TACTICAL MEDIC HANDBOOK
2013 Edition

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Table of Contents

Disclaimer:

These guidelines were developed as a reference for the Counter-Narcotics and Terrorism Operational Medical Support (CONTOMS) Program. The guidelines and protocols provided in this manual are based on the most current information available at the time of publication. Every effort has been made to ensure the accuracy of this information, but the CONTOMS Program cannot be responsible for discrepancies or typographical errors. Since medical practice is continually evolving, providers are reminded to remain cognizant of the most current practices that may revise or replace the approach adopted in this publication. Providers are also cautioned not to rely on this manual as a sole source of information about patient care, but rather to tailor their therapy to the clinical context and to consult medical control for any concerns.

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The following works were referenced in the development of this Manual:

- Tactical Combat Casualty Care Guidelines
- US Special Operations Command Tactical Medical Emergency Protocols
- Tintinalli's Emergency Medicine

Part 1: Overview

Definitions:

ACLS—the American Heart Association's Advanced Cardiac Life Support Course.
Advanced airway—specialized and more invasive procedures, other than manual airway skills and oropharyngeal/nasopharyngeal airways, such as rescue airways, orotracheal and nasotracheal intubation, direct laryngoscopy, digital intubation, and surgical airway, performed only by those who have completed practical training in each of these skills and have the skills within their scope of practice.
AED—semi-automatic external defibrillation (or defibrillator).
AGE—arterial gas embolism.
AHA—the American Heart Association.
ALS—advanced life support.
AVPU—a mnemonic for assessment of mental status, consisting of: alert, responsive to verbal stimuli, responsive to painful stimuli, and unresponsive.
BLS—basic life support.
BP—blood pressure.
BPM—beats per minute.
BSA—body surface area.
Burn center—a medical care facility designated to care for severely burned patients.
BVM—bag-valve-mask.
CHF—congestive heart failure.
CN—cranial nerve; chloroacetophenone (tear gas).
CS—orthochlorobenzalmalonitrile (an irritant used for riot control).
C-spine—cervical spine.
Combat Pill Pack (CPP) —individual pack of medications (analgesic and antibiotic) to be given in the event of injury.
CONTOMS— Counter-Narcotics and Terrorism Operational Medical Support Program.
CVA—cerebrovascular accident or stroke.
DCS I, DCS II—decompression sickness types I and II.
DNR (Do Not Resuscitate)—a legal document that expresses the patient's wish to decline heroic, life saving measures in the event that his or her condition deteriorates to a life-threatening level.
D_5W—5% dextrose in water.
D_{50}—50% dextrose solution.
Emergency medical services (EMS)—community-based advanced life support (ALS) and/or basic life support (BLS) services that respond to provide local out-of-hospital emergency care.
Emergency Medical Technician—Tactical (EMT-T)—an individual certified as an Emergency Medical Technician–Tactical (EMT-T) through the Counter-Narcotics and Terrorism Operational Medical Support (CONTOMS) Program.
EMS provider—any person or service authorized by a local, regional, or national body to provide emergency medical service.
EMT-B—Emergency Medical Technician-Basic, as recognized by the National Registry of Emergency Medical Technicians.
EMT-I—Emergency Medical Technician-Intermediate, as recognized by the National Registry of Emergency Medical Technicians.
EMT-P—Emergency Medical Technician-Paramedic, as recognized by the National Registry of Emergency Medical Technicians.
ET—endotracheal.
ETT flush—a bolus of IV fluid (3–5 mL for pediatric patients; up to 10 mL for adults) administered via the endotracheal tube following ETT administration of medications. Use of the ETT for medication

administration is to be considered a temporary route; IV or IO access should be secured as soon as possible.

Excited Delirium Syndrome (ExDS)—a condition that manifests as a combination of altered mental status, psychomotor agitation, anxiety, hallucinations, speech disturbances, violent and bizarre behavior, insensitivity to pain, elevated body temperature and superhuman strength.

Fluid challenge—the rapid administration of 500 mL of IVF as a bolus in order to improve the patient's hemodynamic parameters.

GCS—Glasgow Coma Scale.

Greater than/less than—are indicated by ">" meaning "greater than" and "<" meaning "less than." Example: "BP <90 mm Hg" means "BP less than 90 mm Hg."

HEENT—head, eyes, ears, nose, and throat.

HR—heart rate.

Immobilize—means to temporarily splint a body part or limb using mechanical or traction devices to prevent the body part from moving. Immobilization accomplishes its task without assistance.

IFAK—Individual First Aid Kit.

IO—intraosseous. Used to refer to administration of fluids and/or medications via IO access. For pediatric and adult patients, IO access may be used for temporary access if an IV is not established within 90 seconds or after three attempts. IO access should only be used when the patient is unstable or the establishment of parenteral access is deemed essential for patient care.

IV—intravenous. IV access is used to administer any balanced electrolyte solution, such as lactated Ringer's or normal saline and/or medications. Optimal catheter size for rapid fluid resuscitation in adults is 14–16 gauge/1-inch length. If rapid fluid resuscitation is not required, smaller catheter sizes or heparin/ saline locks may be used. Heparin used for this procedure is not considered a medication.

IVF—intravenous fluids.

IVP—intravenous push of medications.

KVO—using the minimal intravenous fluid rate necessary to "keep vein open."

LEA—law enforcement agency.

LR—lactated Ringer's intravenous solution.

Medical control—supervisory guidance and direction for the medical skills performed by TEMS medic.

Medical director—a physician who supervises the clinical care of the TEMS medical program.

Medic—medical personnel who are authorized to operate under these protocols by their agency.

Medical program coordinator—a LEA designee charged with coordination and liaison among staff, the medical director, and LEA personnel.

MI—Myocardial Infarction or heart attack.

NC—nasal cannula.

NPA—nasopharyngeal airway.

NRB—non-rebreather oxygen mask.

NS—normal saline intravenous solution.

OC—oleoresin capsicum (used as an irritant in pepper spray).

Official in charge (OIC)—the senior law enforcement person in charge of a given mission to which an TEMS medic is assigned.

Online medical control (OLMC)—the online (meaning in direct communication with field providers) physician or physician designee, affiliated with a bona fide federal/local/regional EMS system, who accepts responsibility for a specific patient and for directing the actions of pre-hospital EMS personnel consistent with these protocols.

OPA—oropharyngeal airway.

Pediatric patient—in these protocols, means a patient who has not yet reached puberty (i.e., a patient without breast development or pubic, axillary, or facial hair).

PO—orally.

PPE—Personal Protective Equipment, such as gloves and masks.
PPV—positive pressure ventilation such as: (1) mouth-to-mask ventilation with oxygen; (2) two-person bag-valve-mask technique with oxygen; (3) flow-restricted oxygen-powered ventilation device; or (4) one-person bag-valve-mask technique with oxygen.
Practical area of responsibility—the geographical area within which the TEMS medic might be reasonably expected to provide service. In some cases, this may be well defined as a region, field division, or some other organizational element. In other cases, the medic may have national or global responsibilities and may be unable to preplan local medical resources.
Rescue Airway- Extraglottic/Supraglottic airway management tools including Laryngeal Mask Airway Supreme (LMAS), Combitube and King LT-D devices.
SC—subcutaneously.
SL—sublingually.
SLUDGE—the toxidrome associated with organophosphate/carbamate (chemical nerve agent/pesticide) poisonings, consisting of: salivation, lacrimation, urinary incontinence, defecation, gastric cramping, and emesis.
Stabilize—hold a limb or body part in a stable position and prevent inadvertent movement. Stabilization is used until immobilization can be achieved through splinting.
TEMS – tactical emergency medical support.
Trauma center—refers to a medical facility designated by the EMS system as being specially staffed and equipped to manage trauma patients.
VF—ventricular fibrillation.
VT—ventricular tachycardia.
XABCs—exsanguinating hemorrhage, airway, breathing, and circulation.

General Considerations

1. Introduction

1.1. The out-of-hospital emergency care protocols in this manual were prepared by the CONTOMS Program for Tactical Medical Support (TEMS). These protocols reflect current treatment methodologies for the management of adult and pediatric patients in an emergency encountered in the tactical environment.

1.2. In general, protocols are not absolute and ultimate treatment doctrine. They serve as guidelines for the range of problems the TEMS medic may encounter. Patients often do not fit into a standard presentation and there is no substitute for good clinical judgment. *Within the framework of established protocols, each medical provider must always ensure individualized treatment based on clinical judgment, the specific circumstances of care, and the provider's level of training.*

1.3. All care rendered by TEMS medics is considered to be an extension of the medical director's authority to practice. As such, the medical director is responsible for directing all patient care by covered TEMS personnel. This supervision is established through training, education, medical protocols, review of treatment records, and other quality improvement mechanisms. Occasionally, the medical director may also provide online direction to TEMS personnel.

2. Scope of Practice

2.1. For the purposes of these protocols, scope of practice shall be defined as those skills and procedures outlined in these protocols for which the medic is appropriately trained. *Medical providers may perform only those skills for which they are trained and currently credentialed by medical control.*

2.2. Certain skills, other than those of a nationally or state certified Emergency Medical Technician (EMT), are authorized for TEMS medics acting within the scope of duty under certain specific conditions identified during training and falling within these protocols.

2.3. If directed by an onsite physician or base station physician to perform a skill not included in the medic's scope of practice, it is incumbent upon the TEMS medic to inform the physician of the limitation and to agree upon an alternative patient treatment plan.

3. Medical Control

3.1. Online medical control exists when a direct link is established between the TEMS medic and a physician to provide active consultation on patient treatment in progress.

3.1.1. The physician may be located on scene, reached at a local base station, or contacted through the pre-established procedures.

3.2. The medic should request appropriate verification of identity from any on-site physician. If the physician is not acting as part of the local emergency medical services (EMS) system, then the TEMS medic may exercise discretion in assuring that the physician can provide appropriate patient care in that setting.

3.2.1. On-site physicians who assume medical control must agree to remain with the patient until care is transferred and must sign the patient treatment form.

3.3. Any dispute between an on-site physician and the TEMS medic should be resolved by establishing online communications with the medical director or a base station physician.

3.4. Online medical control can provide consultation and direction of out-of-hospital care by TEMS medics. The medical director, his or her designee, or a recognized base station physician operating within an established EMS system shall perform online communications.

3.5. TEMS medics shall honor online medical control as long as the orders are within their scope of practice. In the event TEMS medics are called upon to perform care outside of this scope of practice, they shall advise the physician that they are unable to comply with the order because it is outside their scope of practice and training.

3.6. Offline medical control is constantly and transparently in place through the definition of scope of practice, protocols, the quality improvement program, and other monitoring systems.

4. Framework for TEMS Care Delivery

4.1. Relationship of TEMS to Traditional Prehospital Care: Care of tactical trauma patients is not the same as care of trauma patients in the secure environment. ATLS, BTLS, and PHTLS, while worthy programs, were never designed for use in the hostile environment. In tactical medicine, care of the patient must be modified to fit the threat environment. Many concepts in traditional EMS have been modified for the delivery of TEMS care.

4.2 Relationship of TEMS to Military Medicine: The US military currently follows the Tactical Combat Casualty Care (TCCC) Guidelines. These guidelines divide care delivery into three phases: Care Under Fire, Tactical Field Care, Tactical Evacuation Care. Many practices in TEMS have been derived from military medicine and adapted to the civilian environment.

4.3 TEMS Phases of Care: In TEMS, care delivery is divided into three phases: hot zone care, warm zone care, and cold zone care. A synopsis of the type of care to be delivered in each phase is given below. ***These procedures hold for TEMS only***. Traditional civilian EMS assumes that all patients have a chance to survive. However, in law enforcement situations in which the rescuers' lives are in immediate danger, alternative standards of care are adopted.

4.3.1 **Hot zone care**: Care given at the scene of injury while under a direct and immediate threat such as effective fire. Highly limited care, the goal is to get the victim out of the fire zone without creating new casualties.

- Return fire as directed or required, if applicable.
- Keep yourself from being injured.
- Keep the victim from sustaining further injury. If possible, direct him to take cover and start self-aid.
- Stop any life-threatening hemorrhage with a tourniquet, if safe to do so, as described in the Exsanguinating Hemorrhage Protocol on *page Purple 42*.
- Extract casualty with you when you leave.

4.3.2 **Warm zone care**: Care given once the medic and the casualty are no longer under a direct and immediate threat, but some level of threat persists. This phase is when the majority of tactical medical decision making and TEMS care will take place.

- Address the XABCs, utilizing the TEMS Protocols in Part 2 of this manual.

4.3.3 **Cold zone care**: Care given once there is no longer a threat. Care will usually involve aircraft, boat, or vehicle transport to an area where additional medical equipment may be available.

- Standard Pre-hospital EMS Care.
- Continue treatment begun in the warm zone and monitor the patient.
- Document the care given and prepare to hand-off the casualty to the next echelon of medical care.

4.4. *Note:* No handbook can anticipate every tactical and/or medical situation that may occur during a rescue. When faced with an unusual situation, the TEMS medic will have to improvise, adapt, and overcome.

5. Implied or Informed Consent

5.1. Patients NOT in custody: Standard medical ethics and principles of law allow all patients of legal age and "sound mind" to consent to or refuse medical treatment. Therefore, the following guidelines shall apply.

- All conscious patients shall be evaluated by TEMS medics for their competency to make decisions concerning the need for emergency medical care. Conscious, rational patients not in custody shall be allowed to refuse care from TEMS medic personnel if they so choose.
- If a patient not in custody refuses out-of-hospital treatment for a condition that the TEMS medic feels requires care, the patient shall be requested to sign the appropriate "Refusal of Care" section of the patient treatment form and treatment at a medical facility will be suggested. If the patient refuses to sign the "Refusal of Care" section, this should be noted on the form and witnessed by a person other than the medic who is completing the form.
- Persons judged to be incompetent by the TEMS medic for medical decision making, or who are unconscious, shall be treated under the implied consent doctrine.
    - A person believed to be under the influence of drugs or alcohol shall be considered incompetent for the purposes of refusing emergency medical care.

