with sport drink or salted water. (NOT salt pills). Severe symptoms: IV fluids, seizure treatment if present.</p>	<p>Minor symptoms should resolve with shade, rest and adequate electrolyte replacement. Base contact for disposition. Severe symptoms: Air transport if possible.</p>

Cross Reference

Procedures:

Base Hospital Contact Criteria
Intraosseous Access
IV Access and IV Fluid Administration
King Tube

Protocols:

Altered Mental Status/Altered Level of Consciousness (ALOC)
Seizures
TCCC Care Under Fire

Drugs:

Glucose Paste
Electrolyte Solution

INGESTION/POISONING

EMT Standing Orders

1. Scene Safety Follow #1-#5 TCCC Care Under Fire Guidelines. **REFERENCE** 0010-T
TacMed General Information
Toxins/poisons can poison the EMS provider as well as the patient. Decontamination is paramount (see Special Considerations) because the environment may be hazardous, the patient may be hazardous, or their behavior unpredictable.
2. XABCs Protect airway if ALOC with OPA/NPA, assist ventilation, and suction as needed.
If ALOC, seizures or shock continue on this protocol, but **REFERENCE** PROTOCOL:
Altered Mental Status/Altered Level of Consciousness (ALOC); Seizures; or Shock Without Trauma.
3. Assessment Vitals, mental status, pupils, vomiting on scene, PMH, substance taken, route taken, time of ingestion, empty containers, suicide note, drug paraphernalia.
Consider nerve agent/organophosphate exposure if multiple victims and/or AB-SLUDGEM; if suspected, **UTILIZE** PROCEDURE: *NAAK/Mark I (Nerve Agent Antidote Kit)*.
Note: All body fluids can potentially poison the EMS provider.
IF ALOC, proceed to **Step 4**.
If normal mental status, proceed to **Step 6**.
4. Oxygen **IF AVAILABLE**, Per PROCEDURE: *Oxygen Administration*.
5. Glucose Paste If ALOC and unable to determine glucose:
Administer 1 tube of Glucose (15g) squeezed into mouth and swallowed.
If patient is unable to swallow, paste may be placed outside the teeth, between the gum and cheek, while patient is positioned on side. (Maintain spinal precautions if indicated).
6. Transport/
ALS Backup Consider air transport and/or rendezvous with higher level of care for patients with unmanageable airways, unstable vital signs, rapid progression of symptoms, ALOC (GCS<12), active bleeding, major trauma, absent distant pulses, potentially toxic ingestion, or failure to respond to treatment. If a hazmat or CBRNE situation, decontaminate prior to transport.
7. Base Contact If tactically feasible for further orders. (see Special Considerations).

INGESTION/POISONING

Parkmedic Standing Orders

1. Scene Safety Follow #1-#5 TCCC Care Under Fire Guidelines. **REFERENCE** 0010-T
TacMed General Information
Toxins/poisons can poison the EMS provider as well as the patient. Decontamination is paramount (see Special Considerations) because the environment may be hazardous, the patient may be hazardous, or their behavior unpredictable.
 2. XABCs Protect airway, assist ventilation and suction as needed. OPA/NPA or ALS airway (*King Tube*) if indicated.
If ALOC, seizures or shock continue on this protocol, but **REFERENCE** PROTOCOL: *Altered Mental Status/Altered Level of Consciousness (ALOC); Seizures; or Shock Without Trauma.*
 3. Assessment Vitals, mental status, pupils, vomiting on scene, PMH, substance taken, route taken, time of ingestion, empty containers, suicide note, drug paraphernalia.
Consider nerve agent/organophosphate exposure if multiple victims and/or AB-SLUDGEM; if suspected, **UTILIZE** PROCEDURE: *NAAK/Mark I (Nerve Agent Antidote Kit).*
Note: All body fluids can poison the EMS provider.
IF ALOC, proceed to **Step 4**.
If normal mental status, proceed to **Step 7**.
 4. Oxygen **IF AVAILABLE**, Per PROCEDURE: *Oxygen Administration.*
- Note:** Perform glucose intervention step below (glucose paste) to address potential or actual low glucose. Allow five minutes for patient response. If patient responds, subsequent sugar interventions may be omitted. However, other treatment steps should proceed while awaiting response to glucose intervention(s).
5. Glucose Paste If ALOC and unable to determine glucose:
Administer 1 tube of Glucose (15g) squeezed into mouth and swallowed.
If patient is unable to swallow, paste may be placed outside the teeth, between the gum and cheek, while patient is positioned on side. (Maintain spinal precautions if indicated).
If no response to Glucose Paste in 5 minutes, then proceed to **Step 8**.
 6. Naloxone (Narcan) If still ALOC and narcotic overdose suspected (IN route preferred):
Adults: 2mg IN/IV/IO/IM every 2 minutes prn ALOC (max 10mg).
 7. Ondansetron (Zofran ODT) Adult: If nausea or vomiting:
SL: 4mg x 1, repeat in 15 min x 2 PRN
 8. IV/IO Per PROCEDURE: *Intraosseous (IO) Access; IV Access and IV Fluid Administration.*
 9. Ondansetron (Zofran) Adult: If nausea or vomiting:
IV/IO: 4mg over 2-5 min, repeat in 15 min x 3 prn
IM: If no IV/IO, give 8mg IM, repeat in 15 min x 2 prn
 10. Transport Consider air transport for patients with unmanageable airways, unstable vital signs, rapid progression of symptoms, ALOC (GCS<12), active bleeding, major trauma, absent distant pulses, potentially toxic ingestion or failure to respond to treatment. If a hazmat or CBRNE situation, decontaminate prior to transport.
 11. Base Contact If tactically feasible for further orders. (see Special Considerations).

INGESTION/POISONING

***** For items inside box below, unless otherwise instructed, presume/operate under communication failure in all tactical situations.

Parkmedic Base Hospital/Communication Failure Orders

1. Atropine For nerve agent/organophosphate exposure to control secretions.
 Adults: 2mg IV/IM every 5 minutes prn secretions.

2. Midazolam For actively seizing patients.
 (Versed) Adults: IV: 2mg slow IVP every 3 min prn seizure (max 10mg).
 IN: 2mg via MAD every 3 min prn seizure (max 10mg).
 IM: 5mg every 10 min prn seizure (max 15mg).

INGESTION/POISONING

SPECIAL CONSIDERATIONS

Tac Med

The care provider in the tactical situation may be forced to improvise and adapt his or her medical procedures based on situational factors in order to provide care for and prepare the patient for evacuation to a safer environment. It is presumed that in tactical situations all providers will function in radio failure, allowing all medications within their scope of practice, to be given without base contact. If safe to do so, the base can be contacted for further orders.

CBRNE

A CBRNE environment is one in which there is exposure to chemical, biological, radiological, or nuclear weapons/material, and high-yield Explosives. The operational environment may include CBRNE, HAZMAT, TIC, TIM hazards, and harmful WMD components. Involved parties must fully appreciate and understand hazards and plan accordingly. In almost every case of known exposure, CBRNE reconnaissance and defense units are a part of tactical planning. However, many of the tactical chemical units have standard chemical warfare agent detectors that lack the capacity to correctly identify all known chemical and biological agents. Many tactical detection meters can yield a false positive when exposed to some TIC and TIM, and none are designed to identify oxygen-deficient areas.

CBRNE: Chemical, Biological, Radiological, Nuclear, high-yield Explosives

TIC: Toxic Industrial Chemicals

TIM: Toxic Industrial Materials

WMD: Weapons of Mass Destruction

Assessment

Physical Exam should pay special attention to airway, lung sounds, mental status, bowel sounds, skin signs, pupils, oral burns, gag reflex, odors, track marks, pill containers, drug paraphernalia. If possible, verify the route of exposure: ingestion, inhalation, absorption, or injection.

History is very valuable in guiding therapy, but do not delay transport of potentially unstable patient for prolonged medication container search or prolonged questioning.

Tricyclic antidepressant overdose patients can decline rapidly. Monitor vitals at least every 15 minutes.

Beware of possible co-ingestions. For example, it is not uncommon for an overdose victim to mix drugs and alcohol.

Particularly toxic/hazardous ingestions include:

Beta blockers (most commonly present with bradycardia and hypotension).

Calcium channel blockers

Tricyclic antidepressants.

Organophosphates.

Digoxin/Lanoxin.

Caustic agents (agents with a high/basic pH).

Information specific to organophosphate/nerve agent exposure:

AB-SLUDGEM:

A: Altered mental status.

B: Bronchorrhea, Breathing difficulty or wheezing, Bradycardia.

S: Salivation, Sweating, Seizures.

L: Lacrimation (tearing).

U: Urination.

D: Defecation or Diarrhea.

G: GI upset (abdominal cramps).

E: Emesis (vomiting).

M: Miosis/Muscle activity (twitching).

A single symptom of AB-SLUDGEM will almost certainly not be due to a poisoning.

INGESTION/POISONING

Organophosphates occur in liquid or powder form, may or may not smell like insecticide, can be absorbed through the skin, and are often found in farms or gardens.

Attend to scene safety. Do not enter any area where nerve agent or significant quantity of organophosphate is suspected without proper personal protection. If your team is exposed AND symptomatic, evacuate the team from the area. Prevent continued exposure by removing all clothing from any symptomatic person, flushing the patient with water, and moving the patient from the scene.

Medication Ondansetron: Is a standing order in this protocol. However, vomiting may be beneficial or harmful depending on the clinical scenario, therefore base involvement is advisable.
Advantages to vomiting: gastric decontamination, poison elimination.
Disadvantages to vomiting: airway compromise, esophageal injury.

Documentation Time of ingestion
Circumstances of ingestion
Substances available
Substances ingested (type and amount?)
Any vomiting that occurred, whether pill fragments or other ingested substances were seen.
Pill containers found, expiration date?

Transport: Consider air transport if unstable vitals, decreasing level of consciousness, or potentially toxic ingestions.
Decontaminate any patient before transport, especially if by air.

AMA/TAR Not applicable for tactical situations.

Cross Reference

Procedures:

Base Hospital Contact Criteria
Intraosseous (IO) Access
IV Access and IV Fluid Administration
King Tube
Mucosal Atomizer Device
NAAK/Mark I (Nerve Agent Antidote Kit)
Oxygen Administration

Protocols:

Altered Mental Status/Altered Level
of Consciousness (ALOC)
Seizures
Shock Without Trauma
TCCC Care Under Fire

Drugs:

Atropine
Glucose Paste or Gel
Midazolam (Versed)
Naloxone (Narcan)
Ondansetron (Zofran)
Pralidoxime Chloride(2PAM)

MINOR OR ISOLATED EXTREMITY TRAUMA

EMT Standing Orders

1. Scene Safety Follow #1-#5 TCCC Care Under Fire Guidelines. **REFERENCE** 0010-T
TacMed General Information
2. XABCs **GO TO PROTOCOL:** *Trauma(Non-penetrating)*, *Trauma(Penetrating)*, or *Altered Mental Status/Altered Level of Consciousness (ALOC)* if any of the following are present:
SBP<100, Non-palpable radial pulse; HR>100; RR<10 or RR>24; GCS<15; unstable airway; neurovascular deficit; GSW to head, neck or torso; amputations other than digits (except thumb); femur fracture with significant mechanism.
3. Assessment Vital signs, other injuries, bones and joints above and below injury, open wounds, deformity, distal circulation, sensation, and motor function.
4. Control Bleeding Stop exsanguinating external hemorrhage if tactically feasible. Direct patient to control hemorrhage by self-aid if able.
If bleeding is not controlled with direct pressure and injury is amenable to tourniquet application, apply CAT tourniquet as proximal as possible over the clothes per PROCEDURE: *Tourniquet Application*.
5. Administer/
Take Pill Pack Adult: Acetaminophen 500mg PO x 2 PRN Pain(1 gram total)
Ibuprofen 800mg PO x 1 PRN Pain
Levofloxacin 750mg PO x 1
6. Wound Care Per PROCEDURE: *Wound Care*. Irrigate thoroughly unless bleeding is/was heavy, and apply dressing.
If fracture/dislocation, proceed to **Step 7**; final dressing should be applied after reduction.
7. Reduce Fracture Per PROCEDURE: *Fracture/Dislocation Management*, reduce any suspected fractured limb with decreased distal pulses or with a deformity affecting ability to adequately splint and/or transport.
8. Immobilize Splint any extremity that has been reduced, has a suspected fracture, a gaping wound, wounds with excessive bleeding, large wounds over joints, or for patient comfort.
9. Reassess Bleeding, comfort, distal circulation, sensation, and motor function.
10. Transport/
ALS Backup On-scene time <10 MINUTES when transport available.
Consider air transport, especially if ALOC or abnormal vital signs.
11. Base Contact If tactically feasible for further orders. (see Special Considerations).