5.2. Patients in custody: Special care must be taken to ensure that persons who are in custody have appropriate access to medical care and that the environment in which care is offered is not coercive or intimidating. All ill or injured persons under LEA control shall receive appropriate medical attention and/or be medically cleared by a competent medical authority at some time during mission activities. Individuals refusing required medical care on scene by TEMS medics will be transported for independent medical evaluation.

6. Resuscitation Guidelines

6.1. When *to start* resuscitation.

- As soon as the absence of pulse and/or respiration is established (unless a contraindication in Section 6.2 is present)

6.2. When *not to start* resuscitation (assuming a normothermic body).

- Any patient displaying obvious and accepted signs of irreversible death such as rigor mortis, dependent lividity, decapitation, decomposition, incineration, or other lethal injury.
- When an original, signed, physician's Do Not Resuscitate (DNR) order is presented. (See Section 7).
- When the risks and costs of starting resuscitation clearly outweigh the potential benefits, given the totality of circumstances (e.g. mass casualty scenario where such patients would be triaged as expectant or TEMS scenario where the risk to providers is too great to perform CPR).

6.3. When to *stop* resuscitation.

- When the patient regains pulse and respiration.
- When equally or more highly trained resources or health care personnel take over.
- When resources are physically exhausted.
- When the risks and costs of continuing resuscitation clearly outweigh the potential benefits, considering the totality of circumstances.
- When a patient's personal physician or medical control orders resuscitation to stop. Contact medical control for options to stop:
  - When the patient is unresponsive to ACLS protocols for 20 minutes.
  - In the absence of advanced cardiac life support, when the same TEMS medic has documented the absence of all vital signs for 20 consecutive minutes, in spite of BLS measures, except in the case of hypothermia.

6.4. Management of the Deceased

6.4.1. If resuscitation efforts are discontinued, arrangements should be made with regard to disposition of the body. Consider potential forensic and evidentiary issues as well as local laws, since such disposition falls under the jurisdiction of the state within which the death occurred.

7. Do Not Resuscitate (DNR) Program

7.1. Most states have enacted some form of Do Not Resuscitate (DNR) legislation. DNR programs allow a patient who suffers from a terminal medical condition to establish a do not resuscitate request. This expresses, in a legal form, the patient's wish to decline heroic life-saving measures in the event that they suffer respiratory or cardiac arrest. A patient has the right to verbally revoke a DNR order at any time. DNR orders must be sanctioned by a government body to be valid. In general, these orders include the patient's name, certification by a physician of the terminal condition, and verification by a witness that the DNR order is the patient's wish. An identification card or bracelet may be issued by a governmental authority in addition to the written order stating certification of these facts.

7.2. TEMS medics may honor a state or governmentally established DNR program when the TEMS medic can confirm that the presenting patient is in fact the patient for whom the DNR order was issued.

7.3. If the TEMS medic can confirm the identity and validity of a DNR participant:

- Initiate a community EMS response if one is available. If no EMS is available, arrange appropriate patient transportation.
- Limit patient care to noninvasive palliative measures to ensure patient comfort while awaiting EMS response.

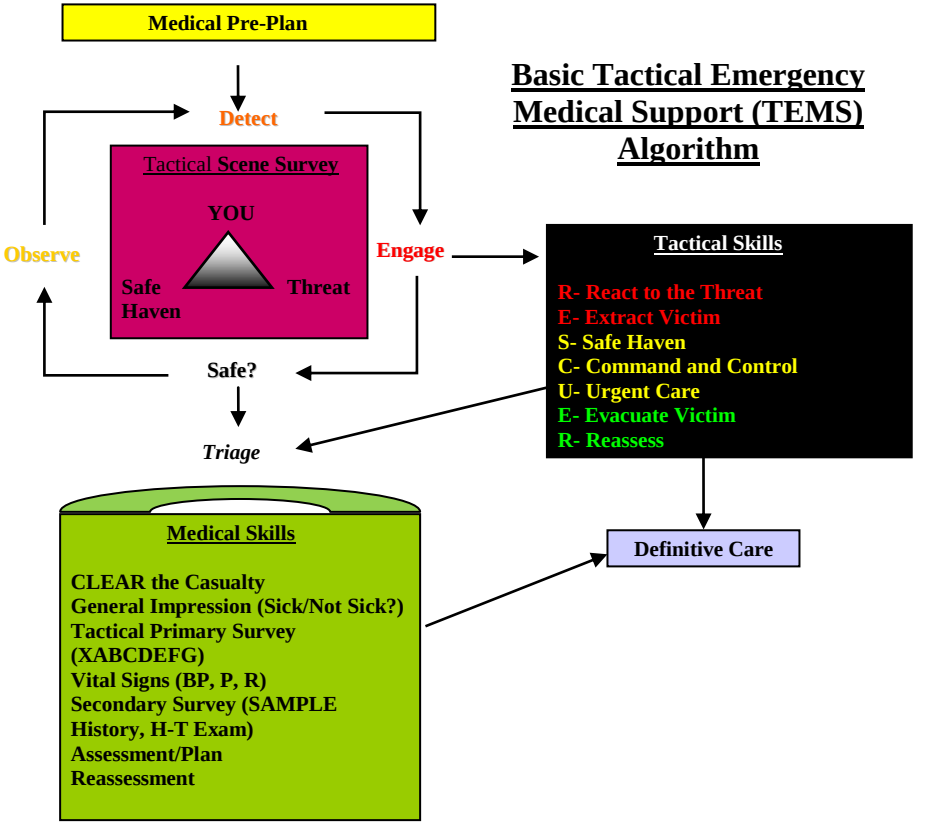
7.4. If a valid DNR cannot be immediately confirmed, the TEMS medic shall begin to institute appropriate resuscitative efforts and request a community EMS response.

8. Documentation

8.1. *A patient treatment form must be completed for each patient examined or treated by the TEMS medic.* This report provides an organized record of the important facts of a patient's presentation and treatment.

8.2. The patient treatment form should be prepared as soon as practical to document patient care delivered. A copy of this report should be handed over at patient transfer, if possible. However, mission requirements or patient condition may prevent immediate form completion. If care has been performed, a written patient report should be provided to the receiving facility as soon as practical.

General Approach to the Patient Care



Medical Pre-plan

1. Medical Preplanning

1.1. Baseline Medical Planning

1.1.1. Hospital Site Survey: The TEMS medic will establish a file containing a Hospital Site Survey for each hospital within the TEMS medic's practical area of responsibility. This file will be updated as required and made available for all tactical operations.

1.1.2. EMS System Survey: In addition, the TEMS medic shall compile information regarding each EMS system in the TEMS medic's practical area of responsibility.

1.1.3. Baseline Equipment: The TEMS medic should ensure that all team members have mission-appropriate medical equipment, such as Individual First Aid Kits (IFAKs) and Combat Pill Packs (CPP), as part of their duty gear. The medic should ensure that all operators are familiar with the contents of any medical kits carried and their use in the event of injury.

1.2. Medical Threat Assessment: TEMS medics will prepare a Medical Threat Assessment (MTA) prior to each mission. Obviously, time may not allow a MTA to be done for all missions. Generally, at least the following information will be obtained:

1.2.1. The method by which all LEA personnel shall obtain assistance from the medic prior to the operation, in the event of minor injury or illness during the mission, and in the event of major or critical illness or injury during the mission.

1.2.2. The location (street address), telephone numbers, and capabilities for the designated hospitals to be accessed for the mission.

1.2.3. The primary transportation methods to the medical facilities and the routes to these facilities.

1.2.4. A brief statement of capabilities and telephone access numbers of local EMS system.

1.2.5. A pre-designated landing zone, access route, and a method to communicate with air assets if helicopter use is a possibility.

1.2.6. A pre-designated casualty collection point and rally point in the event members become separated during the mission.

1.3. **PACE** Methodology: The TEMS Medic should incorporate the PACE Methodology when pre-planning medical aspects of an upcoming mission: **P**rimary plan, **A**lternate plan, **C**ontingency plans, **E**mergency plan.

1.4 Medical Briefing: The TEMS medic will advise team members during the pre-mission briefing of the important aspects of the medical plan, including appropriate, nonstandard protective equipment approved by the official in charge (OIC).

MEDICAL THREAT ASSESSMENT

OPERATION LOCATION _____ **OPERATION TYPE** _____

MEDICAL RESOURCES

Local Medical Facility - Name _____ Phone _____ (area code) (number)

Address _____

Point of Contact (POC) _____ Title _____ Phone _____

Travel Time Land _____ Air _____

Helipad	Yes	No	if yes, Elevated	Ground	On / Off Site
24 Hour ED	Yes	No			
Emergency Medicine Physicians	Yes	No			
Dedicated MEDEVAC	Yes	No			

Comments:

Trauma Center - Name _____ Phone _____ (area code) (number)

Address _____

Point of Contact (POC) _____ Title _____ Phone _____

Travel Time Land _____ Air _____

Helipad	Yes	No	if yes, Elevated	Ground	On / Off Site
24 Hour ED	Yes	No			
Emergency Medicine Physicians	Yes	No			
Dedicated MEDEVAC	Yes	No			

Comments

Burn Center - Name _____ Phone _____ (area code) (number)

Address _____

Point of Contact (POC) _____ Title _____ Phone _____

Travel Time Land _____ Air _____

Helipad	Yes	No	if yes, Elevated	Ground	On / Off Site
24 Hour ED	Yes	No			
Emergency Medicine Physicians	Yes	No			
Dedicated MEDEVAC	Yes	No			

Comments:

EMS SERVICE Name _____ Phone _____
(area code) (number)

Address _____

POC _____ Title _____ POC Phone _____

Travel Time Land _____ Air _____

No. ALS Units _____ No. BLS Units _____ No. Aircraft _____
Full Time Staffing Call or Volunteer Combined Staffing

Comments

HELCIOPTER PLAN Name _____ Phone _____
(area code) (number)

Address _____

POC _____ Title _____ POC Phone _____

Flight Restrictions / Landing Zone Requirements

Location _____ Minimum Size _____ ft x _____ ft
Latitude _____ Longitude _____ Preferred Size _____ ft x _____ ft

Agency Policy on the following

Flight over Tactical Hot Zone	Yes	No			
Landing in Tactical Hot Zone	Yes	No			
Tactical Team Weapons on Board	Yes	No			
Transport of Haz-Mat Exposure	Yes	No			
Transport of Prisoners	Yes	No	Handcuffed	Yes	No

Radio Frequencies	Tone Coded Squelch	Call Signs
Aircraft Type	**Number of Casualties**	**Staffing**

LZ Safety

Overhead Obstructions	Yes	No	
Loose Ground Debris	Yes	No	
Flares	Yes	No	
Smoke	Yes	No	

Comments

ENVIRONMENTAL THREATS

Weather Threats WBGT _____ Flag Conditions _____ Temperature _____

Winds _____ Humidity _____ Precipitation _____
speed direction

Comments (include probability of adverse weather phenomena such as snowstorms, thunderstorms and tornados)

Heat Casualties likely	Yes	No
Rehydration Logistics	Yes	No
Uniform Adjustments	Yes	No
Work Cycles	Yes	No

Recommended water consumption per person, per hour _____ quarts

Cold Casualties Likely	Yes	No
Rehydration Logistics	Yes	No
Uniform Adjustments	Yes	No
Work Cycles	Yes	No
Shelter	Yes	No

Aeromedical evacuation likely to be curtailed due to weather conditions ? Yes No

HAZARDOUS MATERIALS THREATS

Exposure to chemicals likely	Yes	No
Are chemical stored on the property or nearby	Yes	No
Are there any industrial hazards nearby	Yes	No

CHEMTREC 1-800-424-9300

in DC 202-483-7616

Chemical	ID Number	Health Hazard	Fire or Explosive Hazard

Protective clothing required	Yes	No
Self – contained breathing apparatus required	Yes	No
Decontamination logistics	Yes	No
Fire / Rescue HazMat team on standby	Yes	No

Comments

ANIMAL THREATS

Exposure to indigenous animals likely Yes No
If yes, specify a control strategy (consider ticks in wooded or grassy areas) _____

Exposure to domestic animals / pets likely Yes No
If yes, specify a control strategy _____

Are guard dogs / watch dogs likely to be encountered Yes No
Will police horses be utilized Yes No
Will police dogs be utilized Yes No
See Veterinary Care Information below

BIOLOGICAL THREATS

Any threats associated with biomedical research Yes No
Exposure to human body fluids likely Yes No
Universal precautions implemented Yes No
Contamination of water likely Yes No
Specify exposure control strategy _____
Comments

PLANT THREATS

Exposure to poisonous plants (poison ivy, sumac) likely Yes No
Uniform Adjustments Yes No
Decontamination Logistics Yes No

OTHER SUPPORT SERVICES

VETERINARY CARE Name _____ Phone _____ (area code / number)

Address _____

POC _____ Title _____ POC Phone _____

Travel time to facility Land _____ Air _____

Landing site or helipad at facility Yes No if Yes, Elevated Ground

Canine Services Yes No

Equine Services Yes No

Comments

PUBLIC WORKS

Street closings and routes of land travel verified Yes No

Comments

SOCIAL SERVICES

Are children at risk Yes No
Is a pediatric medical facility needed Yes No

Comments

Are social services needed Yes No
Are there schools in the area Yes No

POC _____ Phone _____

1. Name of School _____ Principal _____

Address _____ Arrival Time _____ Dismissal Time _____

2. Name of School _____ Principal _____

Address _____ Arrival Time _____ Dismissal Time _____

Comments

ADDITIONAL COMMENTS

HAZARDOUS MATERIALS DATA SHEET

HAZARDOUS MATERIAL

Shipping Name _____ DOT Hazard Class _____

Chemical Name _____ ID No. _____ STCC No. _____

PHYSICAL DESCRIPTION

Normal Physical Form Solid _____ Liquid _____ Gas _____

Color _____ Odor _____ Other _____

CHEMICAL PROPERTIES

Specific Gravity _____ Vapor Density _____
Boiling Point _____ Melting Point _____
Vapor Pressure _____psi or mmHg Expansion Ratio _____
Solubility in water Yes No Degree of solubility _____
Other _____

HEALTH HAZARDS

Yes Inhalation Hazard Yes No TLV / TWA _____ppm (mg/m3) LC50 _____ ppm/hr.