***** For items inside box below, unless otherwise instructed, presume/operate under communication failure in all tactical situations.

EMT Base Hospital/Communication Failure Orders

1. Reduce Dislocation If ETA to hospital/clinic >2 hours AND per Local Medical Advisor approved extended scope of practice, reduce shoulder, patella, or finger dislocations per PROCEDURE: *Fracture/Dislocation Management*.
Note: for shoulder reduction, wait for ALS back-up to provide analgesia unless ALS arrival is >1 hour.

MINOR OR ISOLATED EXTREMITY TRAUMA

Parkmedic Standing Orders

1. Scene Safety Follow #1-#5 TCCC Care Under Fire Guidelines. **REFERENCE** 0010-T
TacMed General Information
2. XABCs **GO TO PROTOCOL:** *Trauma(Non-penetrating), Trauma(Penetrating), or Altered Mental Status/Altered Level of Consciousness (ALOC)* if any of the following are present:
SBP<100, Non-palpable radial pulse; HR>100; RR<10 or RR>24; GCS<15; unstable airway; neurovascular deficit; GSW to head, neck or torso; amputations other than digits (except thumb); femur fracture with significant mechanism.
3. Assessment Vital signs, other injuries, bones and joints above and below injury, open wounds, deformity, distal circulation, sensation and motor function.
4. Control Bleeding Stop exsanguinating external hemorrhage if tactically feasible. Direct patient to control hemorrhage by self-aid if able.
If bleeding is not controlled with direct pressure and injury is amenable to tourniquet application, apply CAT tourniquet as proximal as possible over the clothes per **PROCEDURE: Tourniquet Application.**
5. Administer/
Take Pill Pack Adult: Acetaminophen 500mg PO x 2 PRN Pain(1 gram total)
Ibuprofen 800mg PO x 1 PRN Pain
Levofloxacin 750mg PO x 1
6. Wound Care Per **PROCEDURE: Wound Care.** Irrigate thoroughly unless bleeding is/was heavy, and apply dressing.
If fracture/dislocation, proceed to **Step 7**; final dressing should be applied after reduction.
7. Reduce Fracture Per **PROCEDURE: Fracture/Dislocation Management,** reduce any suspected fractured limb with decreased distal pulses or with a deformity affecting ability to adequately splint and/or transport.
8. Immobilize Splint any extremity that has been reduced, has a suspected fracture, a gaping wound, wounds with excessive bleeding, large wounds over joints, or for patient comfort.
9. Reassess Bleeding, comfort, distal circulation, sensation, and motor function.
10. IV/IO If abnormal vitals or administration of medications anticipated.
Place IV/IO and administer IV fluids per **PROCEDURE: Intraosseous (IO) Access; IV Access and IV Fluid Administration.** Do not place in injured extremity if possible.
11. Transport On-scene time <10 MINUTES when transport available.
Consider air transport, especially if ALOC or abnormal vital signs.
12. Base Contact If tactically feasible for further orders. (see Special Considerations).

***** For items inside box below, unless otherwise instructed, presume/operate under communication failure in all tactical situations.

Parkmedic Base Hospital/Communication Failure Orders

1. Reduce Dislocation If ETA to hospital/clinic >2 hours AND per Local Medical Advisor approved extended scope of practice, reduce shoulder, patella, or finger dislocations per **PROCEDURE: Fracture/Dislocation Management.**
2. Fentanyl
(Sublimaze) Adults: IV/IO/IN: 50-100 mcg every 5-15 minutes
IM: 50 - 100 mcg every 15 minutes
Recheck vitals and mental status before and after each dose
Administer ONLY if SBP > 100 and normal mental status

MINOR OR ISOLATED EXTREMITY TRAUMA

SPECIAL CONSIDERATIONS

Tac Med	The care provider in the tactical situation may be forced to improvise and adapt his or her medical procedures based on situational factors in order to provide care for and prepare the patient for evacuation to a safer environment. It is presumed that in tactical situations all providers will function in radio failure, allowing all medications within their scope of practice, to be given without base contact. If safe to do so, the base can be contacted for further orders.
Assessment	<p>Other injuries.</p> <p>Distal circulation, sensation, and motor function before and after reduction or splinting.</p> <p>Tenderness, deformity, crepitus, range of motion (ROM).</p> <p>Open wounds and degree of contamination.</p> <p>Joint above and below fracture. Bones above and below joint injury.</p> <p>If isolated joint injury without obvious fracture (i.e., no deformity, crepitus, or extreme pain) test pain-free range of motion.</p> <p>If isolated lower extremity injury and no obvious fracture (i.e., no deformity, crepitus, or extreme pain) test ability to bear weight.</p> <p>Wounds potentially needing suture repair include cosmetic areas (i.e. hands, face, neck), gaping lacerations, or if fat/muscle/tendon is visible.</p> <p>Assess risk for rabies in animals (species: skunk, fox, bat) appearing ill or displaying unusual behavior, e.g., unprovoked attacks.</p> <p>Suspect a <u>fracture</u> if there is an appropriate mechanism of injury with associated focal pain and tenderness, deformity, significant swelling, and/or loss of function (e.g., unable to walk on leg or grab with hand).</p> <p>Suspect a <u>joint injury</u> (sprain with or without associated fracture) when there is an appropriate mechanism of injury with pain, swelling, and loss of function or range of motion. Joint injuries may not have significant tenderness.</p> <p>Suspect a <u>joint dislocation</u> when any of the findings for joint injury are associated with deformity.</p>
Treatment Issues	A splint should be applied whenever a fracture or joint injury is suspected with loss of function. Exceptions: An isolated knee or ankle injury which does not limit function (i.e. patient states and demonstrates that they can still walk) may be supported without splinting to allow self-evacuation from the backcountry. Support without splinting may include combat boots for an ankle or improvised knee immobilizer.
Transport	<p>Consider helicopter evacuation for any of the following:</p> <p>Any fracture or dislocation with neurovascular compromise.</p> <p>Ground transport time >6 hours with: corrected neurovascular compromise; an open fracture; unreduced dislocations; femur, humerus or tibia/fibula fractures; or qualifying wound</p>
AMA/TAR	Not applicable in tactical situations.
Documentation	<p>Mechanism of injury.</p> <p>Tetanus status.</p> <p>Distal neurovascular function.</p> <p>Location, depth, length, and width of wound.</p> <p>Tendon, muscle, or vessel exposure.</p> <p>Contamination.</p> <p>Active or pulsatile bleeding.</p> <p>Care provided: bleeding control, irrigation, foreign material removal, bandaging, splinting, reduction, pre- and post-procedure exam, and time tourniquet was placed (if applied).</p> <p>Instructions provided.</p>

MINOR OR ISOLATED EXTREMITY TRAUMA

Cross Reference

Procedures:

Base Hospital Contact Criteria
Fracture/Dislocation Management
Intraosseous (IO) Access
IV Access and IV Fluid
Administration
Wound Care

Protocols:

Altered Mental Status/Altered Level
of Consciousness (ALOC)
TCCC Care Under Fire guidelines
Trauma (Non-Penetrating)
Trauma (Penetrating)

Drugs:

Acetaminophen (Tylenol)
Fentanyl (Sublimaze)
Ibuprofen (Motrin, Advil)
Levofloxacin (Levaquin)

SEIZURES

EMT Standing Orders

1. Scene Safety Follow #1-#5 TCCC Care Under Fire guidelines. **REFERENCE** 0010-T *TacMed General Information*
2. XABCs Secure airway as needed.
Protect airway with OPA/NPA, assist ventilation, and suction as needed. Do not place objects in the mouth while seizing.
Protect C-spine if there is evidence of trauma per PROCEDURE: *Spine Immobilization*, and protect patient from additional injury. If there is no evidence of trauma, place patient in lateral decubitus position.
3. Assessment Vitals including tactile temperature and mental status; signs of trauma or drug use; history of seizures, diabetes, recent illness, heat exhaustion, or exercise with water intake but little food.
4. Oxygen **IF AVAILABLE:** High-flow per PROCEDURE: *Oxygen Administration*.
5. Determine Cause of Seizure If cause of seizure likely due to heatstroke or trauma, then **GO TO PROTOCOL:** *Heat Illness; Trauma (Non-penetrating); or Trauma (Penetrating)*.
6. Glucose Paste If ALOC and unable to determine glucose:
Administer 1 tube of Glucose (15g) squeezed into mouth and swallowed.
If patient is unable to swallow, paste may be placed outside the teeth, between the gum and cheek, while patient is positioned on side. (Maintain spinal precautions if indicated).
7. Transport/
ALS Backup Consider air transport if ALOC or seizures persist.
8. Base Contact If tactically feasible for further orders. (see Special Considerations).

SEIZURES

Parkmedic Standing Orders

1. Scene Safety Follow #1-#5 TCCC Care Under Fire guidelines. **REFERENCE** 0010-T *TacMed General Information*
2. XABCs Secure airway as needed. Assist ventilation and suction as needed, utilizing OPA/NPA or ALS airway (*King Tube*) if indicated. Do not place objects in the mouth while seizing.
Protect C-spine if there is evidence of trauma per PROCEDURE: *Spine Immobilization*, and protect patient from additional injury. If there is no evidence of trauma, place patient in lateral decubitus position.
3. Assessment Vitals including tactile temperature and mental status; signs of trauma or drug use; history of seizures, diabetes, recent illness, heat exhaustion, or exercise with water intake but little food.
4. Oxygen **IF AVAILABLE:** High-flow per PROCEDURE: *Oxygen Administration*.
5. Midazolam (Versed) For actively seizing patients ONLY.
IN: 2mg one-time dose.
6. Determine Cause Seizure If cause of seizure likely due to heatstroke or trauma then **GO TO PROTOCOL:** *Heat Illness; Trauma (Non-penetrating); or Trauma (Penetrating)*.
7. IV/IO Place IV/IO and administer IV fluids per PROCEDURE: *Intraosseous (IO) Access and IV Access; IV Fluid Administration*.
If unsuccessful proceed with protocol utilizing IM or PO route for interventions if needed in tactical setting.
8. Midazolam (Versed) For continued or recurrent seizures.
Adults: IV/IO: 2mg slow IVP every 3 min prn seizure (max 10mg).
IN: 2mg every 3 min prn seizure (max 10mg).
IM: 5mg every 10 min prn seizure (max 15mg).
9. Glucose Paste If ALOC and unable to determine glucose:
Administer 1 tube of Glucose (15g) squeezed into mouth and swallowed.
If patient is unable to swallow, paste may be placed outside the teeth, between the gum and cheek, while patient is positioned on side. (Maintain spinal precautions if indicated).
10. Transport Consider air transport for ALOC, persistent seizures, or unprotected airway.
11. Base Contact If tactically feasible for further orders. (see Special Considerations).

***** For items inside box below, unless otherwise instructed, presume/operate under communication failure in all tactical situations.

Parkmedic Base Hospital/Communication Failure Orders

1. Midazolam (Versed) In **communication failure**, IV and IM doses may continue to be titrated for control of active seizures at the above dosages and frequencies, without maximum, while carefully monitoring respiratory status, blood pressure, and mental status.