Yes Ingestion Hazard Yes No LD50 _____ g/kg
Absorption Hazard Yes No Skin Yes No Eyes Yes No
IDLH Value _____ ppm/air (mg/m3) STEL Value _____ ppm/air(mg/m3)
Chronic Hazards Carcinogen Yes No Mutagen Yes No Teratogen Yes No
Hazardous to Aquatic Life Yes No

Other _____

Decontamination Procedures _____

First Aid Procedures _____

FIRE HAZARDS

Yes Flash Point _____ Ignition (Autoignition) Temperature _____

No Flammable (Explosive) Range LFL (LEL) _____ % UFL (UEL) _____ %

Toxic Hazard of Combustion _____

Other _____ Possible Extinguishing Agents _____

REACTIVITY HAZARDS

Yes No Reactive with what _____ Other _____

CORROSIVITY HAZARDS

Yes No ph _____ Corrosive to what Skin Yes No Steel Yes No Other _____

RADIOACTIVITY HAZARDS

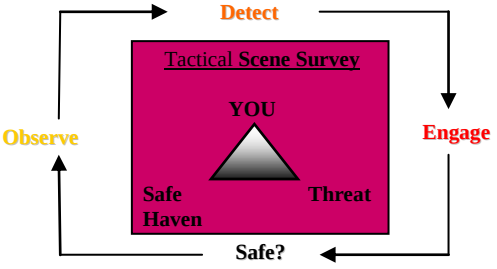
Yes No Type Radiation Emitted Alpha Particles Beta Particles Gamma Radiation
Other _____

RECOMMENDED PROTECTION

For Public (Evacuation distance _____ for _____ (quantity) _____

For Response Personnel (Level of Protection Required) _____

For Environment _____



2. Tactical Scene Survey

2.1 Maintain situational awareness.

2.2 Always understand elements of the Survival Triangle—your location in relationship to your nearest safe haven and potential threat.

2.3 Always maintain the appropriate mental awareness condition in a continuous cycle—Condition Yellow (Observe for Threat), Condition Orange (Detect Threat), Condition Red (Engage Threat)—until tactical situation rendered sufficiently safe to provide medical care.

Tactical Skills

R- React to the Threat
E- Extract Victim
S- Safe Haven
C- Command and Control
U- Urgent Care
E- Evacuate Victim
R- Reassess

3. Tactical Skills: Officer Down Immediate Action Drill

3.1. The goal of medical extraction is to get the casualty out of the hot zone to definitive medical care with minimum risk to other team members.

3.2. Body recovery should only be attempted if it can be accomplished with a minimum of risk to the rescue team. If there is any suspicion of death as a result of foul play or other unusual circumstances (e.g., suicide, homicide, neglect, or accident), the body and the area around it should be left undisturbed when feasible.

3.3. The **RESCUER** method provides a uniform framework for handling medical evacuation situations as an immediate action drill:

Hot Zone

- **R**eact to the threat: The threat must be addressed and neutralized prior to the provision of medical care.
- **E**xtract the victim: Remove the victim from harm's way in the most effective manner possible with the least risk to team members. Use the following escalating techniques as indicated: remote assessment, self-extraction, verbal commands from cover, throw rope, vehicle rescue, open area rescue and manual extraction.

Warm Zone

- **S**afe haven: Get the victim to a safe area for emergent care.
- **C**ommand and control: To effect rescue, team cohesiveness, communication, and mission priorities must be maintained in the face of unexpected injury.
- **U**rgent care: Care must be prioritized according to the XABCs.

Cold Zone

- **E**vacuate: Transport the victim(s) to the next level of care using ground, maritime, or aero-medical assets.
- **R**eassess: Since the situation is dynamic, it is important to reassess both the tactical conditions and the medical status of the patient frequently to detect early indications of problems.

Triage

Medical Skills

CLEAR the Casualty
General Impression (Sick/Not Sick?)
Tactical Primary Survey (XABCDEFG)
Vital Signs (BP, P, R)
Secondary Survey (SAMPLE History, H-T Exam)
Assessment/Plan
Reassessment

4. Triage Concepts (START Triage)

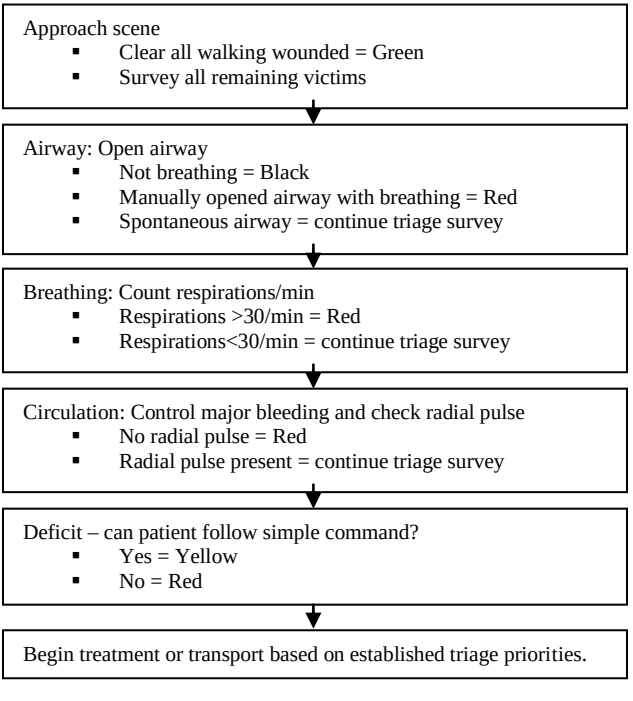
4.1. Multiple victims require an organized approach to ensure the greatest good for the greatest number of persons when medical resources are overwhelmed.

4.2. **START** stands for **S**imple **T**riage **A**nd **R**apid **T**reatment. It is predicated on the basic recognition of three normal parameters: respiration (<30 breaths per minute [bpm]), perfusion (presence of radial pulses), and mental status (ability to answer simple questions). Patients are categorized as red (immediate), yellow (delayed), green (ambulatory), or black (deceased or expectant).

4.3. The only treatment that should occur during triage is manually opening the airway and stopping life-threatening bleeding.

4.4. Priorities for treatment and priorities for evacuation may be different and should be assessed individually.

4.5. The START triage algorithm is:



5. Position of Advantage: Patient care in the tactical setting can place the provider at increased risk that mandates heightened vigilance and special techniques when providing care.

5.1. Universal precautions*:* Basic steps necessary to prevent exposure to another person's body fluids such as blood or saliva. Gloves and goggles are essential initial barriers, followed by hand washing. Universal precautions help prevent the transmission of blood-borne pathogens such as hepatitis.

5.2. **CLEAR** the Casualty

- **C**onfirm Identity—Is patient friendly, hostile or unknown?
- **L**ocate Weapons— Always disarm the patient if there is doubt about safety.
- **E**valuate Injuries—Follow steps of Tactical Primary Survey.
- **A**cquire Intelligence—Gain information on situation.
- **R**etention Skills—Protect your weapon side when providing patient care.

5.3. Use all available examination skills in any given situation.

- Inspection = look
- Auscultation = listen
- Palpation = feel

6. General Impression: Is the patient sick or not sick?

6.1. Sick: Patient appears toxic (e.g., close to succumbing to severe illness or injury) requiring rapid assessment and stabilization.

6.2. Not sick: Patient appears nontoxic (e.g., awake and interactive without obvious clinical difficulty) permitting time for detailed further assessment.

7. Tactical Primary Survey: The primary survey is designed to detect life-threatening emergencies.

7.1. The tactical primary survey is conducted on all patients. Each step (X through G) is performed in sequence. The approach at each step is to *assess* (identify any problem), *intervene* (take appropriate action to correct that problem), and *reassess* (ensure that the problem is fixed) before moving on to the next step.

7.2. In the absence of obvious exsanguinating hemorrhage, patients who can talk coherently generally have a fundamentally intact primary survey.

7.3. TEMS medics are reminded to perform only those procedures for which they have been trained and to consult with medical control for concerns.

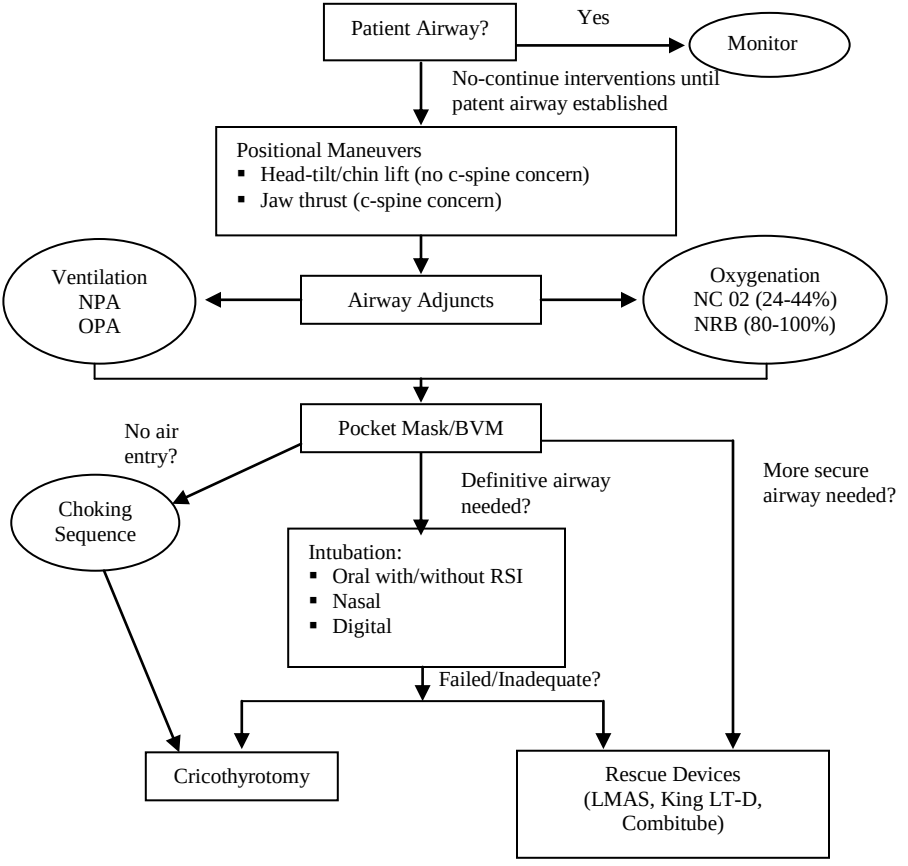
7.4. X—Exsanguinating Hemorrhage—*Purple section*

- Central focus: Exsanguinating, life-threatening bleeding
- Assessment:
  - Bright red bleeding?
  - Spurting pulsatile bleeding?
  - Large blood vessel involvement?
  - Significant ongoing blood loss?
- Critical Emergency Protocols:
  - Exsanguinating Hemorrhage
- Procedures:
  - Tourniquet application
  - Junctional Hemorrhage Control Device
  - Hemostatic agent
- Special features unique to tactical medicine:
  - The application of the tourniquet as an initial measure to immediately stop profuse bleeding differs from the conventional escalating steps used to control bleeding in traditional EMS.
  - Junctional Hemorrhage Control Device or hemostatic agents can be used to control exsanguinating hemorrhage at sites that are not amenable to tourniquet application.

7.5. A—Airway—*Light Blue section*

- Central focus: Airway patency with C-spine control
- Assessment:
  - Spontaneous?
  - Talking?
  - Tongue location?
  - Pooling secretions?
  - Gag reflex?
  - Depressed mental status?
  - Stridor?
- Critical Emergency Protocols:
  - Choking/Obstructed Airway
  - Allergy/Anaphylaxis
  - C-Spine Injury
- Procedures: There is a specific airway management sequence that is depicted in the flow diagram. TEMS medics should only perform those skills for which they have been trained.
- Special features unique to tactical medicine:
  - C-spine injury unlikely to benefit from immobilization in penetrating trauma.
  - Field clearance of C-spine may be necessary in blunt trauma.
  - Rescue devices offer a secure airway as an early option for advanced airway management, particularly when intubation is not feasible or available.
  - Digital intubation can be used to obtain a definitive airway when there are position/patient access limitations or if your position would be compromised by use of the laryngoscope light.

Airway Management Algorithm



7.6. B—Breathing—*Blue section*

- Central focus: Adequacy of respiratory effort
- Assessment:
  - Rate—average (8–12/min)?
  - Mechanics—adequate rise and fall?
  - Symmetry—Right side = left side?
  - Color—pink (not blue)
- Critical Emergency Protocols:
  - Respiratory Distress with Bronchospasm
  - Pulmonary Edema
  - Respiratory Arrest
  - Tension Pneumothorax, including from sealing open pneumothorax ("sucking chest wound") completely
  - Open Pneumothorax (Open or Sucking Chest Wound)
- Procedures:
  - Rescue breathing
  - Stethoscope auscultation/manual palpation
  - Chest Seal
  - Needle decompression
    - Limited Protocol (to appropriate patients with penetrating chest trauma only)
    - Standard Protocol (in appropriate patients with penetrating, blunt, or spontaneous mechanisms)
  - Chest tube thoracostomy
- Special features unique to tactical medicine:
  - Chest tubes are not routinely placed in a field setting.
  - Tactile assessment of chest much more useful than auscultation.