SEIZURES

SPECIAL CONSIDERATIONS

Tac Med	The care provider in the tactical situation may be forced to improvise and adapt his or her medical procedures based on situational factors in order to provide care for and prepare the patient for evacuation to a safer environment. It is presumed that in tactical situations all providers will function in radio failure, allowing all medications within their scope of practice, to be given without base contact. If safe to do so, the base can be contacted for further orders.
Assessment	History: <u>FACTS</u> . F: focus. A: activity (tonic, clonic). C: color during and after seizure. T: time (onset, duration). S: supplemental history: seizures, meds/compliance, drugs, trauma, preceding headache, numbness/weakness, recent illness/fever, heavy exercise with water intake but little food. Exam: Mental status, vitals, focal neurologic deficits (pupils, facial symmetry, strength/sensation all extremities), trauma.
Differential	High Altitude Cerebral Edema (HACE), heatstroke, fever, hypoglycemia, meningitis, stroke, drugs/overdose, hyponatremia. Remember, patients with a known seizure disorder may have another cause for their seizures. Always consider trauma. There are multiple causes for seizures, so ideally both the seizure and the underlying cause are addressed simultaneously. When following this protocol, primary focus should be controlling the seizure and protecting the patient from complications (e.g. aspiration, trauma). However, if a known/suggested cause exists, this should also be addressed (e.g. High Altitude Cerebral Edema [HACE], dehydration, or hyperthermia). Contact base hospital for guidelines as this is one of the rare circumstances where two protocols may need to be followed simultaneously. For example, a seizing patient with High Altitude Cerebral Edema (HACE) may need Dexamethasone, Midazolam, and rapid descent to lower altitudes; a hyperthermic and seizing patient may need Acetaminophen, Midazolam, and active cooling measures.
Transport	Consider air transport for patients with unmanageable airways, unstable vital signs, declining mental status or mental status failing to improve, uncontrolled seizures, hyperthermia, or High Altitude Cerebral Edema (HACE).
AMA/TAR	Not applicable in tactical situations.
Documentation	Reassessment of mental status; treatment rendered and response to therapy.

Cross Reference

Procedures:

Base Hospital Contact Criteria
Intraosseous (IO) Access
IV Access and IV Fluid Administration
King Tube
Oxygen Administration
Spine Immobilization

Protocols:

Altered Mental Status/Altered Level
of Consciousness (ALOC)
Heat Illness
TCCC Care Under Fire
Trauma (Non-Penetrating)
Trauma (Penetrating)

Drugs:

Glucose Paste or Gel
Midazolam (Versed)

SHOCK WITHOUT TRAUMA and DEHYDRATION

EMT Standing Orders

1. Scene Safety Follow #1-#5 TCCC Care Under Fire Guidelines. **REFERENCE** 0010-T
TacMed General Information
2. XABCs Secure airway as needed.
Protect airway with OPA/NPA, assist ventilation, and suction as needed.
3. Assessment Vitals, mental status, history, JVD, heart sounds, lung sounds, edema, fever, pain, bleeding, PMH, medications, capillary refill.
Classify type of shock – see **Special Considerations**.
If anaphylaxis, **GO TO PROTOCOL: Allergic Reactions**, and start with **Step 5: “Epinephrine;”** otherwise, continue this protocol.
4. Oral Fluids If alert and no signs of AMS/ALOC or Respiratory Distress.
Frequent small amounts of water or sports drink/electrolyte solution (diluted to half strength).
Adults: Target is to give a total of one liter per hour.
5. Glucose Paste If ALOC and unable to determine glucose:
Administer 1 tube of Glucose (15g) squeezed into mouth and swallowed.
If patient is unable to swallow, paste may be placed outside the teeth, between the gum and cheek, while patient is positioned on side. (Maintain spinal precautions if indicated).
6. Base Contact If tactically feasible for further orders. (see Special Considerations).
7. Transport/
ALS Backup Consider air transport for all patients.

SHOCK WITHOUT TRAUMA and DEHYDRATION

Parkmedic Standing Orders

1. Scene Safety Follow #1-#5 TCCC Care Under Fire Guidelines. **REFERENCE** 0010-T
TacMed General Information
2. XABCs Secure airway as needed. Assist ventilation as needed, utilizing OPA/NPA or ALS airway (*King Tube*) if indicated.
3. Assessment Vitals, mental status, history, JVD, heart sounds, lung sounds, edema, fever, pain, bleeding, PMH, medications, capillary refill.
Classify type of shock – see **Special Considerations**.
If anaphylaxis, **GO TO PROTOCOL: Allergic Reactions**, and start with **Step 5**:
“Epinephrine;” otherwise, continue this protocol.
4. Glucose Paste ALOC and unable to determine glucose:
Administer 1 tube of Glucose (15g) squeezed into mouth and swallowed.
If patient is unable to swallow, paste may be placed outside the teeth, between the gum and cheek, while patient is positioned on side. (Maintain spinal precautions if indicated).
5. IV/IO Per PROCEDURE: *Intraosseous (IO) Access and IV Access; IV Fluid Administration*.
Adult:
Stable: One 14-16 gauge IV.
Unstable: Two 14-16 gauge IVs.
If SBP>100 Palpable radial pulse AND HR<100, then administer LR/NS at maintenance (120ml/hr).
If SBP<100 Non-palpable radial pulse OR HR>100, then bolus LR/NS 1-L under pressure.
Recheck vitals after boluses, and run IV fluids as above. Continue IVF to 3-L max.
6. Oral Fluids If IV/IO unobtainable:
If alert and no signs of AMS/ALOC or Respiratory Distress.
Frequent small amounts of water or sports drink/electrolyte solution (diluted to half strength).
Adults: Give a total of one liter per hour.
7. Base Contact If tactically feasible for further orders. (see Special Considerations).
8. Transport Consider air transport for all patients.

SHOCK WITHOUT TRAUMA and DEHYDRATION

SPECIAL CONSIDERATIONS

Classify Type of Shock: (Usual signs/symptoms listed below)

Type of Shock	History	Physical Exam	Patient Medications	Treatment Considerations
Cardiogenic	Heart disease; Chest pain; Orthopnea; SOB; PMH: MI, angina, CHF, dialysis.	Pulmonary edema (wet lung sounds); cool; diaphoretic; peripheral edema.	Lasix; Nitroglycerine; Digoxin; Beta-blocker; Calcium channel blocker; ACE inhibitors, Aspirin.	Difficult to treat in the field.
Pericardial Tamponade	MI in last 2 wks; Chest trauma; Recent heart/chest surgery; Cancer	Normal lung sounds; +/- Muffled heart sounds; JVD.	Similar to cardiogenic meds.	Fluids.
Pulmonary Embolism	Postpartum; Blood clot in leg; Long car/plane ride; Immobilized (cast).	Normal lung sounds; JVD; +/- Swollen leg; +/- Normal exam; +/- Smoker.	Birth control pills; Coumadin.	Fluids.
Tension Pneumothorax	Chest pain; SOB; Recent procedure or prior pneumothorax; Lung disease (COPD); HIV.	Absent breath sounds on one side with hyperresonance; Deviated trachea; JVD.	Inhalers; Isoniazid.	Needle thoracostomy; Consider fluids.
Hypovolemic	Vomiting; diarrhea; fever; GI/Vaginal bleeding; Decreased PO; Abdominal pain.	Normal lung sounds; Flat neck veins; Signs of bleeding; Fever.	Anti-diarrheal; Anti-emetic; Proton pump inhibitor.	Multiple fluid boluses may be necessary.
Neurogenic	PMH: spinal cord injury; Lower extremity weakness.	Normal lung sounds; Flat neck veins; Warm skin; Lower extremity weakness; Bradycardia.		IV fluid boluses.
Septic	Recent fever or infection,	Normal/Wet lung sounds; Flat neck veins; Warm skin; Lethargic.	Antibiotics.	Multiple fluid boluses may be necessary.
Anaphylactic	Onset after food/drug/sting exposure; Prior reactions.	Normal lung sounds or wheezing/stridor; Flat neck veins; Rash; Red skin; Airway edema; +/- Med Alert Tag.	Epinephrine auto-injector; Benadryl.	Consider Epinephrine, Benadryl, Albuterol and fluids.
Heat Stroke	Hot weather and exertion; Dehydration.	Normal lung sounds; Flat neck veins; High temperature.	None.	IV fluid bolus; Cooling measures.
Drugs (toxin, street drugs, carbon monoxide, organophosphate, cyanide)	IV drug abuse; Closed environment with chemicals or fire; Farm worker.	Highly variable vitals, skin, lung, eye and mental status findings.	None.	Give Naloxone before ALS airway if suspect narcotics; Fluids.

SHOCK WITHOUT TRAUMA and DEHYDRATION

Tac Med The care provider in the tactical situation may be forced to improvise and adapt his or her medical procedures based on situational factors in order to provide care for and prepare the patient for evacuation to a safer environment. It is presumed that in tactical situations all providers will function in radio failure, allowing all medications within their scope of practice, to be given without base contact. If safe to do so, the base can be contacted for further orders.

General Signs of Shock: Any person who is cool and tachycardic is considered to be in shock until proven otherwise.

Adults: Skin signs may vary from cool/moist to hot/flushed.
Altered mental status.
Tachycardia (HR>100).
Hypotensive (SBP<100; later sign).

Types of Shock:

Cardiogenic: Inability of heart to pump blood secondary to pump failure (CHF).

Obstructive shock: Inability of the left ventricle to properly fill, thereby reducing cardiac output (e.g. tamponade, pulmonary embolism, tension pneumothorax).

Hypovolemic: Low blood volume secondary to:

Hemorrhagic shock: external or internal bleeding.

Dehydration: fluid loss (internal or external) or poor fluid intake.

Distributive: Inability to properly distribute fluid in the body due to peripheral vasodilation.

Neurogenic: CNS damage/cord injury.

Septic shock: overwhelming infection.

Anaphylaxis.

Drug ingestion.

Transport Consider air transport for all patients in shock.

AMA/TAR Not applicable in tactical situations.

Cross Reference

Procedures:

Base Hospital Contact Criteria
Intraosseous (IO) Access
IV Access and IV Fluid Administration
King Tube

Protocols:

Allergic Reactions
TCCC Care Under Fire

Drugs:

Epinephrine
Glucose Paste or Gel

TRAUMA ARREST

EMT Standing Orders

1. Scene Safety Follow #1-#5 TCCC Care Under Fire Guidelines. **REFERENCE** 0010-T
TacMed General Information
CPR should not be performed in the Care Under Fire and depending on the mission may or may not be practical in the Tactical Field Care as Trauma Arrests are virtually always fatal in the tactical setting, unless immediately reversible causes can be treated (i.e. Tension Pneumothorax).
2. Confirm Arrest No response to aggressive stimulation.
Call for ALS/ACLS backup ASAP.
Resuscitation for victims of blast or blunt trauma who have no pulse, no respirations, and no other signs of life will not be successful and should not be attempted after reversible causes of arrest are corrected.
Check breathing, give 2 breaths if indicated, and check pulse (preferably carotid).
If pulse is present, patient is NOT in cardiac arrest. **GO TO PROTOCOL:**
Trauma (Penetrating); Trauma (Non-penetrating), or other appropriate protocol.
If patient is victim of electrocution or lightning strike, run arrest as medical arrest;
GO TO PROTOCOL: *Cardiac Arrest Without AED.*
3. Assessment Quickly obtain information (15-30 seconds) from witnesses to determine whether resuscitation should be initiated. As time allows, obtain additional information including: bystander CPR, preceding events and symptoms, PMH.

Do not attempt resuscitation in the following cases:
Rigor mortis, lividity, or obviously fatal trauma.
Documented pulseless downtime greater than 15 minutes. In specific SPECIAL CASES (cold water drowning, hypothermia, barbiturate ingestion, electrocution or lightning strike) downtime is extended to 30 min.
4. XABCs Secure airway as needed.
Protect airway with OPA/NPA, assist ventilation, and suction as needed.
5. Needle Thoracostomy Perform bilateral needle thoracostomies per PROCEDURE: *Needle Thoracostomy.*
6. CPR Adult:
Regardless of single- or dual-rescuer CPR, compression-to-ventilation ratio is 30:2.
Compression rate is 100/minute; "Push Hard, Push Fast."
IF AVAILABLE: Active ventilation with 15-L Oxygen per PROCEDURE: *Oxygen Administration.*
Continue CPR for **5 minutes**, or until patient has palpable pulse or shows signs of life.
7. Transport/
ALS Backup Transport if patient regains pulse or is within 5 minutes of health care facility.
8. CPR Termination CPR may be terminated after 5 minutes, if the following conditions are met:
Patient does not respond to aggressive stimulation,
Patient has no palpable pulse for 15 seconds, AND
Patient has no spontaneous respirations for 15 seconds.
9. Base Contact If tactically feasible for further orders. (see Special Considerations).

TRAUMA ARREST

Parkmedic Standing Orders

1. Scene Safety Follow #1-#5 TCCC Care Under Fire Guidelines. **REFERENCE** 0010-T
TacMed General Information
2. Confirm Arrest No response to aggressive stimulation.
Call for ACLS backup ASAP.
Resuscitation for victims of blast or blunt trauma who have no pulse, no respirations, and no other signs of life will not be successful and should not be attempted.
Check breathing, give 2 breaths if indicated, and check pulse (preferably carotid).
If pulse is present, patient is NOT in cardiac arrest. **GO TO PROTOCOL:**
Trauma (Non-penetrating); Trauma (Penetrating), or other appropriate protocol.
If patient is victim of electrocution or lightning strike, run arrest as medical arrest;
GO TO PROTOCOL: Cardiac Arrest Without AED.
3. Assessment Quickly obtain information (15-30 seconds) from witnesses to determine whether resuscitation should be initiated. As time allows, obtain additional information including: bystander CPR, preceding events and symptoms, PMH.

Do not attempt resuscitation in the following cases:
Rigor mortis, lividity, or obviously fatal trauma.
Documented pulseless downtime greater than 15 minutes. In specific SPECIAL CASES (cold water drowning, hypothermia, barbiturate ingestion, electrocution or lightning strike) downtime is extended to 30 min.
4. XABCs Secure airway as needed.
Protect airway with OPA/NPA, assist ventilation, and suction as needed.
ALS airway (*King Tube*) and BVM.
5. Needle Thoracostomy Perform bilateral needle thoracostomies per PROCEDURE: *Needle Thoracostomy*.
6. CPR Adult:
Regardless of single- or dual-rescuer CPR, compression-to-ventilation ratio is 30:2.
Compression rate is 100/minute; "Push Hard, Push Fast."
Continue CPR for **5 minutes**, or until patient has palpable pulse or shows signs of life.
7. IV/IO Per PROCEDURE: *Intraosseous (IO) Access and IV Access; IV Fluid Administration*.
Adult: If successful, bolus (ideally under pressure) 1-L LR/NS.
8. Transport/ ACLS Backup Transport if patient regains pulse or is within 5 minutes of health care facility.
9. CPR Termination CPR may be terminated after 5 minutes, if the following conditions are met:
Patient does not respond to aggressive stimulation,
Patient has no palpable pulse for 15 seconds, AND
Patient has no spontaneous respirations for 15 seconds.
10. Base Contact If tactically feasible for further orders. (see Special Considerations).

TRAUMA ARREST

SPECIAL CONSIDERATIONS

Tac Med

The care provider in the tactical situation may be forced to improvise and adapt his or her medical procedures based on situational factors in order to provide care for and prepare the patient for evacuation to a safer environment. It is presumed that in tactical situations all providers will function in radio failure, allowing all medications within their scope of practice, to be given without base contact. If safe to do so, the base can be contacted for further orders.

General

With termination of CPR, consider early base contact as these situations are highly emotional and the base may assist in difficult decision-making.

Regardless of age, victims of traumatic arrest never survive unless they are within minutes of a hospital. Even in that setting, survival without neurological impairment is rare. Providing futile care will distract you from caring for potentially viable patients, keep personnel unavailable for other emergencies, and puts personnel at risk of injury from rescue, transportation, and body fluid exposures (i.e. needle stick).

In the field, it may be difficult to know that the heart has arrested, or is no longer viable, because of the trauma.

Assessment

Fixed and dilated pupils are not always reliable as a sign of death (e.g. sympathomimetic overdose).

Hypothermic patients have a higher likelihood of survival, and may be viable while appearing to be dead.

Cross Reference

Procedures:

Base Hospital Contact Criteria
Intraosseous (IO) Access
IV Access and IV Fluid Administration
King Tube
Needle Thoracostomy
Oxygen Administration

Protocols:

Altered Mental Status/Altered Level of Consciousness (ALOC)
Cardiac Arrest Without AED
TCCC Care Under Fire
Trauma (Non-Penetrating)
Trauma (Penetrating)

TRAUMA - NON-PENETRATING

EMT Standing Orders

1. Scene Safety Follow #1-#5 TCCC Care Under Fire Guidelines. **REFERENCE** 0010-T
TacMed General Information
2. XABCs Stop exsanguinating external hemorrhage if tactically feasible. Direct patient to control hemorrhage by self-aid if able.
If bleeding is not controlled with direct pressure and injury is amenable to tourniquet application, apply CAT tourniquet as proximal as possible over the clothes per
PROCEDURE: *Tourniquet Application*.
Protect airway with OPA/NPA, assist ventilation, and suction as needed.
Maintain C-spine precautions with ALL airway maneuvers.
If patient in cardiac arrest, **GO TO** PROTOCOL: *Trauma Arrest*.
3. Spine Immobilization **Stable:** Selectively as indicated per PROCEDURE: *Spine Immobilization*.
Unstable: ALL patients, per PROCEDURE: *Spine Immobilization*.
4. Primary Assessment Vitals – categorize:
Stable if ALL present: SBP>100; Palpable radial pulse; HR<100;
10<RR<24; GCS=15.
Unstable if ANY present: SBP<100 Non-palpable radial pulse; HR>100;
RR<10 or RR>24; GCS<15; unstable airway; neurovascular deficit; GSW to head, neck or torso; amputations other than digits (except thumb).
Law enforcement to immediately disarm pt if not alert and oriented x4.
Check the back for penetrating thoracic/abdominal injury. Check perineum.
Calculate trauma score per local medical advisor approved EMS policy.
5. Control Bleeding Direct pressure to all wounds.
4-sided dressing to any open chest or neck wounds.
Bandage non-life/limb threatening injuries en route.
6. Transport/
ALS Backup On-scene time <10 MINUTES when transport available.
Consider air transport, especially if ALOC or abnormal vital signs.
7. Oxygen **IF AVAILABLE:** High-flow per PROCEDURE: *Oxygen Administration*.
8. Prevent Hypothermia Remove wet clothing and apply blankets.
9. Pelvic Stabilization Per PROCEDURE: *Pelvic Stabilization*.
10. Administer/
Take Pill Pack Adult: Acetaminophen 500mg PO x 2 PRN Pain(1 gram total)
Ibuprofen 800mg PO x 1 PRN Pain
Levofloxacin 750mg PO x 1
11. Secondary Assessment Repeat vital signs and mental status.
Perform secondary survey.
If patient with burns, **GO TO** PROTOCOL *Burns*
Determine PMH, medications, allergies.

TRAUMA - NON-PENETRATING

12. Glucose Paste If ALOC and unable to determine glucose:
 Administer 1 tube of Glucose (15g) squeezed into mouth and swallowed.
 If patient is unable to swallow, paste may be placed outside the teeth, between
 the gum and cheek, while patient is positioned on side. (Maintain spinal
 precautions if indicated).
13. Base Contact If tactically feasible for further orders. (see Special Considerations).
14. Splint/Bandage If fracture or extremity trauma, **GO TO PROTOCOL: *Minor or Isolated Extremity***
 Injuries *Trauma*
 Immobilize and splint fractures en route per PROCEDURE: *Fracture/Dislocation*
 Management and Wound Care.
 Reduce any fracture/dislocation with deformity affecting ability to splint/transport, or
 any fracture/dislocation with decreased distal pulses.
 If incomplete amputation, splint affected extremity.
 If complete amputation, place moist sterile dressing over stump and apply
 CAT tourniquet/pressure wrap.. Place amputated part in coolest (not below
 freezing or in direct contact with ice) environment possible.
15. Blast Injury Presence of hearing loss, hematemesis, or wheezing secondary to blast injury should
 increase one's suspicion to the possibility of blast injury to the lungs &/or GI tract.
 IF AVAILABLE or As Soon As Possible: High-flow per PROCEDURE: *Oxygen*
 Administration
 IF CBRNE exposure is suspected GO TO PROTOCOL: *Ingestions Poisoning*.

***** For items inside box below, unless otherwise instructed, presume/operate under communication failure in all tactical situations.

EMT Base Hospital/Communication Failure Orders

1. Oral Fluids Oral fluid rehydration may be attempted in a patient if ALL of the following conditions
 are met:
 Normal mental status.
 Stable and protected airway.
 Unstable SBP or unstable HR as defined in PROTOCOL.
 Greater than 4 hours between injury and anticipated arrival at hospital.
 If ALL of these conditions are met, the patient may be given frequent small sips of water
 or non-carbonated electrolyte replenishment drink (diluted to half strength)

TRAUMA - NON-PENETRATING

Parkmedic Standing Orders

1. Scene Safety Follow #1-#5 TCCC Care Under Fire Guidelines. **REFERENCE** 0010-T
TacMed General Information
2. XABCs Stop exsanguinating external hemorrhage if tactically feasible. Direct patient to control hemorrhage by self-aid if able.
If bleeding is not controlled with direct pressure and injury is amenable to CAT tourniquet application, apply CAT tourniquet as proximal as possible over the clothes per PROCEDURE: *Tourniquet Application*.
Secure airway. Assist respirations, utilizing OPA/NPA or ALS airway (*King Tube*).
Maintain C-spine precautions with ALL airway maneuvers.
If patient in cardiac arrest, **GO TO** PROTOCOL: *Trauma Arrest*.
3. Spine Immobilization **Stable:** Selectively as indicated per PROCEDURE: *Spine Immobilization*.
Unstable: ALL patients, per PROCEDURE: *Spine Immobilization*.
4. Primary Assessment Vitals – categorize:
Stable if ALL present: SBP>100 Palpable radial pulse; HR<100; 10<RR<24; GCS=15.
Unstable if ANY present: SBP<100 Non-palpable radial pulse; HR>100; RR<10 or RR>24; GCS<15; unstable airway; neurovascular deficit; GSW to head, neck or torso; amputations other than digits (except thumb).
Law enforcement to immediately disarm pt if not alert and oriented x4.
Check the back for penetrating thoracic/abdominal injury. Check perineum.
Calculate trauma score per local medical advisor approved EMS policy.
5. Control Bleeding Direct pressure to all wounds
4-sided dressing to any open chest or neck wounds.
Bandage non-life/limb threatening injuries en route.
6. Transport/ALS Backup On-scene time <10 MINUTES when transport available.
Consider air transport, especially if ALOC or abnormal vital signs.
7. Oxygen **IF AVAILABLE:** High-flow per PROCEDURE: *Oxygen Administration*.
8. Prevent Hypothermia Remove wet clothing and apply blankets.
9. Pelvic Stabilization Per PROCEDURE: *Pelvic Stabilization*.
10. Administer/ Take Pill Pack

Adult	Acetaminophen	500mg PO x 2 PRN Pain(1 gram total)
	Ibuprofen	800mg PO x 1 PRN Pain
	Levofloxacin	750mg PO x 1
11. Secondary Assessment Repeat vital signs and mental status.
Perform secondary survey.
If patient with burns, **GO TO** PROTOCOL *Burns*
Determine PMH, medications, allergies.

TRAUMA - NON-PENETRATING

12. IV/IO Per PROCEDURE: *Intraosseous (IO) Access; IV Access and IV Fluid Administration*.
Stable: One 14-16 gauge IV.
Unstable: Two 14-16 gauge IVs.
If SBP>100 palpable radial pulse AND HR<100, then administer LR/NS at maintenance (120ml/hr).
If SBP 80-100 non-palpable radial pulse OR HR>100, then bolus LR/NS 500ml.
If SBP <80, then bolus LR/NS 1-L under pressure.
Recheck vitals after boluses, and run IV fluids as above. Continue IVF to 3-L maximum.
13. Glucose Paste If ALOC and unable to determine glucose:
Administer 1 tube of Glucose (15g) squeezed into mouth and swallowed.
If patient is unable to swallow, paste may be placed outside the teeth, between the gum and cheek, while patient is positioned on side. (Maintain spinal precautions if indicated).
14. Base Contact If tactically feasible for further orders. (see Special Considerations).
15. Splint/Bandage Injuries If fracture or extremity trauma, **GO TO PROTOCOL: *Minor or Isolated Extremity Trauma***
Immobilize and splint fractures en route per PROCEDURE: *Fracture/Dislocation Management and Wound Care*.
Reduce any fracture/dislocation with deformity affecting ability to splint/transport, or any fracture/dislocation with decreased distal pulses.
If incomplete amputation, splint affected extremity.
If complete amputation, place moist sterile dressing over stump and apply CAT tourniquet/pressure wrap. Place amputated part in coolest (not below freezing or in direct contact with ice) environment possible.
16. Blast Injury Presence of hearing loss, hematemesis, or wheezing secondary to blast injury should increase one's suspicion to the possibility of blast injury to the lungs &/or GI tract.
IF blast injury is highly suspected avoid administration of large quantities of IV fluids if stable, per PROCEDURE: *IV Access and IV Fluid Administration*
IF AVAILABLE or As Soon As Possible: High-flow per PROCEDURE: *Oxygen Administration*
IF CBRNE exposure is suspected **GO TO PROTOCOL: *Ingestions Poisoning***

TRAUMA - NON-PENETRATING

***** For items inside box below, unless otherwise instructed, presume/operate under communication failure in all tactical situations.