7.7. C—Circulation—*Red section*

- Central focus: Shock prevention (pump, pipes, and fluid)
- Assessment:
- Pulses present? Although not perfect, it is reasonable to consider the following in the tactical environment:
  - Radial = systolic BP (SBP) 80 mm Hg
  - Femoral = SBP 70 mm Hg
  - Carotid = SBP 60 mm Hg
  - No carotid = arrest
  - Heart rate = average 60–80 beats/min
- Critical Emergency Protocols:
  - Chest Pain (suspected cardiac origin)
  - Cardiac Arrest
  - Cardiac Arrest with Hypothermia
  - Cardiogenic Shock
  - Dehydration
  - Hypovolemic Shock

- Procedures: Shock control
  - Cardiopulmonary resuscitation (CPR)
  - Conventional bleeding control techniques
    - Direct pressure > elevation > pressure points > pressure dressing > wound packing >tourniquet
  - Hemostatic agents
  - Shock position—calm patient, warm/dry, elevate legs
  - Intravenous (IV) access
  - Intraosseous (IO) access
- Special features unique to tactical medicine:
  - CPR should never be performed in the hot zone. Overall, CPR has extremely limited utility in the tactical environment when the arrest is secondary to traumatic injury. Tactical casualties from blast and blunt trauma who are pulseless and apneic in the field are dead. Penetrating trauma victims who do not respond to immediate life-saving interventions (e.g. needle decompression, rapid IVF bolus-see below) or have injuries incompatible with life (e.g. transcranial gunshot wounds) are dead. CPR should be performed when feasible if the arrest is secondary to medical cause, electric shock, drowning, or toxic exposure.
  - Unless there is evidence for severe organ hypoperfusion, intravenous fluids (IVF) are best reserved until the cold zone. Administration of IVF is controversial in penetrating trauma without bleeding control; permissive hypotension (the practice of allowing patients with uncontrolled bleeding to remain at lower-than-normal blood pressure in order to limit ongoing blood loss) is acceptable.
  - Tourniquets should be used as initial management while in the hot zone to stop bleeding quickly and definitively. Replace tourniquets with pressure dressings in the warm/cold zone when possible.
  - Hemostatic agents should be used in conjunction with conventional bleeding control techniques.

7.8. D_i—Defibrillation/Dysrhythmia—*Pink section*

- Central focus: Advanced cardiac care (defibrillation and cardiac drugs)
- Assessment:
  - Patient under effective CPR, if indicated?
  - Rhythm on monitor?
- Critical Emergency Protocols: Dysrhythmias
  - Automatic External Defibrillation (AED) Use
  - Pulseless Arrest Algorithm
  - Bradycardia/Heart Blocks Algorithm
  - Tachycardias Algorithm
- Procedures:
  - Automatic External Defibrillator (AED)
  - Advanced Cardiac Life Support (ACLS) algorithms
- Special features unique to tactical medicine:
  - Defibrillation should only be performed in the cold zone.

7.9. D_2—Decontamination/drug (toxicology)—*Orange section*

- Central focus: Contamination from toxin (inhalation, ingestion, absorption, or injection), antidote delivery.
- Assessment:
  - Contamination from exposure?
  - Exposure to an agent with a specific antidote?
- Critical Emergency Protocols:
  - Toxins: General
  - Ingested Toxins
  - Inhaled Toxins
  - Absorbed Toxins (vesicants)
  - Injected Toxins
  - Tricyclic Antidepressant Overdose
  - Narcotic Overdose
  - Organophosphate/Carbamate (nerve agent) Poisoning
  - Cyanide Poisoning
- Procedures:
  - Field decontamination
  - Antidote administration
- Special features unique to tactical medicine:
  - Field expedient decontamination should be initiated within seconds to minutes after exposure, even if it is incomplete or imperfect.
  - Ensure provider safety from secondary contamination.
  - Nerve agent (DOUDOTE) kits should be administered early, even before airway management.

7.10. D_3—Deficit—*Yellow section*

- Central focus: Neurologic status
- Assessment:
  - Level of consciousness?
  - Pupillary response?
  - Feeling and moving all extremities?
- Critical Emergency Protocols:
  - Altered Mental Status-Not Combative
  - Altered Mental Status-Combative R/O Excited Delirium Syndrome
  - Head Trauma
  - Diabetic Emergency
  - Seizures
- Procedures:
  - AVPU scale
  - Glasgow Coma Scale (GCS)
- Special features unique to tactical medicine:
  - Use of the AVPU scale is more suited for rapid assessment in the tactical setting.
  - Maintain light discipline when assessing pupillary response.

7.11. E—Expose, Extremity, Environment—*Green section*

- Central focus: Hidden injuries/Medic Alert tags, extremities neurovascularly intact without deformity (NVI w/o D), environmental threats

- Assessment:
  - Medic Alert tags present?
  - Extremities NVI w/o Deformity?
  - Structural deformity (alignment, open injury)?
  - Vascular integrity (pulse, capillary refill)?
  - Neurological integrity (sensory, motor)?
  - What are the environmental conditions (hot, cold)?
- Critical Emergency Protocols:
  - Amputations
  - Crush Syndrome
  - Snakebites
  - Cold Injury (Hypothermia)
  - Heat Injury (Heat Exhaustion/Heat Stroke)
  - Drowning and Near Drowning
  - Decompression Illness
  - Marine Envenomation
  - Burns
  - Altitude Illness
  - Insect Bites
- Procedures:
  - Splinting
  - Cooling techniques
  - Warming techniques
  - Temperature measurement
- Special features unique to tactical medicine:
  - Full exposure may not be appropriate under certain environmental conditions until patient can be extracted (e.g., removing body armor and helmet may expose patient to greater risk).
  - Warming and cooling techniques must be adapted for extended field operations.

7.12. F—Fetus—*Brown section*

- Central focus: Pregnancy
- Assessment:
  - Female patient obviously pregnant?
  - Delivery imminent?
- Critical Emergency Protocols:
  - Emergency Childbirth
  - Neonatal Resuscitation
- Procedures:
  - Left-sided transport position
  - Emergency delivery techniques
- Special notes: These skills are not statistically likely to be needed in the tactical setting.

7.13. G—Germs—*Tan section*

- Central focus: Wound care
- Assessment:
  - All wounds clean and dressed?
- Critical Emergency Protocols:
  - Basic Wound Care

- Procedures:
  - Basic wound care (RATS)
    - Rabies immunization/prophylaxis
    - Antibiotics
    - Tetanus
    - Soap (clean) and seal (dressing)
- Special features unique to tactical medicine:
  - These steps are left for the cold zone on tactical operations.
  - Most wounds are left open/packed in the tactical setting to limit the risk of systemic infection.

8. Vital Signs: Vital signs may be viewed as quantitative measurements of many of the parameters assessed in the primary survey. A first set of complete vital signs, called baseline vital signs, should be obtained on every patient regardless of the patient's condition.

- Pulse rate: Normal adult pulse rate is 60–80 beats per minute (bpm).
- Blood pressure: Normal adult blood pressure is 120/80 mm Hg.
- Temperature: Normal adult temperature is 98.6°F (36.0°C), but may be estimated in the field by assessing warmth of the patient's skin with the back of the provider's hand.

9. Secondary Survey: The secondary survey is designed to detect all potential clinical problems in the patient.

- History: The history may be taken using the SAMPLE method.
  - S = symptoms
    - O = onset (sudden or gradual?)
    - P = provocation/palliation (what makes symptoms worse or better?)
    - Q = quality (sharp or dull?)
    - R = radiation (does the symptom spread?)
    - S = severity (rate on 1–10 scale)
    - T = time course (lasting how long? Intermittent or steady pattern?)
  - A = Allergies
  - M = Medications
  - P = Past medical/surgical history
  - L = Last meal
  - E = Events leading up to the current problem

- Physical examination: The physical examination is conducted in head-to-toe fashion. The main goal is the detection of occult injuries/illness. In trauma patients, assess for DCAPBTLS (deformities, contusions, abrasions, punctures, burns, tenderness, lacerations, and swelling).

    - General: Alert, oriented male or female in no acute distress?
    - Vital signs: Blood pressure, pulse, respirations, temperature (if able)?
    - HEENT: Head—Normocephalic, atraumatic? Eyes—Pupils equal, round, and reactive to light and accommodation? Extraocular muscles intact? Conjunctivae and fundi clear? Ears—Tympanic membranes intact? External auditory canals clear? Nose—Nares clear? Sinuses nontender? Throat—Oropharynx clear with patent airway?
    - Neck: Supple with no C-spine tenderness or deformity (in trauma), evidence of meningismus (with fever), masses, or tracheal deviation?
    - Heart: Regular rate and rhythm without murmurs, rubs, or gallops?
    - Lungs: Clear to auscultation bilaterally without wheezes, rales, or rhonchi?
    - Abdomen: Soft, nontender, nondistended with bowel sounds present?
    - Extremities: Neurovascularly intact without deformity?
    - Back: No midline tenderness along the entire spinal axis? No costovertebral angle tenderness?
    - Neurological:
        - Orientation—Alert and oriented x 3?
        - Cranial nerves—Cranial nerves (CN) II–XII intact without deficit?
            - CN II—visual acuity;
            - CN III/IV/VI—extraocular movements;
            - CN V—facial sensation and jaw clenching;
            - CN VII—symmetric smile;
            - CN VIII—hearing acuity;
            - CN IX/X—gag reflex;
            - CN XI—shoulder shrug;
            - CNXII—tongue protrusion.
    - Sensory function—Light touch intact?
    - Motor function—Moving extremities well x 4 with 5/5 strength?
    - Reflexes—Reflexes 2+ bilaterally and symmetrically at biceps, triceps, patellar, and Achilles sites?
    - Gait—Stable and balanced?
    - Cerebellum—Finger-to-nose and rapid alternating movements intact?
    - Skin: Warm and dry?

- Recovery position: An unconscious patient should be placed in the recovery position if there is no concern for shock or traumatic injury.

10. Assessment: Develop a differential diagnosis of likely syndromes or injury patterns that match the patient's clinical picture. Determine which entity is likely the cause of the patient's condition and justify your choice based on available evidence. Be sure to consider worst case scenario diagnoses and explain your reasoning if you do not feel that one of these conditions is present.

11. Plan: Develop a plan of care that focuses on the treatment needed or additional testing required to clarify the diagnosis. In providing instructions to patients, be sure to tell them:

- What you want them to do to care for their condition (e.g., change bandages twice daily);
- What you want them to return for (e.g., signs of infection);
- Where you want them to go for follow-up care (e.g., "see your doctor in 5 days for suture removal").

12. Reassessment: A patient's condition may either improve or deteriorate over time. It is important to repeat the patient's primary survey and vital signs to determine if the patient needs more (or less) medical care. The tactical primary survey should be repeated in serial fashion with vital signs obtained every 5–15 minutes depending on the patient's condition.

Definitive Care

13. Disposition Guidelines

13.1. In general, the TEMS medic shall make a request as soon as feasible for EMS support when a patient exhibits signs or symptoms that are most effectively managed by more advanced medical skills or by transport to a definitive care facility.

13.2. The OIC should be advised of all outside resources called into the operation.

13.3. In some circumstances, community EMS resources are not available or not appropriate, in which case the TEMS medic may consider continued management or arrange transportation by the best means available.

13.4. In addition, the following specific guidelines should be considered for each category of patient.

13.4.1. Civilians not in custody.

- The TEMS medic shall request EMS response as soon as practical, once it has been determined that further patient care is required. Personnel may provide humanitarian care while waiting for local EMS resources to arrive.
- Civilians shall be transported by ambulance for further treatment as required, provided the civilians do not pose a risk to the crew of the transporting ambulance. Agency vehicles may be used to transport civilians for further treatment if the TEMS medic deems this form of transportation is necessary for the benefit of the patient or others.

13.4.2. Persons in custody.

- The TEMS medic may request EMS response as soon as practical for all serious (or possibly serious) injuries or illnesses once it has been determined that patient care needs exceed TEMS medic resources or training, or that the patient will require ambulance transportation.

- All persons shall be transported by the method that best deals with their medical condition, unless the patient presents a risk to the transporting crew or vehicle. Patients who present a danger to the crew of the transporting vehicle may be transported in the safest manner for all concerned.
- The TEMS medic may elect not to request an EMS response for persons who may more appropriately and safely be transported for further care by law enforcement vehicles.
- In determining what transportation is appropriate, the TEMS medic shall balance the medical needs of the patient with the safety of the transporting crew.
- Persons in custody shall receive appropriate care for all injuries and illnesses noted. They shall generally be transported by ambulance for further care unless it is clear such transport is inappropriate due to the minor nature of injuries, the danger associated with such transport, or the delay in access to an ambulance.

13.4.3. LEA Personnel

- The TEMS medic shall request EMS response as soon as practical for all serious, or possibly serious injuries, conditions, or illnesses once it has been determined that patient care needs exceed TEMS medic resources or training, or the patient will require ambulance transportation.
- The TEMS medic may elect not to request an EMS response for personnel who may more appropriately be transported in a law enforcement vehicle for care.
- Caution must be used to ensure that adequate care can be provided en route, if required. Certain injuries may respond better to gentle handling of the patient, rather than rapid transportation to a medical facility.