Parkmedic Base Hospital/Communication Failure Orders

1. Needle Thoracostomy
Per PROCEDURE: *Needle Thoracostomy*.
If not in arrest, **ALL** of the following must be present:
Severe respiratory distress (RR<10 or RR>24).
Hemodynamic compromise (SBP<80 Non-palpable radial pulse).
Decreased or absent breath sounds on one side.
Either distended neck veins **or** tracheal deviation away from side with tension (late finding).
2. IV Fluid
After administering 3-L of IVF, continue with boluses per Standing Orders, based on SBP only, not HR.
3. Oral Fluids
Oral fluid rehydration may be attempted in a patient if ALL of the following conditions are met:
Normal mental status.
Stable and protected airway.
Unstable SBP or unstable HR as defined in PROTOCOL.
Greater than 4 hours between injury and anticipated arrival at hospital.
If ALL of these conditions are met, the patient may be given frequent small sips of water or non-carbonated electrolyte replenishment drink (diluted to half strength).
4. Midazolam (Versed)
For combative patients (must be a danger to self or others).
IV/IN: 2mg every 3 minutes, titrated up to 10mg.
IM: 10mg every 15 minutes, up to 3 doses.
5. Fentanyl (Sublimaze)
Adults: IV/IO/IN: 50-100 mcg every 5-15 minutes
IM: 50 - 100 mcg every 15 minutes
Recheck vitals and mental status before and after each dose.
Administer ONLY if SBP > 100 and normal mental status.

TRAUMA - NON-PENETRATING

SPECIAL CONSIDERATIONS

TacMed

The care provider in the tactical situation may be forced to improvise and adapt his or her medical procedures based on situational factors in order to provide care for and prepare the patient for evacuation to a safer environment. It is presumed that in tactical situations all providers will function in radio failure, allowing all medications within their scope of practice, to be given without base contact. If safe to do so, the base can be contacted for further orders.

General

On-scene time SHOULD BE <10 MINUTES unless multiple patients, prolonged extrication, or transport unavailable. All delays on scene must be documented. On-scene treatment should be limited to airway management, pressure control of major bleeding, covering an open chest wound and spine immobilization. Begin organizing transport immediately. Contact base as soon as transport underway, or immediately if transport delayed. Reassess vital signs frequently once en route, and after any treatment.

Assessment

Primary assessment:

- X: eXsanguinating hemorrhage control
- A: Airway with cervical spine control
- B: Breathing
- C: Circulation/uncontrolled bleeding
- D: Disability/neuro status
- E: Exposure (undress) with Environmental control (temperature)

Secondary assessment: (head-to-toe) Identify immediate life threats: head injury, neck vein distention, tracheal shift, chest trauma/flail chest, unequal lung sounds, abdominal trauma, pelvic/femur fractures, back trauma, shock, major hemorrhage, survey of injuries. If ALOC, document pupil size/reactivity, and continuously monitor neuro status.

History: Mechanism of injury: Penetrating or blunt trauma? Speed of vehicles? Angle of impact, rollover, secondary impacts, exterior damage, airbags deployed? Seatbelt? Damage to steering wheel or windshield? Patient ejected? What did patient actually hit? Loss of consciousness? Fatality on scene? Extrication time >20 minutes? Height of fall? Helmet? Possible cause of incident: medical problem, drug overdose, alcohol, MI, seizure? Information regarding nature & size of explosion; time of occurrence, proximity to epicenter of blast, displacement by blast wind; presence of secondary fires, smoke, dust, or CBRNE contamination. AMPLE history.

Vitals: Repeat frequently during transport, including mental status. Tachycardia is an early sign of shock. A palpable radial pulse corresponds to SBP \geq 80, and a palpable carotid pulse corresponds to SBP \geq 60.

Shock: In trauma, hypotension is usually from internal/external blood loss, NOT from isolated head injury.

Head Trauma: Repeated neuro exams (GCS, pupils, respiratory pattern, posturing) are essential. Deteriorating mental/neuro status is an emergency and air transport should be utilized if available. Agitation may suggest head trauma or hidden medical cause. If patient's respiratory rate is <10, assist respirations with BVM at a rate of 20/min.

Amputations: Per PROCEDURE: *Wound Care*. Wrap extremity in dry sterile gauze, place in plastic bag and keep cool (put bag containing amputated extremity on ice if possible). Amputated part should NOT be wet or placed directly in water/ice.

TRAUMA - NON-PENETRATING

Open Fractures: Per PROCEDURE: *Wound Care*. Irrigate with potable water, apply sterile dressing and splint per PROCEDURE: *Fracture/Dislocation Management*. Apply moist sterile dressing to exposed bone or tendon.

Pelvic Stabilization: Per PROCEDURE: *Pelvic Stabilization*.

Penetrating Trauma: Secure impaled objects and transport. Modify object or patient position for transport as needed. Do not remove object unless necessary for transport or CPR.

Documentation

MOI (mechanism of incident and mechanism of injury).

Loss of consciousness and duration.

Initial and repeat vital signs.

Pertinent exam findings (breath sounds, pelvic stability, fractures and bleeding).

If on scene >10 minutes, document reason.

Transport

If unstable trauma patient, initiate immediate transport with ALS treatment en route and ultimately air transport to trauma center if available.

AMA/TAR

Not applicable for tactical situations.

Cross Reference

Procedures:

Base Hospital Contact Criteria
Fracture/Dislocation Management
Intraosseous (IO) Access
IV Access and IV Fluid Administration
King Tube
Mucosal Atomizer Device
Needle Thoracostomy
Oxygen Administration
Pelvic Stabilization
Spine Immobilization
Wound Care

Protocols:

Burns
Ingestion Poisoning
Minor or Isolated Extremity Trauma
Trauma Arrest
TCCC Care Under Fire

Drugs:

Acetaminophen (Tylenol)
Fentanyl (Sublimaze)
Glucose Paste or Gel
Ibuprofen (Motrin/Advil)
Levofloxacin (Levaquin)
Midazolam (Versed)

TRAUMA - PENETRATING

EMT Standing Orders

1. Scene Safety Follow #1-#5 TCCC Care Under Fire Guidelines. **REFERENCE** 0010-T
TacMed General Information
2. XABCs Stop exsanguinating external hemorrhage if tactically feasible. Direct patient to control hemorrhage by self-aid if able.
If bleeding is not controlled with direct pressure and injury is amenable to tourniquet application, apply CAT tourniquet as proximal as possible over the clothes per PROCEDURE: *Tourniquet Application*.
Protect airway with OPA/NPA, assist ventilation, and suction as needed.
Maintain C-spine precautions with ALL airway maneuvers.
If patient in cardiac arrest, **GO TO** PROTOCOL: *Trauma Arrest*.
3. Spine Immobilization **Stable:** Selectively as indicated per PROCEDURE: *Spine Immobilization*.
Unstable: ALL patients, per PROCEDURE: *Spine Immobilization*.
4. Primary Assessment Vitals – categorize:
Stable if ALL present: SBP>100; Palpable radial pulse; HR<100; 10<RR<24; GCS=15.
Unstable if ANY present: SBP<100; Non-palpable radial pulse; HR>100; RR<10 or RR>24; GCS<15; unstable airway; neurovascular deficit; GSW to head, neck or torso; amputations other than digits (except thumb).
Law enforcement to immediately disarm pt if not alert and oriented x4.
Check the back for penetrating thoracic/abdominal injury. Check perineum.
Calculate trauma score per local medical advisor approved EMS policy.
Resuscitation for victims of penetrating trauma who have no pulse, no ventilations, and no other signs of life will not be successful and should not be attempted.
5. Control Bleeding Direct pressure to entry and exit wounds. Elevation if possible.
Four-sided dressing to any neck or chest wounds.
Bandage non life/limb threatening injuries en route.
Do not move or remove impaled objects, unless absolutely necessary to extract patient.
For eviscerations, do not push contents back in body cavity. Cover eviscerated tissue and area with saline-moistened sterile dressing.
6. Transport/ALS Backup On-scene time <10 MINUTES when transport available.
Consider air transport, especially if ALOC or abnormal vital signs.
7. Oxygen **IF AVAILABLE:** High-flow per PROCEDURE: *Oxygen Administration*.
8. Prevent Hypothermia Remove wet clothing and apply blankets.
9. Pelvic Stabilization Per PROCEDURE: *Pelvic Stabilization*.
10. Administer/ Take Pill Pack Adult: Acetaminophen 500mg PO x 2 PRN Pain(1 gram total)
Ibuprofen 800mg PO x 1 PRN Pain
Levofloxacin 750mg PO x 1

TRAUMA - PENETRATING

11. Secondary Assessment
Repeat vital signs and mental status.
Perform secondary survey.
If patient with burns, **GO TO** PROTOCOL: *Burns*
Determine PMH, medications, allergies.
If a penetrating eye injury is noted or suspected:
 Leave object in eye.
 Perform a rapid field test of visual acuity
 If object is protruding from the eye socket, stabilize object with tape then surround object with cup or other item to prevent jarring.
 If object is not protruding, cover eye with a soft patch that does not touch eye.
If protruding globe, do not push eye back into socket. Apply bulky dressing around eye, moist gauze over globe, and cover with a cup or similar protective object.
If impaled object, do not remove unless it is obstructing the airway. If protruding, dress around object to limit its movement.
12. Glucose Paste
If ALOC and unable to determine glucose:
 Administer 1 tube of Glucose (15g) squeezed into mouth and swallowed.
 If patient is unable to swallow, paste may be placed outside the teeth, between the gum and cheek, while patient is positioned on side. (Maintain spinal precautions if indicated).
13. Base Contact
If tactically feasible for further orders. (see Special Considerations).
14. Splint/Bandage Injuries
If fracture or extremity trauma, **GO TO** PROTOCOL: *Minor or Isolated Extremity Trauma*
Immobilize and splint fractures en route per PROCEDURE: *Fracture/Dislocation Management and Wound Care*.
Reduce any fracture/dislocation with deformity affecting ability to splint/transport, or any fracture/dislocation with decreased distal pulses.
If incomplete amputation, splint affected extremity.
If complete amputation, place moist sterile dressing over stump and apply tourniquet/pressure wrap. Place amputated part in coolest (not below freezing or in direct contact with ice) environment possible.

***** For items inside box below, unless otherwise instructed, presume/operate under communication failure in all tactical situations.

EMT Base Hospital/Communication Failure Orders

1. Oral Fluids
Oral fluid rehydration may be attempted in a patient if ALL of the following conditions are met:
 Normal mental status.
 Stable and protected airway.
 Unstable SBP or unstable HR as defined in PROTOCOL.
 Greater than 4 hours between injury and anticipated arrival at hospital.
If ALL of these conditions are met, the patient may be given frequent small sips of water or non-carbonated electrolyte replenishment drink (diluted to half strength).
2. Needle Thoracostomy
Consider performing needle decompression for suspected tension pneumothorax with increased respiratory distress per PROCEDURE: *Needle Thoracostomy*.

TRAUMA - PENETRATING

Parkmedic Standing Orders

1. Scene Safety Follow #1-#5 TCCC Care Under Fire Guidelines. **REFERENCE** 0010-T
TacMed General Information
2. XABCs Stop exsanguinating external hemorrhage if tactically feasible. Direct patient to control hemorrhage by self-aid if able.
If bleeding is not controlled with direct pressure and injury is amenable to tourniquet application, apply CAT tourniquet as proximal as possible over the clothes per
PROCEDURE: *Wound Care (Tourniquet)*
Secure airway. Assist respirations, utilizing OPA/ NPA or ALS airway (*King Tube*).
Maintain C-spine precautions with ALL airway maneuvers.
If patient in cardiac arrest, **GO TO** PROTOCOL: *Trauma Arrest*.
3. Spine **Stable:** Selectively as indicated per PROCEDURE: *Spine Immobilization*.
Immobilization **Unstable:** ALL patients, per PROCEDURE: *Spine Immobilization*.
4. Primary Vitals – categorize:
Assessment **Stable** if ALL present: SBP>100; Palpable radial pulse; HR<100;
10<RR<24; GCS=15.
Unstable if ANY present: SBP<100; Non-palpable radial pulse; HR>100;
RR<10 or RR>24; GCS<15; unstable airway; neurovascular deficit; GSW to
head, neck or torso; amputations other than digits (except thumb).
Law enforcement to immediately disarm pt if not alert and oriented x4.
Check the back for penetrating thoracic/abdominal injury. Check perineum.
Calculate trauma score per local medical advisor approved EMS policy.
Resuscitation for victims of penetrating trauma who have no pulse, no ventilations, and
no other signs of life will not be successful and should not be attempted.
5. Control Bleeding Direct pressure to entry and exit wounds. Elevation if possible.
Four-sided dressing to any neck or chest wounds.
Bandage non life/limb threatening injuries en route.
Do not move or remove impaled objects, unless absolutely necessary to extract patient.
For eviscerations, do not push contents back in body cavity. Cover eviscerated tissue and
area with saline-moistened sterile dressing.
6. Transport/
ALS Backup On-scene time <10 MINUTES when transport available.
Consider air transport, especially if ALOC or abnormal vital signs.
7. Oxygen **IF AVAILABLE:** High-flow per PROCEDURE: *Oxygen Administration*.
8. Prevent
Hypothermia Remove wet clothing and apply blankets.
9. Pelvic
Stabilization Per PROCEDURE: *Pelvic Stabilization*.
10. Administer/
Take Pill Pack Adult: Acetaminophen 500mg PO x 2 PRN Pain(1 gram total)
Ibuprofen 800mg PO x 1 PRN Pain
Levofloxacin 750mg PO x 1

TRAUMA - PENETRATING

11. Secondary Assessment
Repeat vital signs and mental status.
Perform secondary survey.
If patient with burns, **GO TO PROTOCOL Burns**
Determine PMH, medications, allergies.
If a penetrating eye injury is noted or suspected:
 Leave object in eye.
 Perform a rapid field test of visual acuity
 If object is protruding from the eye socket, stabilize object with tape then surround object with cup or other item to prevent jarring.
 If object is not protruding, cover eye with a soft patch that does not touch eye.
If protruding globe, do not push eye back into socket. Apply bulky dressing around eye, moist gauze over globe, and cover with a cup or similar protective object.
If impaled object, do not remove unless it is obstructing the airway. If protruding, dress around object to limit its movement.
12. IV/IO
Per PROCEDURE: *Intraosseous (IO) Access; IV Access and IV Fluid Administration.*
Stable: One 14-16 gauge IV.
Unstable: Two 14-16 gauge IVs.
 If SBP>100 palpable radial pulse AND HR<100, then administer LR/NS at maintenance (120ml/hr).
 If SBP 80-100 non-palpable radial pulse OR HR>100, then bolus LR/NS 500ml.
 If SBP <80, then bolus LR/NS 1-L under pressure.
Recheck vitals after boluses, and run IV fluids as above. Continue IVF to 3-L maximum.
13. Glucose Paste
If ALOC and unable to determine glucose:
 Administer 1 tube of Glucose (15g) squeezed into mouth and swallowed.
 If patient is unable to swallow, paste may be placed outside the teeth, between the gum and cheek, while patient is positioned on side. (Maintain spinal precautions if indicated).
14. Base Contact
If tactically feasible for further orders. (see Special Considerations).
15. Splint/Bandage Injuries
If fracture or extremity trauma, **GO TO PROTOCOL: Minor or Isolated Extremity Trauma**
Immobilize and splint fractures en route per PROCEDURE: *Fracture/Dislocation Management and Wound Care.*
Reduce any fracture/dislocation with deformity affecting ability to splint/transport, or any fracture/dislocation with decreased distal pulses.
If incomplete amputation, splint affected extremity.
If complete amputation, place moist sterile dressing over stump and apply tourniquet/pressure wrap. Place amputated part in coolest (not below freezing or in direct contact with ice) environment possible.

TRAUMA - PENETRATING

***** For items inside box below, unless otherwise instructed, presume/operate under communication failure in all tactical situations.

Parkmedic Base Hospital/Communication Failure Orders

1. Needle Thoracostomy
Per PROCEDURE: *Needle Thoracostomy*.
If not in arrest, **ALL** of the following must be present:
Severe respiratory distress (RR<10 or RR>24).
Hemodynamic compromise (SBP<80 Non-palpable radial pulse).
Decreased or absent breath sounds on one side.
Either distended neck veins **or** tracheal deviation away from side with tension.
2. IV Fluid
After administering 1-L of IVF, continue with boluses per Standing Orders, based on SBP only mental status and radial pulse, not HR.
3. Oral Fluids
Oral fluid rehydration may be attempted in a patient if **ALL** of the following conditions are met:
Normal mental status.
Stable and protected airway.
Unstable SBP or unstable HR as defined in PROTOCOL.
Greater than 4 hours between injury and anticipated arrival at hospital.
If **ALL** of these conditions are met, the patient may be given frequent small sips of water or non-carbonated electrolyte replenishment drink (diluted to half strength).
4. Midazolam (Versed)
For combative patients (must be a danger to self or others).
IV/IN: 2mg every 3 minutes, titrated up to 10mg.
IM: 10mg every 15 minutes, up to 3 doses.
5. Fentanyl (Sublimaze)
Adults: IV/IO/IN: 50-100 mcg every 5-15 minutes
IM: 50 - 100 mcg every 15 minutes
Recheck vitals and mental status before and after each dose
Administer **ONLY** if SBP > 100 and normal mental status

TRAUMA - PENETRATING

SPECIAL CONSIDERATIONS

TacMed

The care provider in the tactical situation may be forced to improvise and adapt his or her medical procedures based on situational factors in order to provide care for and prepare the patient for evacuation to a safer environment. It is presumed that in tactical situations all providers will function in radio failure, allowing all medications within their scope of practice, to be given without base contact. If safe to do so, the base can be contacted for further orders.

General

On-scene time SHOULD BE <10 MINUTES unless multiple patients, prolonged extrication, or transport unavailable. All delays on scene must be documented. On-scene treatment should be limited to airway management, pressure control of major bleeding, covering an open chest wound and spine immobilization. Begin organizing transport immediately. Contact base as soon as transport underway, or immediately if transport delayed. Reassess vital signs frequently once en route, and after any treatment.

Assessment

Primary assessment:

- X: eXsanguinating hemorrhage control
- A: Airway with cervical spine control
- B: Breathing
- C: Circulation/uncontrolled bleeding
- D: Disability/neuro status
- E: Exposure (undress) with Environmental control (temperature)

Secondary assessment: (head-to-toe) Identify immediate life threats: head injury, neck vein distention, tracheal shift, chest trauma/flail chest, unequal lung sounds, abdominal trauma, pelvic/femur fractures, back trauma, shock, major hemorrhage, survey of injuries. If ALOC, document pupil size/reactivity, and continuously monitor neuro status.

History: Mechanism of injury: Penetrating or blunt trauma? Speed of vehicles? Angle of impact, rollover, secondary impacts, exterior damage, airbags deployed? Seatbelt? Damage to steering wheel or windshield? Patient ejected? What did patient actually hit? Loss of consciousness? Fatality on scene? Extrication time >20 minutes? Height of fall? Helmet? Possible cause of incident: medical problem, drug overdose, alcohol, MI, seizure? AMPLE history.

Vitals: Repeat frequently during transport, including mental status. Tachycardia is an early sign of shock. A palpable radial pulse corresponds to SBP ≥ 80 , and a palpable carotid pulse corresponds to SBP ≥ 60 .

Shock: In trauma, hypotension is usually from internal/external blood loss, NOT from isolated head injury.

Head Trauma: Repeated neuro exams (GCS, pupils, respiratory pattern, posturing) are essential. Deteriorating mental/neuro status is an emergency and air transport should be utilized if available. Agitation may suggest head trauma or hidden medical cause. If patient's respiratory rate is <10, assist respirations with BVM at a rate of 20/min.

Amputations: Per PROCEDURE: *Wound Care*. Wrap extremity in dry sterile gauze, place in plastic bag and keep cool (put bag containing amputated extremity on ice if possible). Amputated part should NOT be wet or placed directly in water/ice.

Open Fractures: Per PROCEDURE: *Wound Care*. Irrigate with potable water, apply sterile dressing and splint per PROCEDURE: *Fracture/Dislocation Management*. Apply moist sterile dressing to exposed bone or tendon.

TRAUMA - PENETRATING

Pelvic Stabilization: Per PROCEDURE: *Pelvic Stabilization*.

Penetrating Trauma: Secure impaled objects and transport. Modify object or patient position for transport as needed. Do not remove object unless necessary for transport or CPR.

Transport If unstable trauma patient, initiate immediate transport with ALS treatment en route and ultimately air transport to trauma center if available.

AMA/TAR Not applicable for tactical situations.

Documentation MOI (mechanism of incident and mechanism of injury).
Loss of consciousness and duration.
Initial and repeat vital signs.
Pertinent exam findings (breath sounds, pelvic stability, fractures and bleeding).
If on scene >10 minutes, document reason.

Cross Reference

Procedures:

Base Hospital Contact Criteria
Fracture/Dislocation Management
Intraosseous (IO) Access
IV Access and IV Fluid Administration
King Tube
Mucosal Atomizer Device
Needle Thoracostomy
Oxygen Administration
Pelvic Stabilization
Spine Immobilization
Wound Care

Protocols:

Burns
Minor or Isolated Extremity Trauma
TCCC Care Under Fire
Trauma Arrest

Drugs:

Acetaminophen (Tylenol)
Fentanyl (Sublimaze)
Glucose Paste or Gel
Ibuprofen (Motrin/Advil)
Levofloxacin (Levaquin)
Midazolam (Versed)

UPPER AIRWAY OBSTRUCTION (Mechanical)

EMT and Parkmedic Standing Orders

1. Scene Safety Follow #1-#5 TCCC Care Under Fire Guidelines. **REFERENCE** 0010-T
TacMed General Information
Toxins/poisons can poison the EMS provider as well as the patient. Decontamination is paramount (see Special Considerations) because the environment may be hazardous, the patient may be hazardous, or their behavior unpredictable.
2. XABCs If **Incomplete Obstruction** suspected (patient is awake, coughing, or gagging), protect airway with position. Allow patient to assume position of comfort.
Assist respirations and suction as needed, but minimize stimulations to airway.
If **Complete Obstruction** (patient collapses or loses consciousness) and foreign body suspected, follow table below:

AIRWAY OBSTRUCTION – FOREIGN BODY

	Adult (>8 yrs old)	Child (1-8 yrs old)	Infant (birth – 1 yr)
Ventilations	10-12 per min.	20 per min.	20 per min.
<i>If unable to ventilate, reposition head and reattempt ventilation. If still unsuccessful:</i>			
Tongue/Jaw Lift	Yes	Yes	Yes
Finger Sweep	Yes	Only if object is seen	Only if object is seen
Abdominal Thrusts	Sets of 5	Sets of 5	Not Used
Chest Thrusts	Only if pregnant or obese	Not Used	Sets of 5 back blows followed by 5 chest thrusts
Back Blows	Not Used	Not Used	

Parkmedic: If unable to establish airway, contact base ASAP for orders per PROCEDURE: *Transtracheal Jet Insufflation*.