13.5. The TEMS medic may request helicopter evacuation if the medic has knowledge that the area is served by an appropriate air medical evacuation program and,

5.5.1 The patient has a life-, limb-, or sight-threatening injury or illness and,

5.5.2. Ground transportation would exceed the estimated time of arrival of the helicopter to the appropriate hospital considering flight and patient transfer times and,

5.5.3. The patient's condition would not be adversely affected by flight.

14. Transfer of Care Guidelines

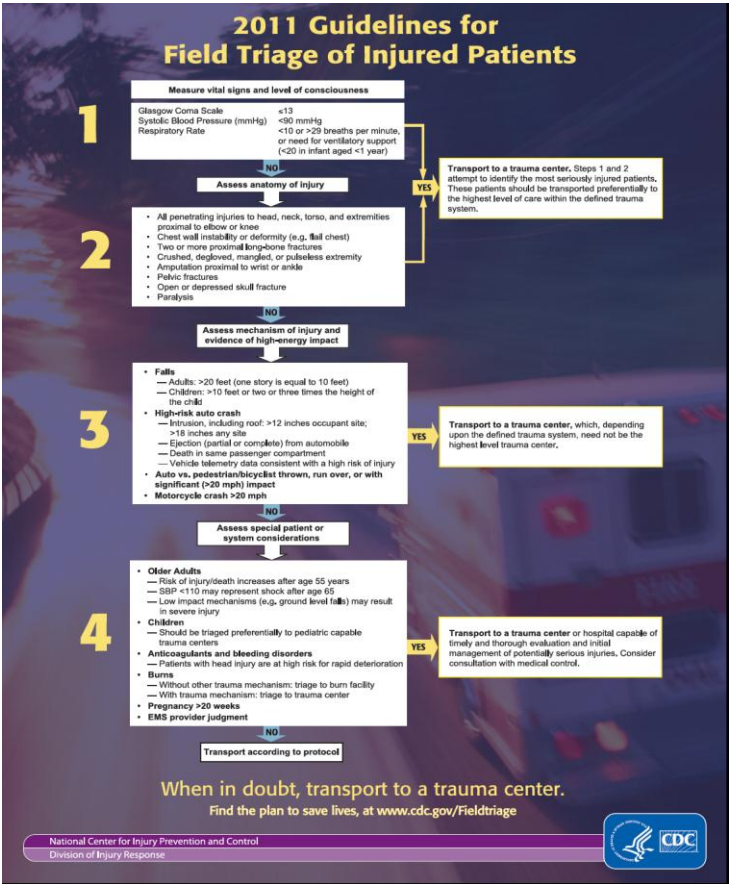
14.1. The TEMS medic is responsible for providing on-scene immediate care and transferring care as appropriate to a responding EMS unit or medical provider at a medical facility.

14.2. In the event on-scene care only is required, no transfer of care will be required.

14.3. Whenever feasible, the TEMS medic shall transfer patient care to a person who can provide an equal or higher level of care as that which has been initiated or may be reasonably anticipated by the TEMS medic to be necessary. When transfer to an equal level of care is not feasible given the circumstances, the TEMS medic will work with available resources to ensure the safest transfer possible for the patient under the circumstances.

14.4. The TEMS medic shall signify the patient transfer by making a verbal or written report to the person assuming patient care. The verbal or written report shall include: Age, Sex, Vital Signs, SAMPLE History, Physical Examination findings, Treatment, and the Patient's response.

15. Patient Transport


2011 Guidelines for
Field Triage of Injured Patients
1
Measure vital signs and level of consciousness
Glasgow Coma Scale ≤13
Systolic Blood Pressure (mmHg) <90 mmHg
Respiratory Rate <10 or >29 breaths per minute, or need for ventilatory support (<20 in infant aged <1 year)
NO
YES
Transport to a trauma center. Steps 1 and 2 attempt to identify the most seriously injured patients. These patients should be transported preferentially to the highest level of care within the defined trauma system.
Assess anatomy of injury
2
All penetrating injuries to head, neck, torso, and extremities proximal to elbow or knee
Chest wall instability or deformity (e.g, flail chest)
Two or more proximal long-bone fractures
Crushed, degloved, mangled, or pulseless extremity
Amputation proximal to wrist or ankle
Pelvic fractures
Open or depressed skull fracture
Paralysis
NO
Assess mechanism of injury and evidence of high-energy impact
3
Falls
— Adults: >20 feet (one story is equal to 10 feet)
— Children: >10 feet or two or three times the height of the child
High-risk auto crash
— Intrusion, including roof: >12 inches occupant site; >18 inches any site
— Ejection (partial or complete) from automobile
— Death in same passenger compartment
— Vehicle telemetry data consistent with a high risk of injury
Auto vs. pedestrian/bicyclist thrown, run over, or with significant (>20 mph) impact
Motorcycle crash >20 mph
YES
Transport to a trauma center, which, depending upon the defined trauma system, need not be the highest level trauma center.
NO
Assess special patient or system considerations
4
Older Adults
— Risk of injury/death increases after age 55 years
— SBP <110 may represent shock after age 65
— Low impact mechanisms (e.g, ground level falls) may result in severe injury
Children
— Should be triaged preferentially to pediatric capable trauma centers
Anticoagulants and bleeding disorders
— Patients with head injury are at high risk for rapid deterioration
Burns
— Without other trauma mechanism: triage to burn facility
— With trauma mechanism: triage to trauma center
Pregnancy >20 weeks
EMS provider judgment
YES
Transport to a trauma center or hospital capable of timely and thorough evaluation and initial management of potentially serious injuries. Consider consultation with medical control.
NO
Transport according to protocol
When in doubt, transport to a trauma center.
Find the plan to save lives, at www.cdc.gov/Fieldtriage
National Center for Injury Prevention and Control
Division of Injury Response
CDC

Part 2: CONTOMS TEMS Protocols

X = Exsanguinating Hemorrhage

Exsanguinating Hemorrhage

Clinical Condition

Extreme life-threatening bleeding

Signs and Symptoms

1. Extensive arterial or venous blood loss and pooling
2. Spurting pulsatile blood from an open wound

Treatment

Extremity Bleeding Site

1. While under tactical conditions, apply a tourniquet as proximal as possible on the injured limb to control all major bleeding. Apply a second tourniquet adjacent to and below the first if the initial tourniquet does not control the bleeding. In the hot zone, do not remove clothing prior to applying the tourniquet. Verify tourniquet is effective by confirming that distal pulses are absent.
2. As soon as feasible, mark a letter "T" on the patient's forehead along with the time that the tourniquet was applied.
3. Release the tourniquet only when tactical conditions permit transition to a pressure dressing or hemostatic dressing.
4. Once a tourniquet has been applied, it should *not* be removed in the field if:
    - The patient is in shock;
    - There is an amputation;
    - Bleeding is likely to be uncontrollable by other means;
    - The tourniquet has been in place for 6 or more hours;
    - There is inability for continued monitoring of the patient;
    - It is expected that the patient will receive definitive care in less than 2 hours.
5. Do *not* release and retighten tourniquet multiple times to check on bleeding.
6. *Never* cover over the tourniquet.

Junctional Region Bleeding Site

1. Apply a junctional hemorrhage control device, if available.
2. Use packing and pressure dressings with hemostatic agents to control exsanguinating bleeding in absence of junctional control device.

Non-Extremity Bleeding Site

1. Apply hemostatic dressing to the site of bleeding followed by 3 minutes of direct pressure.
2. Apply standard hemorrhage control techniques, as appropriate.
3. Closely monitor the site.

A = Airway

Obstructed Airway/Choking

Clinical Condition

Life-threatening occlusion of the upper airway leading to unconsciousness and anoxic death

Signs and Symptoms

1. Gagging or choking
2. Gasping/coughing
3. Unable to speak
4. Universal Choking Sign (hands clutched around throat)
5. Inability to ventilate patient during Rescue Breathing/CPR
6. Common mechanisms/causes
    a. Foreign Body Choking (e.g. food, vomitus, tongue)
    b. Airway/neck trauma (e.g. blood, injury, edema)

Treatment

Foreign Body Choking

1. Conscious Patient
    a. If person is choking on an object but can effectively speak or cough, allow them to continue but be prepared to intervene.
    b. If person cannot cough or speak effectively, ask if they need assistance then provide Heimlich Maneuver (vertical abdominal thrust) as necessary in an attempt to dislodge the object.
2. Unconscious Patient
    a. If a witnessed choking person becomes unconscious or individual found unresponsive has obstructed air entry upon opening airway during CPR, consider rapid check of oropharynx with head/neck repositioning, manually removal/suctioning of any debris (e.g. vomit) and finger sweep (if the object is visible and/or dislodged), then promptly perform CPR.
    b. Consider needle or open cricothyrotomy if skilled in the procedure, equipment is available, and air entry is still not possible due to airway obstruction despite other efforts.
3. Transfer to definitive care as soon as possible.

Airway/Neck Trauma

1. Manage the airway to the extent necessary to ensure patency based on extent of patient's airway compromise and level of consciousness.
    a. In blunt trauma: Be wary of the potential for expanding neck hematoma causing loss of airway patency. Protect c-spine given potential for associated spinal injury.
    b. In penetrating trauma: Be wary of potential for expanding neck hematoma and worsening airway occlusion by debris or blood. Allow patient to assume position of comfort if required to keep airway open. Suction as indicated to keep airway clear.
2. Consider cricothyrotomy if skilled in the procedure, equipment is available and air entry is not possible due to airway obstruction despite other efforts.
3. Transfer to definitive care as soon as possible.

Allergy and Anaphylaxis

Clinical Condition

Spectrum of immune system reactions to environmental agents (such as pollen or stings), foods (such as peanuts) or medications (such as penicillin) ranging from mild reactions (allergy) to severe life-threatening reactions (anaphylaxis)

Signs and Symptoms

1. Hives and Itching
2. Sensation of airway closure
3. Dsypnea or audible wheezing
4. Hypotension (in anaphylaxis)

Treatment

1. Assess the degree of allergic reaction.
    - Mild to moderate—generalized hives and wheezing.
    - Severe—life-threatening airway closure (e.g., examine for swollen tongue or uvula), respiratory compromise or hypotension (BP < 80 mm Hg).
2. Administer EpiPen (epinephrine auto-injector containing 0.3 mg of 1:1000 epinephrine) according to the instructions for severe reactions or history of anaphylactic reactions to the same exposure.
3. Oxygen as needed, via NRB.
4. Monitor pulse oximetry, if available.
5. Treat for shock, if present.
6. Request EMS support, if available.
7. Establish an advanced airway as needed.
8. Place on cardiac monitor, if available.
9. Establish IV access
10. If shock is present, perform fluid challenge.
11. For severe reaction in adult:
    - Epinephrine 0.3–0.5 mg (0.3-0.5 mL of 1:1000) IM Q 5-10 minutes prn.
    - Diphenhydramine 50 mg IV, IM, or PO.
    - Albuterol 2.5 mg by nebulization (use either 3 mL premix or 0.5 mL of 0.5% solution mixed in 3 mL of normal saline) or two puffs via metered-dose inhaler with spacer, 1–2 minutes apart. May repeat until patient clinically improves or becomes tremulous.
    - Steroids should be given as soon as possible. The optimal regimen is methylprednisolone 125 mg IVP, but oral prednisone 80 mg PO may be substituted if more immediately available.

C-Spine Injury

Clinical Condition

Traumatic injury to the cervical spine leading to potential for spinal cord injury and quadraplegia

Signs and Symptoms

1. Neck pain, especially in midline, in setting of traumatic injury
2. High index of suspicion given mechanism of injury
3. Neurologic deficits in setting of trauma

Treatment

Standard Approach (Cold Zone)

1. Maintain airway and C-spine control.
2. Oxygen NRB, or assist ventilation, as needed.
3. Completely immobilize the patient with a full body immobilization device.
4. Record and periodically reassess the patient's GCS and neurological status.
5. Advanced airway, if required.
6. Establish IV access.

Tactical Approach (Warm Zone)

1. In general, C-spine immobilization should not be attempted under tactical conditions unless the situation permits caregivers to accomplish it safely.
2. Penetrating trauma: The benefit of C-spine immobilization following penetrating trauma (even to the neck) is extremely limited. Immobilization should not be considered for victims of penetrating trauma unless the patient has focal neurological deficits after the injury, and immobilization can be safely accomplished.
3. Blunt trauma: Generally, blunt trauma victims with potential for systemic injury should be immobilized as soon as tactically feasible. Situations may arise, however, in which C-spine clearance has significant impact on the logistics of patient care in the tactical environment. In such situations, a C-spine can be clinically cleared in blunt trauma if ***all*** of the following conditions can be met:

- Patient is alert and oriented x 3 and cooperative;
- Patient has no neurological deficits;
- Patient has no distracting injuries;
- Patient has no drugs or alcohol onboard;
- Patient has no midline C-spine tenderness or deformity;
- Patient has no pain when moving his neck on his own through a full range of motion;
- Patient has not suffered high-risk mechanism for neck injury.

B = Breathing

Respiratory Distress with Bronchospasm

Clinical Condition

These protocols apply to persons with respiratory disorders such as chronic obstructive pulmonary disease, emphysema, chronic bronchitis, and asthma. *Caution:* Respiratory distress may be due to multiple other causes including airway obstruction, pulmonary edema, anaphylaxis, and pneumothorax, for which other treatment may be indicated.

Signs and Symptoms

1. Labored breathing
2. Patient indicates shortness of breath
3. Extensive use of accessory muscles
4. Audible wheezing
5. Rapid respiratory rate

Treatment

1. Oxygen as needed, via NRB.
2. If needed, assist ventilation with PPV using 100% oxygen.
3. Monitor pulse oximetry, if available.
4. Request EMS support, if available.
5. Allow patient to assume a position of comfort to facilitate breathing (e.g. tripod position).
6. Assist patient with self-administered doses of their metered-dose inhaler per the patient's written prescription, if available.
7. Albuterol 2.5 mg by nebulization (use either 3 mL premix or 0.5 mL of 0.5% solution mixed in 3 mL of normal saline) or 2 puffs, 1–2 minutes apart, via metered-dose inhaler with spacer. May repeat until patient clinically improves or becomes tremulous.
8. If in extremis: Administer Epi-Pen (Epinephrine auto-injector 0.3 mg 1:1000 IM).
9. Place on cardiac monitor, if available.
10. Advanced airway if necessary.
11. Establish IV access.