3. Oxygen **IF AVAILABLE:** High-flow per PROCEDURE: *Oxygen Administration*.
4. Assessment Age, vitals, history of event (onset during meal/play), ability to speak, drooling, sore throat, stridor, sputum, lung sounds, fever, temperature (if possible), mental status.
5. Transport/
ALS Backup Consider air transport if febrile child, severe distress, or unstable vitals.
6. Base Contact If tactically feasible for further orders. (See Special Considerations)

***** For items inside box below, unless otherwise instructed, presume/operate under communication failure in all tactical situations.

Parkmedic Base Hospital Orders/Communication Failure

1. TTJI Consider per PROCEDURE: *Transtracheal Jet Insufflation* if patient loses consciousness, above steps have failed, and the patient is unable to ventilate. Do not attempt to place *King Tube*.

UPPER AIRWAY OBSTRUCTION (Mechanical)

Cross Reference

Procedures:

Base Hospital Contact Criteria
Oxygen Administration
Transtracheal Jet Insufflation

Protocols:

Allergic Reactions
Ingestions/Poisoning
Shock Without Trauma

Drugs:

Epinephrine

Acetaminophen (Tylenol)

Scope	EMR, EMT and Parkmedic.
Class	Antipyretic, analgesic.
Action	Elevates pain threshold and readjusts hypothalamic temperature-regulatory center.
Onset	PO: 20 minutes.
Duration	4 hours.
Indications	Altitude illness. Febrile seizure. Fever. Mild pain. Trauma.
Contraindications	Known hypersensitivity (rare).
Form	500 mg tablets. 160 mg/5 ml liquid.
Dosage	>10-Adult: 1,000mg PO every 4-6 hours. Do not exceed 4,000mg in 24 hours. 0-10 yrs.: 20mg/kg PO every 4-6 hours, max dose 1,000mg. Do not exceed 4,000mg in 24 hours.

Cross Reference

Protocols:

Bites and Stings
Burns
Electrical and Lightning Injuries
Eye Trauma
Minor or Isolated Extremity Trauma
Seizures
Trauma (Non-Penetrating)
Trauma (Penetrating)

Drugs:

Ibuprofen (Motrin, Advil)

Atropine Sulfate

Scope	EMT per PROCEDURE: <i>NAAK/Mark I (Nerve Agent Antidote Kit)</i> . Parkmedic.
Class	Anticholinergic.
Action	Blocks the receptors of the parasympathetic nervous system (vagal) resulting in: Increased heart rate causing increased cardiac output. Decreased smooth muscle activity in stomach, intestine, and bladder causing decreased sweating, salivation, tears, and mucus secretions.
Onset	IV/IM: Immediate.
Duration	4 hours.
Indications	Chest pain with <u>symptomatic</u> bradycardia (HR<50 AND SBP<90). Organophosphate poisoning.
Contraindications	None for emergency use.
Side Effects	Tachycardia, palpitations, hypertension, dry mouth, increased thirst, headache, nervousness, weakness, dilated pupils, and blurred vision.
Form	Preload (10ml syringe): 1mg in 10ml (0.1 mg/ml). Vial: 8mg in 20ml (0.4 mg/ml). Auto Injector: 2mg dose.
Dosage	<u>Chest pain with symptomatic bradycardia</u> (ALL present): HR<50, SBP<90, AND symptoms (active chest pain, shortness of breath, nausea/vomiting, OR altered mental status). Adults: IV: 0.5mg every 5 min prn HR<50, SBP<90, AND symptoms (max 3mg). 0-14 yrs: Not indicated. <u>Organophosphate Poisoning: (BASE CONTACT)</u> Adults: IV/IM: 2mg every 5 minutes prn secretions, no max total dose. 0-14 yrs: IV/IO/IM: 0.04mg/kg (0.4ml/kg) (minimum dose 0.1mg, max dose 2mg) every 5 minutes prn secretions, no max total dose.
Notes	May increase myocardial oxygen demand, thus precipitating angina or worsen acute MI. Low dose Atropine (<0.1mg pediatric) can cause paradoxical bradycardia. Enhanced anticholinergic effects may occur with antihistamines, haldol, meperidine, procainamide, quinidine, and tricyclic antidepressants. Organophosphate poisoning requires large amounts of Atropine; there is no maximum dose. Call backup for more medication early. Titrate until bronchial secretions are controlled. REFERENCE PROCEDURE: <i>NAAK/Mark I (Nerve Agent Antidote)</i> for auto-injector dose.

Cross Reference

Procedures:

NAAK/Mark I (Nerve Agent Antidote Kit)

Protocols:

Cardiac Arrest Without AED (Adult Medical)
Ingestion/Poisoning

Bacitracin Ointment

Scope	EMT and Parkmedic.
Class	Topical (skin) antibiotic.
Action	Inhibits bacterial growth, thereby helping to prevent infection.
Indications	Minor cuts, scrapes and partial-thickness burns (< 15% total body surface area).
Contraindications	Known hypersensitivity. Large deep wounds (any wound that you think may require stitches). Any full-thickness burn, partial-thickness burns >15%, puncture wounds, animal bites.
Side Effects	Local allergy – rash. Systemic allergy – wheeze, diffuse rash, anaphylaxis.
Forms	Multi-use tube.
Dosage	After cleansing the area, apply thinly over affected part, and cover with bandage. Apply only once.
Notes	Application of Bacitracin Ointment may provide some pain relief.

Cross Reference

Procedures:
Wound Care

Protocols:
Burns
Minor or Isolated Extremity Trauma

Diphenhydramine (Benadryl, Benacine)

Scope	Parkmedic.
Class	Antihistamine.
Action	Blocks action of histamine, thereby suppressing allergic reactions. Has mild anti-nausea, sedative, and anticholinergic effects.
Onset	IV/IM/PO: Variable.
Duration	4-6 hours.
Indications	Allergic reactions or Anaphylaxis. Motion sickness and nausea (Base Hospital approval). Dystonic reactions (Base Hospital approval); reference "Notes" section.
Contraindications	Patient taking MAO inhibitors (Nardil, phenelzine, Parnate, tranylcypromine): these medications can increase the anticholinergic effects. Concurrent use of alcohol may worsen drowsiness.
Side Effects	Tachycardia, thickening of bronchial secretions, sedation, dry mouth, and a paradoxical agitation (as opposed to the normal side effect of sedation).
Form	Preload: 50mg in 1ml. Tablet/Capsule: 25mg and 50mg.
Dosage	<u>Adults</u> : IV/IM/PO: 50mg (over 1 minute if IV), may repeat every 6 hours. <u>0-14 yrs</u> : IV/IM/PO: 1 mg/kg (over 1 minute if IV), max single dose 50mg, may repeat every 6 hours.
Notes	Use half regular dose if elderly or intoxicated. Contact base prior to administration if patient is hyperthermic or in a hot environment. Dystonic reactions can occur up to 48 hours after a patient has taken certain medications (commonly antipsychotic or antiemetic). The reaction often involves twisting of facial or neck muscles.

Cross Reference

Protocols:

Allergic Reactions

Epinephrine

Scope	EMT (per Local Medical Advisor approved extended scope of practice) and Parkmedic.
Class	Catecholamine, Sympathomimetic.
Action	Cardiovascular: Increases strength of heart muscle contraction, increases heart rate, increases systolic blood pressure. Respiratory: Bronchodilation.
Onset	IV: Immediate. IM: 3-5 minutes.
Duration	IV: 5-60 minutes. IM: 1-4 hours.
Indications	Anaphylaxis/Allergic reaction. Asthma exacerbation. Medical cardiac arrest.
Contraindications	There are no contraindications to Epinephrine if a patient is hypoxic secondary to anaphylaxis or asthma, or in cardiac arrest.
Relative Contraindications	Severe hypertension. Coronary artery disease. Cocaine use.
Side Effects	Tachycardia, palpitations, hypertension, headache, anxiety.
Forms	Auto-injector: 0.3mg or 0.15mg in a single metered dose (1:1000). Ampule: 1mg in 1ml (1:1000). Preload: 1mg in 1ml (1:1000). Preload: 1mg in 10ml (1:10,000). NOTE: IM: 1:1000=1mg/ml concentration. IV: 1:10,000 = 1mg/10ml concentration.
Dosage	<u>EMT:</u> Allergic reactions/Asthma (severe) All ages: 0.3 ml (0.3 mg) of 1:1000 IM. Repeat dose every 5–10 minutes per protocol. <u>Parkmedic:</u> Respiratory distress (infectious upper airway obstruction, allergic reactions, asthma): >10 years: 0.3 ml (0.3 mg) of 1:1000 IM. 4–10 years: 0.2 ml (0.2 mg) of 1:1000 IM. <4 years: 0.1 ml (0.1 mg) of 1:1000 IM. All ages: Repeat dose every 5–10 minutes per protocol. Severe Respiratory Distress/Severe Anaphylaxis/Shock: All ages: 1ml (0.1mg) of 1:10,000 SIVP every 1-2 min until relief. Flush with 20 ml LR/NS after each dose. Adult Cardiac Arrest: 10ml (1mg) of 1:10,000 IVP. Pediatric Medical Arrest: 0.1ml/kg (0.01mg/kg) of 1:10,000 IVP/IO. Neonatal Resuscitation: 0.1ml/kg (0.01mg/kg) of 1:10,000 IVP/IO.

Epinephrine

Notes

IV epinephrine should be limited to near-death situations because of higher risk from cardiac side effects.

Do not administer Epinephrine concurrently with alkaline solution (e.g. Sodium Bicarbonate).

Check type of solution, concentration (IM=1:1000 vs. IV=1:10,000), and route.

Cross Reference

Procedures:

Epinephrine Ampule

Protocols:

Allergic Reactions

Cardiac Arrest Without AED

Shock Without Trauma

Upper Airway Obstruction (Mechanical)

Fentanyl

Scope	Parkmedic
Class	Narcotic analgesic/synthetic opioid agonist
Action	Analgesic with short duration of action. Minimal histamine release with reduced hemodynamic compromise and reduced nausea/vomiting
Onset	IV/IO: Immediate IM: 7-8 minutes IN: 1-2 minutes Duration: 0.5 – 1 hour (all routes) Peak Effect: IV/IO/IN: 5 min IM: 10-12 min
Indications	Severe pain in STABLE patients. See individual protocols.
Contraindications	Altered mental status Shock/hypotension Allergy to Fentanyl
Side Effects	Respiratory depression, bradycardia, hypotension, nausea and vomiting. Hypertension and rigid chest syndrome are rare.
Form	Ampule: 250 mcg in 5ml
Dosage	<u>Adults:</u> IV/IO/IN: 25-100 mcg every 5-15 minutes Repeat dosing depends on individual protocol IM: 50 - 100 mcg every 15 minutes Repeat dosing depends on individual protocol Recheck vitals and mental status before and after each dose Administer ONLY if SBP > 100 and normal mental status <u>0-14 yrs :</u> IV/IO/IN: 2-4 mcg/kg (max 50 mcg) every 5-15 minutes Repeat dosing depends on individual protocol IM: 2-4 mcg/kg (max 100 mcg) every 15 minutes Repeat dosing depends on individual protocol Recheck vitals and mental status before and after each dose Administer ONLY if SBP appropriate for age, and normal mental status
Notes	Many indications require prior base contact (see specific protocols) Should be given prior to a joint reduction if possible and if patient meets indications. Monitor blood pressure, respirations, and mental status carefully. Be prepared for respiratory depression. Have equipment to assist respirations, and Naloxone (Narcan) prepared for drug reversal if necessary. Hypotension after Fentanyl should be treated with fluids. Use with caution: Multi-system trauma Patients in whom respiratory depression should be avoided (asthma/COPD) Patients in whom CNS (mental status) depression should be avoided (head injury) At altitudes > 8,000 ft, respiratory depression may be exacerbated Elderly patients general require smaller doses and are more susceptible to hypotension. Side effects are increased by alcohol or drugs that are CNS depressants

Fentanyl

Cross Reference

Protocols:

Abdominal Pain
Bites and Stings
Burns
Cardiac Arrest Without AED
Eye Trauma
Minor or Isolated Extremity Trauma
Trauma (Non Penetrating)
Trauma (Penetrating)

Drugs:

Naloxone (Narcan)

Glucose Paste or Gel (Glucose)

Scope	EMT and Parkmedic.
Class	Carbohydrate (sugar).
Action	Elevates blood glucose rapidly.
Onset	PO: Within one minute.
Duration	Variable.
Indications	When directed by specific PROTOCOL, and blood glucose <80.
Contraindications	None.
Side Effects	May be aspirated if patient is unable to protect airway (i.e. is unable to swallow). Hyperglycemia (not clinically significant).
Form	15g per tube.
Dosage	Administer 1 tube of Glucose (15g) squeezed into mouth and swallowed. If patient is unable to swallow, paste may be placed outside the teeth, between the gum and cheek, while patient is positioned on side. May repeat in 10 minutes if altered mental status/seizure persists and glucose still <80.
Notes	Oral glucose is preferred for patients able to protect their airway (i.e. able to swallow). Do not overfill mouth because it will increase the potential for aspiration. IV/IO Dextrose is preferred (first-line) for patients with altered mental status or seizure; second-line is PO Glucose Paste, and third-line is IM Glucagon.

Cross Reference

Protocols:

Altered Mental Status/Altered Level of Consciousness (ALOC)
Cardiac Arrest Without AED
Heat Illness
Seizures
Shock Without Trauma
Trauma Arrest

Ibuprofen (Motrin, Advil)

Scope	EMR, EMT and Parkmedic.
Class	Antipyretic. Analgesic. Non-Steroidal Anti-Inflammatory Drug (NSAID).
Action	Prostaglandin synthetase inhibition.
Onset	PO: 20 minutes.
Duration	6–8 hours.
Indications	Fever Pain.
Contraindications	Known hypersensitivity. Pregnancy. Known ulcer or GI bleeding. Trauma other than isolated extremity. Known renal disease.
Side Effects	GI upset.
Form	200mg tablet. 100mg/5ml liquid.
Dosage	<u>Adult:</u> 800 mg PO every 6 hours <u>10-14 yrs:</u> 200mg tablet PO every 6 hours. <u>6mo-10yrs:</u> 5 mg/kg (max dose 200mg) liquid PO every 6 hours.

Cross Reference

Protocols:

Bites and Stings
Burns
Electrical and Lightning Injuries
Eye Trauma
Minor or Isolated Extremity Trauma

Drugs:

Acetaminophen (Tylenol)

Levofloxacin (Levaquin)

Scope	EMR, EMT/Parkmedic.
Class	Quinolone antibiotic.
Action	Prevents and treats infection.
Onset	Peak plasma level in 1hr.
Duration	12-16 hours.
Indications	Severe wounds (deep, crushed, or exposed tendon; open fracture; animal bites; penetrating injury; heavy contamination) with >3 hours between injury and arrival at hospital/clinic.
Contraindications	Allergy to quinolone antibiotics.
Side Effects	Rare.
Form	Tablet.
Dosage	Adult: 750mg PO
Notes	Included in "pill pack". Ensure no quinilone allergy prior to taking.

Cross Reference

Procedures: Wound Care

Protocols:
Abdominal Pain (Injuries)
Bites and Stings
Eye Trauma
Minor or Isolated Extremity Trauma
Trauma (Non-Penetrating)
Trauma (Penetrating)

Midazolam (Versed)

Scope	Parkmedic.
Class	Benzodiazepine. Sedative/hypnotic. Anticonvulsant. Muscle relaxant.
Action	Suppresses the spread of seizure activity through the brain. Depresses level of consciousness. Causes amnesia.
Onset	IV/IN: 1-2 minutes. IM: 7-8 minutes.
Duration	20-30 minutes.
Indications	Active seizures. Chest pain associated with cocaine use. Behavioral emergencies: extreme agitation or combativeness.
Contraindications	None, if actively experiencing seizures. Hypotension. Respiratory depression.
Side Effects	Respiratory depression (increased in elderly, COPD, or other CNS depressants on board). Hypotension. Altered mental status.
Form	Vial: 10mg in 2ml.
Dosage	<u>>10yrs–Adults:</u> IV/IN: 2mg every 3-5 minutes, max 10mg per individual protocols. IM: 5-10mg every 10-15 minutes, max 40-45mg per individual protocols. <u><10yrs:</u> IV/IN: 0.1 mg/kg (max dose 2mg) every 3 minutes, up to 5 doses. IM: 0.15 mg/kg (max dose 5mg) every 10 minutes, up to 4 doses. NOTE: For combative (NOT seizing) patients <10yrs, Base Hospital Orders Only .
Notes	<u>All patients should be on oxygen if possible.</u> Support respirations as needed. Monitor mental status, blood pressure, respirations, and oxygen saturation closely. Base Hospital Physician may alter dose and/or frequency based on patient's clinical presentation. In communication failure , titrate IV/IN or IM doses to control active seizures or behavioral emergencies, without maximum, while carefully monitoring vitals. Use of Midazolam for behavioral emergencies in children <10 years of age, or for cocaine-associated chest pain, is by Base Hospital Order only. Effects may be more pronounced in the elderly, in those with COPD, and in those with CNS depressants on board (e.g. alcohol, narcotics). Use with caution in these settings.

Cross Reference

Protocols:

Altered Mental Status/Altered Level of Consciousness (ALOC)
Seizures

Naloxone (Narcan)

Scope	Parkmedic.																		
Class	Narcotic Antagonist.																		
Action	Competes with narcotics for opiate receptor sites in the brain that affect pain and breathing, thereby reversing the respiratory depressant effects of narcotic drugs.																		
Onset	IV/IO: 2 minutes. IN/IM: 5 minutes.																		
Duration	1-4 hours.																		
Indications	Suspected narcotic intoxication with altered mental status AND apnea or slow shallow breathing.																		
Contraindications	None																		
Side Effects	Acute withdrawal syndrome in patients addicted to opiates (pain, nausea, vomiting, diarrhea, hypertension, tachycardia, tremors).																		
Form	Ampule: Various sizes: 1mg, 2mg, 10mg. Preload: 2mg in 2ml.																		
Dosage	> 10-Adults: IV: 2mg every 2 minutes prn ALOC (max 10mg). IN/IM: 2mg every 5 minutes prn ALOC (max 10mg). < 10 yrs: IV/IO: 0.1mg/kg (max 2mg) every 2 minutes. IN/IM: 0.1mg/kg (max 2mg) every 5 minutes.																		
Notes	Pinpoint pupils are the classic sign of narcotic use/overdose, but with multi-drug intoxications, pupil findings may be variable. Naloxone has no side effects in the absence of narcotics. It is remarkably safe, so do not hesitate to use it if indicated. Naloxone has a shorter duration of action than many narcotics, so observe closely for re-sedation. Repeated doses may be necessary. Some agents (e.g. Darvon, Fentanyl) may require higher than usual doses for reversal. Examples of narcotic preparations (natural and synthetic): <table border="0" style="width: 100%;"> <tr> <td>Butorphanol (Stadol)</td> <td>Loperamide (Immodium)</td> </tr> <tr> <td>Codeine (Tylenol #2,3,4)</td> <td>Meperidine (Demerol)</td> </tr> <tr> <td>Dezocine (Dalgan)</td> <td>Methadone (Dolophine)</td> </tr> <tr> <td>Diphenoxylate (Lomotil)</td> <td>Morphine (MS Contin, Oramorph,</td> </tr> <tr> <td>Fentanyl (Sublimaze, Duragesic Patch)</td> <td>Roxanol)</td> </tr> <tr> <td>Heroin</td> <td>Nalbuphine (Nubain)</td> </tr> <tr> <td>Hydrocodone (Anexsia, Lorcet, Lortab, Vicodin, Vicoprofen)</td> <td>Oxycodone (Percodan, Roxicodone, Tylox, Percocet, Roxicet)</td> </tr> <tr> <td>Hydromorphone (Dilaudid)</td> <td>Pentazocine (Talwin, Talacen)</td> </tr> <tr> <td>Levorphanol (Levo-Dromoran)</td> <td>Propoxyphene (Darvon, Darvocet)</td> </tr> </table>	Butorphanol (Stadol)	Loperamide (Immodium)	Codeine (Tylenol #2,3,4)	Meperidine (Demerol)	Dezocine (Dalgan)	Methadone (Dolophine)	Diphenoxylate (Lomotil)	Morphine (MS Contin, Oramorph,	Fentanyl (Sublimaze, Duragesic Patch)	Roxanol)	Heroin	Nalbuphine (Nubain)	Hydrocodone (Anexsia, Lorcet, Lortab, Vicodin, Vicoprofen)	Oxycodone (Percodan, Roxicodone, Tylox, Percocet, Roxicet)	Hydromorphone (Dilaudid)	Pentazocine (Talwin, Talacen)	Levorphanol (Levo-Dromoran)	Propoxyphene (Darvon, Darvocet)
Butorphanol (Stadol)	Loperamide (Immodium)																		
Codeine (Tylenol #2,3,4)	Meperidine (Demerol)																		
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Hydromorphone (Dilaudid)	Pentazocine (Talwin, Talacen)																		
Levorphanol (Levo-Dromoran)	Propoxyphene (Darvon, Darvocet)																		

Cross Reference

Protocols:

Altered Mental Status/Altered Level of Consciousness (ALOC)
Ingestions/Poisoning

Ondansetron (Zofran)

Scope	Parkmedic
Class	Antiemetic.
Action	Selective serotonin (5-HT ₃) receptor antagonist. Treats and prevents nausea and vomiting.
Onset	IV/IO: 2–5 minutes Duration: IV/IM 4 hours: PO/SL 3 hours IM/SL: 7–8 minutes Peak Effect: IV/IO: 5 min IM: 20 min. PO/SL 30 – 120 min.
Indications	Nausea/vomiting.
Contraindications	Hypersensitivity to Ondansetron.
Side effects	Headache (26%), sedation (6-10%), diarrhea (3-11%), dry mouth.
Form	4mg Oral dissolving tablet (ODT) 2ml vial: 2 mg/ml, total 4mg.
Dosage	Adult: If nausea or vomiting: IV/IO: 4mg over 2–5 min, repeat in 15 min x3 prn SL (ODT): 4mg. If no IV/IO, repeat in 15 min x2 prn IM: If no IV/IO, give 8mg IM, repeat in 15 min x2 prn 4 – 14 yrs: IV/IO: 4mg over 2–5 min, repeat in 15 min x3 prn. SL (ODT): 4mg. If no IV/IO, repeat in 15 min x2 prn . IM: If no IV/IO, give 0.2mg/kg (max 8mg) IM, repeat in 15 min x2 prn 1 mo – 4 yrs: IV/IO/SL(ODT)/IM: <u>Base Hospital Order ONLY</u> , NOT in communication failure. 0.1mg/kg.
Notes	Monitor cardiovascular status. Rare cases of tachycardia and angina have been reported. Standing order medication except in Ingestion/Poisoning (protocol 2140).

Cross Reference

Protocols:

Abdominal Pain/Injuries
Bites and Stings
Burns
Electrical & Lightning Injuries
Eye Trauma
Ingestion/Poisoning
Minor or Isolated Extremity Trauma

Pralidoxime Chloride (2 PAM)

Scope	EMT and Parkmedic (For both levels as part of NAAK/Mark I procedure).
Class	Cholinesterase reactivator (acts via dephosphorylation).
Action	Reduces neuromuscular effects (muscarinic, nicotinic) and CNS effects by regenerating cholinesterases. Detoxifies remaining organophosphate molecules.
Onset	IM: 10–40 minutes.
Duration	IM: 6 hours.
Indications	Organophosphate poisoning/Nerve gas exposures with several AB-SLUDGEM symptoms.
Contraindications	None for emergency use.
Side Effects	Dizziness, headache, nausea, tachycardia, weakness, hypertension, blurred vision.
Form	Auto-Injector: 600mg.
Dosage	IM: 600mg auto-injection. REFERENCE PROCEDURE: <i>NAAK/Mark I (Nerve Agent Antidote Kit)</i> for repeat dosing.
Notes	Acts synergistically with atropine to treat cholinergic excess. Repeat doses may be needed in severe poisonings. Not to be used for prophylaxis.

Cross Reference

Procedures:

NAAK/Mark I (Nerve Agent Antidote Kit)

Protocols:

Ingestion/Poisoning