Pulmonary Edema

Clinical Condition

Abnormal state where fluid fills the lungs preventing adequate oxygen exchange

Signs and Symptoms

1. Labored breathing
2. Patient indicates shortness of breath
3. Extensive use of accessory muscles
4. Audible wheezing or gurgling
5. Rapid respiratory rate

Treatment

1. Oxygen via NRB, or assist ventilation (PPV) if needed.
2. Monitor pulse oximetry, if available.
3. Place in position of comfort
4. Request EMS support, if available.
5. Advanced airway, if indicated.
6. Place on cardiac monitor, if available.
7. Establish IV access.
8. For suspected non-cardiogenic pulmonary edema, consider Albuterol: 2.5 mg by nebulization (use either 3 mL premix or 0.5 mL of 0.5% solution mixed in 3 mL of normal saline) or 2 puffs, 1–2 minutes apart, via metered-dose inhaler with spacer. May repeat until patient clinically improves or becomes tremulous.
9. For suspected cardiogenic pulmonary edema (CHF), use medications indicated below as appropriate. *However, if the patient is also hypotensive, treat using the* Cardiogenic Shock Protocol *(see page Red 56).*

- Nitroglycerin 0.4 mg, two tabs or sprays, SL. May repeat one tab or spray every 5 minutes if systolic BP >100 mm Hg.
- Morphine 2 mg IVP every 15 minutes if systolic BP >100 mm Hg, and no change in mental status.
- Furosemide (Lasix) 40 mg IV if patient is not on a chronic dosing schedule. May increase to 80 mg IV for patients on chronic Furosemide or renal failure patients.

Respiratory Arrest

Clinical Condition

Life-threatening situation where patient has either stopped breathing or is no longer breathing effectively

Signs and Symptoms

1. Absence of visible breathing but still detectable pulse
2. Gasping, agonal respirations
3. Diminished level of consciousness

Treatment

1. Follow current AHA respiratory arrest procedure utilizing 100% oxygen with PPV. Use the AHA foreign body obstructed airway procedure as necessary.
2. Request EMS support, if available.
3. Advanced airway, if indicated.
4. Pulse oximetry, if available.
5. Place on cardiac monitor, if available.
6. Establish IV access.
7. After ensuring proper tube placement, consider lorazepam 2–4 mg IV for patients who become combative after intubation.

Tension Pneumothorax

Clinical Condition

Collapse of lung permitting air under pressure to build inside the chest cavity that can lead to shock and eventual cardiac arrest

Signs and Symptoms

1. Absent breath sounds on one side of chest
2. Acute air hunger and anxiety
3. Penetrating injury to chest (but may be blunt injury or rarely atraumatic)
4. Hypotension
5. Jugular venous distension
6. Tachycardia

Treatment

1. Oxygen via NRB.
2. Assist ventilation (PPV) if needed.
3. Monitor pulse oximetry, if available.
4. Request EMS support, if available.
5. Temporarily unseal ("burp) any occlusive dressing/chest seal that has been applied.
5. Perform needle chest decompression if the following are present:
    - Severe respiratory compromise
    - Absent or severely diminished breath sounds on one side of the chest
    - Mechanism of injury involving the chest
        - Limited Decompression Protocol: penetrating injury only
        - Standard Decompression Protocol: penetrating or blunt injury
    - Tracheal deviation (late sign)
6. Consider bilateral needle decompression if no improvement.
7. Advanced airway, if necessary.
8. Establish IV access.
9. Place on cardiac monitor, if available.

Open Pneumothorax (Open or Sucking Chest Wound)

Clinical Condition

Traumatic defect of the chest wall resulting in injury, impaired breathing or air-entry through the chest ("sucking chest wound")

Signs and Symptoms

1. Penetrating injury to chest wall
2. Respiratory difficulty
3. Air bubbling at wound site ("sucking chest wound")

Treatment

1. Apply and secure an occlusive dressing/chest seal to all major open chest wounds.
2. Be certain to look for multiple injuries/exit injuries.
3. Provide oxygen via NRB as indicated and available.
4. Be prepared to manage the evolution of tension pneumothorax in all casualties who have had occlusive dressings applied (*see* Tension Pneumothorax Protocol *on page Blue 50*).
5. Transport to definitive care as soon as possible.

C = Circulation

Chest Pain (Suspected Cardiac Origin)

Clinical Condition

Progressive injury resulting from acute occlusion of coronary arteries supplying blood to the heart

Signs and Symptoms

1. Crushing midsternal chest discomfort like someone "sitting on chest"
2. Discomfort radiating to left neck or jaw
3. Nausea/vomiting
4. Diaphoresis (sweating)
5. Shortness of breath
6. Feeling of impending doom

Note: Women and diabetic patients may present with less "typical" symptoms.

Treatment

1. Oxygen via NRB or assist ventilation (PPV) if needed.
2. Monitor pulse oximetry, if available.
3. Treat for shock, if indicated.
4. Request EMS support, if available.
5. Assist in the administration of the patient's own nitroglycerin exactly as written on the prescription container.
6. Chewable aspirin 325 mg PO (standard adult tablet) if not contraindicated by allergy, bleeding/anticoagulant history, or ulcer disease.
7. Place on cardiac monitor, if available.
8. Establish IV access.
9. Nitroglycerin 0.4 mg or 1 spray SL. May repeat at 5-minute intervals if BP >100 mm Hg for a total of three doses.
10. Morphine 2 mg IV every 15 minutes as needed for pain if BP >100 mm Hg, and no change in mental status.
11. Treat any underlying dysrhythmia per appropriate protocol.

Cardiac Arrest

Clinical Condition

Clinical death resulting from life-threatening cardiopulmonary collapse

Signs and Symptoms

1. Pulselessness
2. Apnea or agonal gasps
3. Unresponsiveness

Treatment

1. Oxygen and PPV with BVM.
2. Follow current AHA CPR guidelines.
3. Request EMS support, if available.
4. If AED available, go to AED Use Protocol *(see page Pink 59)*.
5. Advanced airway.
6. Establish IV.
7. Follow Pulseless Arrest Algorithm Protocol *(see page Pink 60)*.

Cardiac Arrest with Hypothermia

Clinical Condition

Patients are in a "metabolic icebox" of reduced physiologic function, which allows some temporary protection from the effects of cardio respiratory arrest. As a result, there is the prolonged possibility for normal recovery. In the context of a cold environmental exposure or recent cold water immersion/submersion, patients are not dead unless they are "warm and dead" after unsuccessful resuscitation efforts.

Signs and Symptoms

1. Pulselessness
2. Apnea or agonal gasps
3. Unresponsiveness
4. Cold core body temperature or evident cold to touch (as a result of cold environmental exposure as opposed to cooling from prolonged time of death)

Treatment

1. Assessment: Since a severely hypothermic heart is irritable and ventricular fibrillation can be induced by physical stimuli, determine that functional cardiac activity is definitely absent before initiating chest compressions. Functional cardiac activity is considered to be absent only if:

- VF or asystole is confirmed by cardiac monitor or AED.
- The patient loses a pulse that was previously palpable by EMS personnel during the rescue; and
- No clinical signs of life are present. These include:
  - Any spontaneous respiration;
  - Any response to positive pressure ventilation;
  - Any spontaneous movement or sound;
  - Any organized rhythm on monitor; and/or
  - Audible heart sounds on auscultation.

Note: Field resuscitation procedures should not significantly delay evacuation to controlled rewarming. Resuscitation procedures can be effective in severe hypothermia, even if used intermittently as evacuation conditions permit.

2. Begin CPR.
3. Support ventilation with heated, humidified air or oxygen.
4. In accordance with AHA recommendations, attempts at defibrillating VF or VT should be limited to one shock until core temperature is 30°C (86° F) or greater.
5. Perform endotracheal intubation and establish IV access.
6. Rewarm according to Cold Injury Protocol (*see page Green 81*).
7. Follow protocol for specific dysrhythmia, but withhold all anti-dysrhythmic medications unless the core temperature is above 30°C (86°F).
8. As patient re-warms above 30°C (86° F), give IV medications as indicated, but space at longer-than-standard intervals. Repeat defibrillation for VF/VT as core temperature rises.
9. Request EMS support, if available.

Cardiogenic Shock

Clinical Condition

State of critical hypoperfusion (shock) resulting from pump failure of heart

Signs and Symptoms

1. Hypotension
2. Potential wheezing or gurgling in lungs
3. Potential decreased level of consciousness
4. Recent known heart attack or extensive cardiac medical history

Treatment

1. Oxygen as needed, via NRB.
2. Monitor pulse oximetry, if available.
3. Request EMS support, if available.
4. Place on cardiac monitor, if available.
5. Establish IV access.
6. Treat symptoms such as chest pain and difficulty breathing per appropriate protocol, but carefully consider the impact of treatment on the patient's blood pressure.
7. Dopamine (800 mg in 500 mL, or premix). Titrate to maintain BP >100 mm Hg (2–20 μg/kg/min).
8. Contact medical control for consideration of fluid challenge.

Dehydration

Clinical Condition

State of impaired tissue fluid volume status caused by an imbalance between excessive fluid loss and/or inadequate fluid intake

Signs and Symptoms

1. Headache
2. Irritability
3. Nausea/vomiting
4. Thirst
5. Delayed capillary refill
6. Poor skin turgor

Treatment

Note: This protocol is for the conscious, severely volume-depleted, adult patient.

1. Place in position of comfort.
2. Oral rehydration as tolerated using one-half strength electrolyte solution if available.
3. Establish IV access. No more than three attempts should be undertaken. If unsuccessful after three attempts, no further efforts at obtaining IV access should be undertaken. IV access should not delay transport to definitive care.
4. Perform fluid challenge, NS 1–2 L IV.
5. Place on cardiac monitor, if available.
6. Institution of IV therapy automatically warrants subsequent medical evaluation at a designated treatment facility in all cases unless otherwise directed by medical control.
7. Consider the use of ondansetron (Zofran) 8 mg PO or 4 mg IV/IM (preferred) OR promethazine (Phenergan) 12.5 mg PO/IM/IV for treating significant nausea/vomiting.

Hypovolemic Shock

Clinical Condition

A state of hypoperfusion (shock) caused by severe dehydration or excessive blood loss

Signs and Symptoms

1. Hypotension
2. Poor capillary refill
3. Decreased mental status
4. Excessive blood loss or internal bleeding
5. Tachycardia
6. Shallow rapid breathing

Treatment

1. Control any bleeding as appropriate.
2. Oxygen via NRB.
3. Monitor pulse oximetry, if available.
4. Elevate legs.
5. Immobilize, as indicated.
6. Advanced airway, if indicated.
7. Place on cardiac monitor, if available.
8. Establish IV access. No more than three attempts should be undertaken. If unsuccessful after three attempts, no further efforts at obtaining IV access should be undertaken. Consider IO access. Attempts at IV/IO access should not delay transport to definitive care.
9. Fluid selection guidelines: It is recommended that providers carry 500 mL crystalloid (0.9% normal saline) and 500 mL colloid (Hextend). The crystalloid will be used for all acute resuscitations (medical and trauma) with expected transport times <4 hours, and for medical resuscitations with prolonged transport times >4 hours. Colloid will be used as the initial fluid choice for acute trauma resuscitation with expected prolonged transport times >4 hours.
10. Perform fluid resuscitation as follows:
    - Controlled peripheral hemorrhage without shock: Saline lock only; PO fluids permissible if transport time >4 hours.
    - Controlled peripheral hemorrhage with shock: 500-mL fluid boluses IV/IO every 15 minutes until restoration of normal vital signs.
    - Uncontrolled central hemorrhage with or without shock: 500-mL fluid boluses IV/IO every 15 minutes as needed to maintain mentation and/or radial pulse.
    - Medical patient with severe dehydration: Treat aggressively according to Dehydration Protocol (*see page Red 57*), including consideration of IO placement if IV access cannot be obtained. Do NOT use colloids for these patients.
    - Providers should not administer > 1000 mL of colloid fluid total for any patient.
    - Providers may use crystalloid fluid if necessary for continued resuscitation after colloid administration.
    -
11. Institution of IV/IO therapy automatically warrants subsequent medical evaluation at a designated treatment facility in all cases unless otherwise directed by medical control.

D_1 = Defibrillation/Dysrhythmia

Automatic External Defibrillator (AED) Use

Clinical Condition

AEDs are used to defibrillate patients in cardiac arrest.

Signs and Symptoms

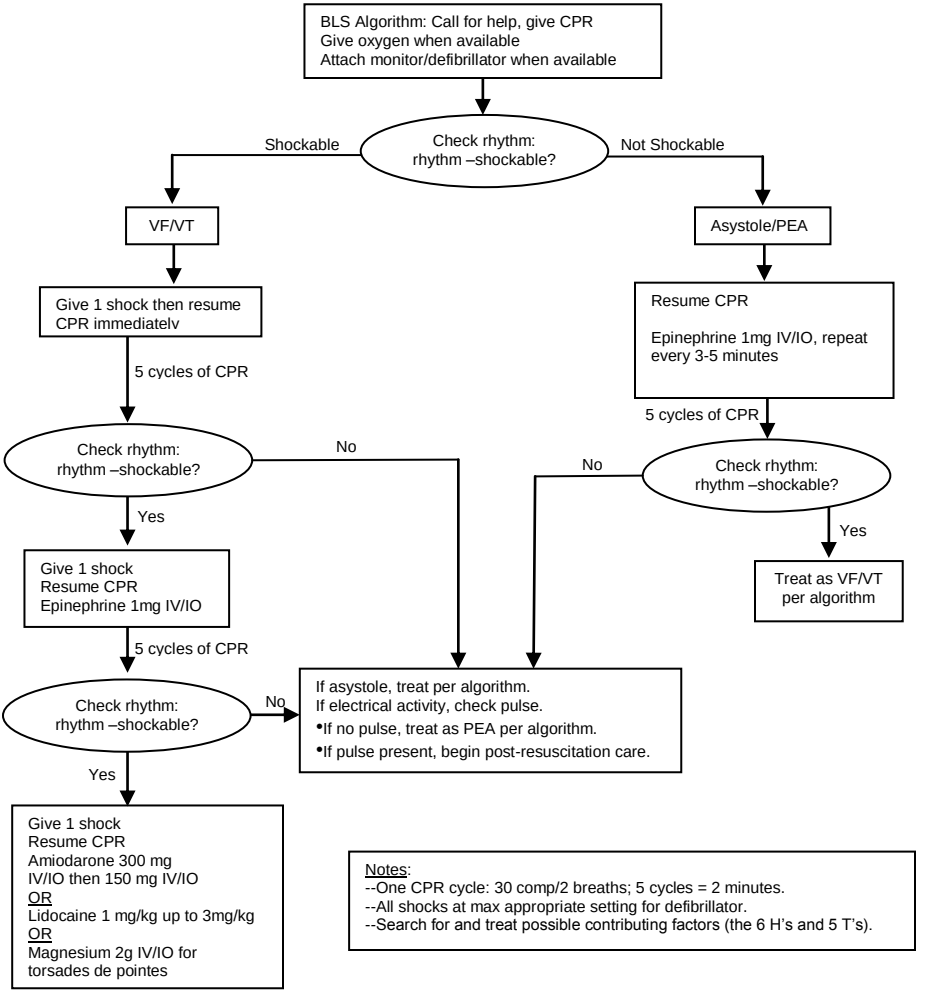
Patient is in cardiac arrest (unresponsive, apneic, and pulseless).

Treatment

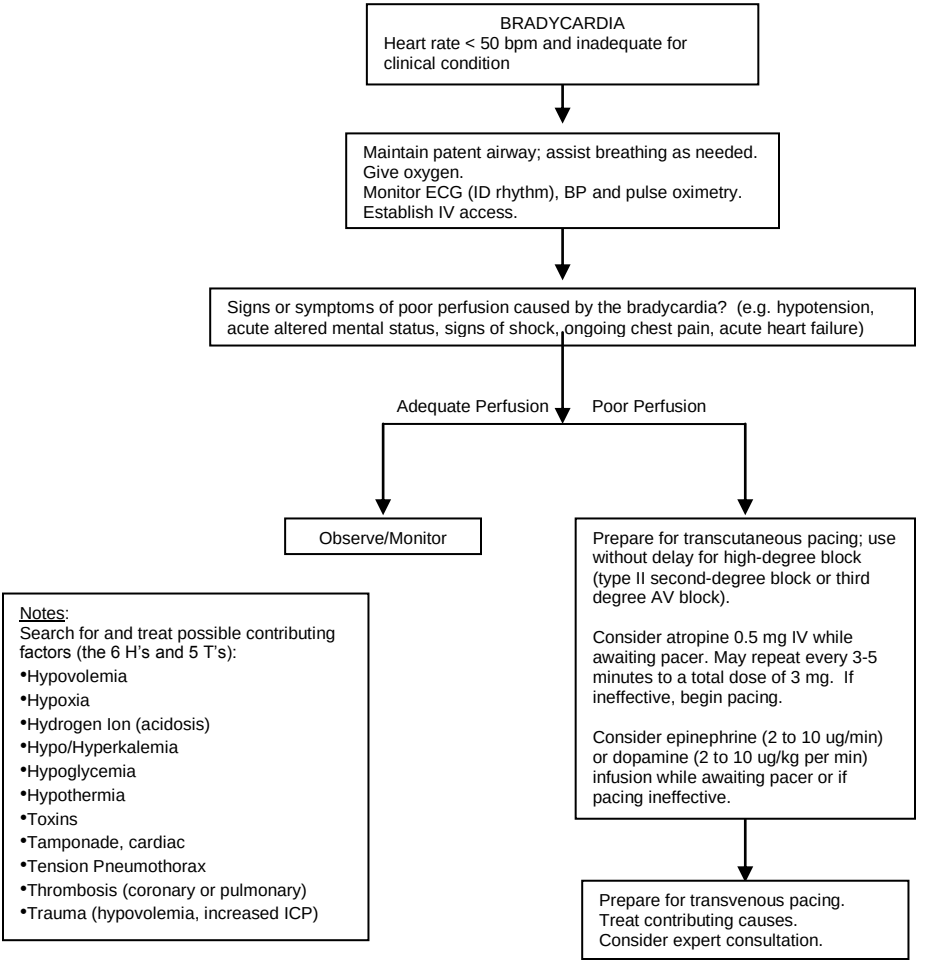
1. Request EMS support, if available.
2. Move patient to floor and bare chest.
3. Turn on the AED and follow prompts.
4. Apply AED electrodes.
5. Provide shock if indicated.
6. After completion of AED protocol, re-assess patient. Continue CPR as indicated.
7. Establish advanced airway and IV as appropriate.
8. Retain AED data card and any other relevant records. Forward to medical control ASAP.
9. If AED with cardiac monitor is available and the provider is trained in its use, identify and treat dysrhythmias according to the appropriate algorithm (*see* Pulseless Arrest, Bradycardia/Heart Blocks, Tachycardias Protocols).
10. When to *stop* resuscitation.
    - When the patient regains pulse and respiration.
    - When equally or more highly trained resources or health care personnel take over.
    - When resources are physically exhausted.
    - When the risks and costs of continuing resuscitation clearly outweigh the potential benefits, considering the totality of circumstances.
    - When a patient's personal physician or medical control orders resuscitation to stop. Contact medical control for options to stop:
        - When the patient is unresponsive to ACLS protocols for 20 minutes.
        - In the absence of advanced cardiac life support, when the same TEMS medic has documented the absence of all vital signs for 20 consecutive minutes, in spite of BLS measures, except in the case of hypothermia.

Note: The algorithms for cardiac arrest or dysrhythmia in the following pages reflect CONTOMS interpretation of the 2010 ACLS guidelines for rapid application in the tactical pre-hospital setting. The guidelines provided are intended for adult patients. The provider is referred to the AHA's *Handbook of Emergency Cardiovascular Care for Healthcare Providers* for complete, standard, and current ACLS guidelines.

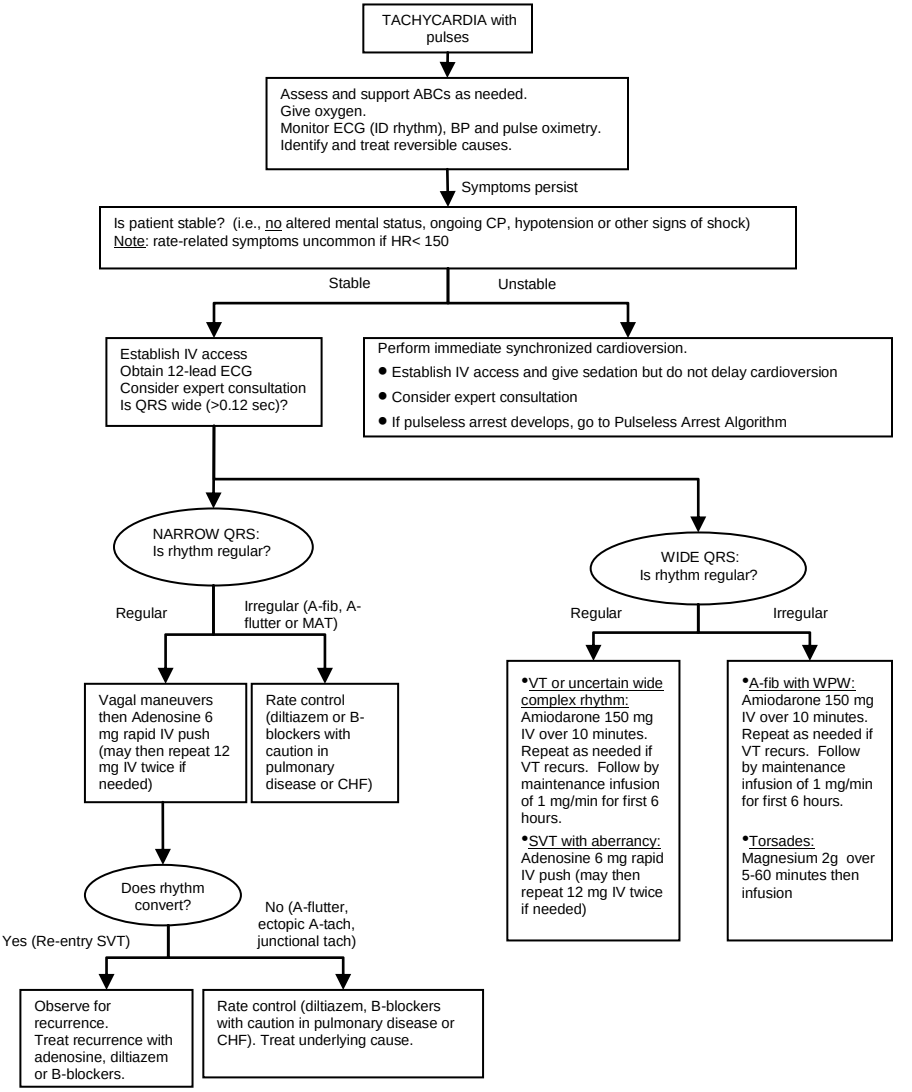
Pulseless Arrest Algorithm



Bradycardia/Heart Blocks Algorithm



Tachycardias Algorithm



D_2 = Decontamination/Drugs (Toxicology)

Toxins: General

Clinical Condition

This general protocol refers to toxins that are:

- Ingested
- Inhaled
- Absorbed/contact exposures
- Injected

Signs and Symptoms

Variable presentation depending on toxin and route of exposure

Treatment

1. Scene safety: Ensure that rescuers and patients are protected from immediate danger of contamination. Toxic exposures might require special precautions, including HAZMAT precautions, before patient treatment begins.
2. Perform general assessment.
    - What—Identify specific toxin and amount of exposure if possible. Bring pill bottles, vomitus samples, and material safety data sheets.
    - When—Identify times of exposure if possible.
    - Why—Identify reason for exposure if possible.
3. Oxygen via NRB, as indicated.
4. Assist ventilation as necessary.
5. Monitor pulse oximetry, if available.
6. Decontaminate if appropriate; remove and dilute toxins.
7. Advanced airway, as necessary.
8. Place on cardiac monitor, if available.
9. Establish IV access.
10. Treat symptomatically.

NATIONAL POISON CONTROL NUMBER
800-222-1222

Ingested Toxins

1. Contact Poison Control Center (1-800-222-1222).
2. Administer activated charcoal with sorbitol 1 g/kg by mouth if advised to do so by Poison Control Center.
Note: Charcoal is contraindicated following an ingestion if any of the following factors is present: caustic ingestion, hydrocarbon ingestion, seizures, altered mental status, and patients who are unable to swallow or protect airway.
3. Place on cardiac monitor, if available
4. Establish IV access.
5. Treat symptomatically.

Inhaled Toxins

1. Protect rescuers from inhalational exposure.
2. Remove the patient from continued exposure.
3. Oxygen via NRB.
4. Assist ventilation, if needed.
5. Monitor pulse oximetry, if available.
6. Request EMS support, if available.
7. Administer bronchodilators, if needed. Albuterol 2.5 mg by nebulization (use either 3 mL premix or 0.5 mL of 0.5% solution mixed in 3 mL of normal saline, or two puffs via metered dose inhaler with spacer).
8. Advanced airway, as needed.
9. Place on cardiac monitor, if available.
10. Establish IV access.
11. Treat symptomatically.

NATIONAL POISON CONTROL NUMBER
800-222-1222

Absorbed Toxins/Contact Exposures (Including Chemical Vesicant Agents)

1. Ensure rescuer safety using appropriate personal protective equipment as indicated.
2. Remove all patient clothing.
3. Decontaminate as necessary. Flush skin vigorously with water for at least 20 minutes. Wash with mild soap if available.
4. Flush eyes continuously with water, saline, or LR.
5. Place on cardiac monitor, if available.
6. Establish IV access.
7. Treat for pain *(see* Pain Management Protocol, *page Tan 97)*.
8. Consider the use of an ophthalmic anesthetic.
9. Administer anti-pruritic agents as needed. Give Diphenhydramine (Benadryl) 25–50 mg IV/IM/PO.
10. Treat symptomatically.

Injected Toxins

Note: There is no effective method of removing or diluting toxins that have already been injected through the skin. Avoid further exposure to injected toxins.

1. General supportive care.
2. Oxygen via NRB.
3. Assist ventilation, if needed.
4. Monitor pulse oximetry, if available.
5. Request EMS support, if available.
6. Advanced airway as needed.
7. Place on cardiac monitor, if available.
8. Establish IV access.
9. Treat symptomatically.

NATIONAL POISON CONTROL NUMBER
800-222-1222

Tricyclic Antidepressant Overdose

Clinical Condition

Tricyclic antidepressants (TCAs) include amitriptyline, clomipramine, desipramine, doxepin, imipramine, nortriptyline, and protriptyline.

Signs and Symptoms

1. History of depression or suicidal intent
2. Open pill bottles
3. Altered mental status

Treatment

1. Hyperventilate with BVM if unresponsive.
2. Monitor pulse oximetry, if available.
3. Request EMS support, if available.
4. Advanced airway.
5. Place on cardiac monitor, if available.
6. Establish IV access.
7. Administer sodium bicarbonate (NaHCO3), 1 mEq/kg IV bolus, if QRS >0.10 msec or patient has seizures or decreased level of consciousness
   And
   Mix 2 amps of sodium bicarbonate (NaHCO3) in 1000ml ½NS (after removing equivalent volume, 100cc) OR 3 amps sodium bicarbonate (NaHCO3) in 1000ml D5W (after removing equivalent volume, 150cc). Run at 200cc/hr.

8. Consider lorazepam 2–4 mg IV for seizures.
9. Watch closely for decompensation/cardiac arrest after seizure, as seizure-induced acidosis causes increased TCA toxicity.

NATIONAL POISON CONTROL NUMBER
800-222-1222

Narcotic Overdose

Clinical Condition

Narcotics are legal and illegal opiate substances capable of producing analgesia including morphine, fentanyl, oxycodone and heroin

Signs and Symptoms

1. Decreased or otherwise altered mental status
2. Pinpoint pupils
3. Decreased respiratory rate with or without pulmonary edema

Treatment

1. Oxygen NRB.
2. Assist ventilation, if needed.
3. Monitor pulse oximetry, if available.
4. Request EMS support, if available.
5. Advanced airway, if needed.
6. Place on cardiac monitor, if available.
7. Establish IV access.
8. Naloxone (Narcan) 0.4-2.0 mg IV, ET, IM, SC or intranasal via Mucosal Atomizer Device if respirations <8 bpm or inability to maintain oxygenation (be aware that the patient may become combative and require restraint).
9. Unless in respiratory arrest, the lowest amount required should be used and titrated to effect (return of spontaneous respirations, not full wakefulness). Excessive use of naloxone may result in non-cardiogenic pulmonary edema.
10. Do NOT use naloxone in an intubated patient in the tactical environment.
11. May repeat every 2–3 minutes up to 10 mg, then question opiate intoxication

    Or

    For prolonged field times, consider a Naloxone (Narcan) drip (2 mg/500 mL NS or D_5 W for a concentration of 4 mg per liter) and run at 2/3 the waking dose (dose required for return of spontaneous respirations) per hour (minimum 0.4 mg/h = 100 cc/h).

NATIONAL POISON CONTROL NUMBER
800-222-1222

Organophosphate and Carbamate Poisoning

Clinical Condition

Organophosphates and carbamates include nerve agents, as well as some insecticides and pesticides.

Signs and Symptoms

1. SLUDGE Syndrome: Salivation, Lacrimation, Urination, Defecation, Gastric cramping, Emesis
2. DUMBELS Symptoms: Defecation, Urination, Miosis, Bradycardia/Bronchorrhea, Emesis, Lacrimation, Salivation
2. Decreased mental status including coma
3. Muscle fasiculations
4. Seizure activity

Treatment

1. Oxygen NRB.
2. Assist ventilation, if needed.
3. Monitor pulse oximetry, if available.
4. If patient exhibits signs or symptoms of miosis (for a vapor exposure), and at least one of the SLUDGE symptoms or altered mentation, administer one DOUDOTE autoinjector consisting of atropine 2.1 mg and 2-PAMCl (pralidoxime chloride) 600-mg. Administer one additional DUODOTE for moderate respiratory distress or two additional DUODOTE kits for severe intoxication (gasping respirations, twitching, coma or seizures).
5. Decontaminate patient as indicated based on extent and type of exposure.
6. Request EMS support, if available.
7. Establish advanced airway, if necessary.
8. Place on cardiac monitor, if available.
9. Establish IV access.
10. Administer atropine 2 mg IV/IM if symptoms persist.
11. May repeat atropine dose IV/IM every 5 minutes as necessary to reduce secretions and ventilatory resistance. ***Do not*** titrate atropine to pupil size or to heart rate.
12. Administer diazepam (Valium) 10 mg IV/IM for severe intoxication or seizures utilizing Diazepam Autoinjectors, if available.
13. May repeat diazepam (Valium) dose every 15 minutes as necessary to control seizures, to a maximum of 30 mg.

NATIONAL POISON CONTROL NUMBER
800-222-1222

Cyanide Poisoning

Clinical Condition

Cyanide is a toxic chemical that causes incapacitation and death by disrupting cellular metabolism.

Signs and Symptoms

1. Acute respiratory distress with clear lungs
2. Comatose presentation
3. History of exposure to burning plastics
4. Cyanosis (rarely)
5. Cherry red lips (rarely)

Treatment

1. Oxygen via NRB.
2. Assist ventilations, if required, via BVM. Rescue breathing (mouth-mouth, mouth-mask) should not be performed due to risk of cross contamination.
3. Monitor pulse oximetry, if available.
4. Request EMS support, if available.
5. Place on cardiac monitor, if available.
6. Establish IV access.
5. Administer antidote kit, if available.

NATIONAL POISON CONTROL NUMBER
800-222-1222

a. *Lily Cyanide Kit*: Follow kit instructions, if available. If not: Administer amyl nitrate. After breaking aspirol, hold in front of the patient's nose and mouth for 15 seconds. Continue 15 seconds on/15 seconds off until IV established. If patient requires assisted ventilation, place the aspirol inside the BVM. Administer sodium nitrite 300 mg IV over 5 minutes. Administer sodium thiosulfate 12.5 gm over 5 minutes. If the patient demonstrates recurrent signs of toxicity after successful treatment, repeat the sodium nitrite and sodium thiosulfate at one-half the initial dose.

OR

b. *Cyanokit*: Follow kit instructions, if available. If not: Reconstitute the hydroxycobalamin 5 gm packet with NS 200 ml. Mix for 1 minute by inverting repeatedly. Administer hydroxycobalamin 5 gm IV over 15 minutes. Depending on the severity of poisoning and the clinical response, a second dose of hydroxycobalamin 5 gm may be administered IV for a total dose of 10 gm.

6. Treat hypotension with IV fluid resuscitation. If hypotension persists after one liter of crystalloid, administer dopamine (800 mg in 500 mL, or premix) and titrate to BP >100 mm Hg.

D_3 = Deficit

Altered Mental Status- Not Combative

Clinical Condition

State of decreased mental alertness, cognition or orientation from a variety of potential causes

Signs and Symptoms

1. Alert but somnolent or otherwise exhibiting decreased level of functioning
2. Responds only to verbal stimuli, painful stimuli or is minimally responsive
3. Evidence of trauma, drug use, diabetes, or alcohol/drug use

Treatment

1. Assess for trauma, drug use, diabetes, alcohol use, and Medic Alert tags.
2. Immobilize spine if indicated (*see* C-Spine Injury Protocol, *page Lt. Blue 46*).
3. Oxygen via NRB; assist ventilation if needed.
4. Monitor pulse oximetry, if available.
5. Request EMS support, if available.
6. Advanced airway, if needed.
7. Place on cardiac monitor, if available.
8. Establish IV access.
9. Measure blood glucose using an approved technique and device, if available.
10. Administer the following:
    - Fluid challenge, if indicated, for shock.
    - Thiamine 100 mg IV.
    - Dextrose 25 g (50 mL of 50% solution) IV for blood sugar <80 mg/dL or if clinically indicated.
    - Naloxone (Narcan) 2.0 mg IV, ET, or IM if respirations <8 bpm *as per* Narcotic Overdose Protocol, *page Orange 66*.
    - Glucagon 1 mg IM if IV unavailable for administration of dextrose.

Altered Mental Status- Combative R/O Excited Delirium Syndrome

Clinical Condition

Agitated or combative patients pose special concerns for assessment and treatment. One potentially fatal condition that must be excluded or managed is Excited Delirium Syndrome, which can progress along a cascade to Sudden In-Custody Death.

Signs and Symptoms

1. Agitation or violent behavior
2. Evidence of drug or alcohol intoxication
3. Presence of markers for Excited Delirium Syndrome
    a. altered mental status
    b. psychomotor agitation
    c. anxiety
    d. hallucinations
    e. speech disturbances
    f. violent and bizarre behavior
    g. insensitivity to pain
    h. elevated body temperature
    i. superhuman strength

Treatment

1. **REACT** to the problem:
    a. **R**apid Sedation: Administer sedative IM (consider versed 2 mg IM OR ketamine 1-2 mg IM).
    b. **E**mergency Care: Manage XABCs.
    c. **A**ssessment: Consider safety issues and potential causes, such as cocaine intoxication.
    d. **C**ontain and Restrain, but Don't Restrict: Secure individual without hog-tying or holding prone, which can restrict breathing.
    e. **T**ransport: ExDS is a medical emergency. Transport patient for prompt advanced care.
2. Immobilize spine if indicated (*see* C-Spine Injury Protocol, *page Lt. Blue 46*).
3. Oxygen via NRB; assist ventilation if needed.
4. Monitor pulse oximetry, if available.
5. Request EMS support, if available.
6. Advanced airway, if needed.
7. Place on cardiac monitor, if available.
8. Establish IV access, if conditions permit.
9. Measure blood glucose using an approved technique and device, if available.

10. Administer the following, as conditions permit:
    - Fluid challenge, if indicated, for shock.
    - Thiamine 100 mg IV.
    - Dextrose 25 g (50 mL of 50% solution) IV for blood sugar <80 mg/dL or if clinically indicated.
    - Naloxone (Narcan) 2.0 mg IV, ET, or IM if respirations <8 bpm *as per* Narcotic Overdose Protocol, *page Orange 67*.
    - Glucagon 1 mg IM if IV unavailable for administration of dextrose.

Head Trauma

Clinical Condition

Head trauma is a spectrum of injuries that can produce differing traumatic brain injury (TBI) ranging from mild concussion to intracerebral bleed.

Signs and Symptoms

1. Mechanism of injury capable of causing TBI
2. Evidence of injury to head and neck structures
3. Confusion or altered mental status

Treatment

1. Immobilize spine if indicated (*see* C-Spine Injury Protocol, *page Lt. Blue 46*).
2. Oxygen via NRB. Hyperventilate (PPV) at 16–20/min, if level of consciousness is decreased.
3. Consider other causes of shock, if present.
4. If not in shock, elevate head of long spinal immobilization device.
5. Request EMS support, if needed.
6. Advanced airway, if needed.
7. Establish IV access
8. Place on cardiac monitor, if available.
9. Treat per Seizures Protocol *(see page Yellow 75)*, as required.
10. Treat wounds as indicated *(see* Basic Wound Care Protocol, *page Tan 96)*.

Diabetic Emergency

Clinical Condition

A diabetic emergency results when a diabetic individual has a symptomatic drop in blood sugar affecting global functioning. This protocol is for patients with known diabetes.

Signs and Symptoms

1. Any neurologic manifestation from focal neurologic deficits to altered mental status
2. Anxiety
3. Clammy, cool and diaphoretic skin
4. History of known diabetes
5. History of illness or missed meals

Treatment

1. Oxygen via NRB.
2. Request EMS support, if available.
3. If patient is conscious, give glucose orally.
4. If patient is unconscious, place in left lateral decubitus (recovery) position. Give glucose paste under tongue or between gum and cheek.
5. Establish IV.
6. Determine blood glucose using approved technique or device, if available.
7. Cardiac monitor.
8. Medication:
    - Dextrose 25 g (50 mL of 50% solution) IV for blood sugar <80 mg/dL or if clinically indicated.
    - If IV unavailable, administer glucagon 1 mg IM.

Seizures

Clinical Condition
A state of altered brain electrical activity

Signs or Symptoms
1. Persistent staring (“absence seizures”)
2. All-body shaking, twitching or spasms (“grand mal seizures”)
3. Focal extremity shaking, twitching or spasms (“petit mal seizures”)
4. Altered level of consciousness
5. Amnestic after event with confusion (“post-ictal state”)

Treatment
1. Oxygen via NRB.
2. Spinal immobilization if indicated (*see* C-Spine Injury Protocol, *page Lt. Blue 46*).
3. Left lateral decubitus (recovery) position and protect patient from injury.
4. Request EMS support, if available.
5. Advanced airway if needed.
6. Place on cardiac monitor, if available.
7. Establish IV access.
8. Measure blood glucose using an approved technique or device, if available. Treat per protocol *(see* Altered Mental Status Protocols, *pages Yellow 70-71).*
9. Adult patients—Diazepam 2.5 mg IV or IM, to maximum of 10mg for active seizures. Check vital signs before each dose, if possible. Diazepam 5.0 mg may be given per rectum if IV access is unobtainable secondary to seizure activity. Alternatively, diazepam may be delivered via the intranasal route using a Mucosal Atomizer Device.

Note: If seizure is secondary to trauma or suspected stroke, *without* the possibility of hypoglycemia, *do not* give dextrose or glucagon.

E = Extremity and Environment

Amputations

Clinical Condition

Amputations are traumatic removal of a body part, typically an extremity

Signs and Symptoms

1. Removal of all or part of an extremity
2. Significant injured trauma patient

Treatment

1. Control bleeding; use tourniquet(s) as required—*see* Exsanguinating Hemorrhage Protocol, *page Purple 42.*
2. Oxygen via NRB.
3. Treat for shock.
4. Cover stump with moist sterile dressing.
5. Rinse severed part briefly and gently with sterile saline to remove debris.
6. Wrap severed part in sterile gauze, moisten with sterile saline (do not soak), place in a watertight container. Place container on ice (do not use dry ice). ***Do not put directly on ice.*** If necessary, use ice packs to provide some level of cooling.
7. Request EMS support, if available.
8. Transport without delay to appropriate facility.
9. Establish IV access.
10. Place on cardiac monitor, if available.
11. Follow Pain Management Protocol *(see page Tan 97).*

Crush Syndrome

Clinical Condition

Prolonged entrapment (e.g. limb) or immobility in debris produces toxic byproducts that can cause fatal systemic consequences in the patient when patient is removed from being entrapped and those substances enter the patient's bloodstream

Signs and Symptoms

1. Patient entrapment for >2 hours
2. One or more extremities trapped by crushing objects such as concrete rubble

Treatment

1. Assure scene safety.
2. If no physical contact is possible due to structural barriers, begin verbal assessment of level of consciousness, extent of injury, and description of events relating to injury.
3. Request EMS support, if available.
4. Complete trauma assessment to evaluate for other injuries and stabilize XABCs as indicated. If the extremity is reachable, check for decreased sensation, motor function, skin color changes, and diminished distal pulses.
5. Apply a dust mask when the dust load around the victim is significant and no oxygen is available at the scene. Consider other PPE as appropriate (e.g. eye, hearing, helmet).
6. Apply NRB with 100% oxygen at rate of 10–12 L/min if available.
7. Monitor pulse oximetry, if available.
8. Establish advanced airway as needed.
9. Place on cardiac monitor, if available.
10. *Only if no personnel capable of delivering IV medications are present and the patient is entrapped by an isolated limb:* Just prior to extrication from entrapment, place tourniquets proximally on affected extremities as close as possible to crushed tissue and start an albuterol nebulizer. Otherwise, place tourniquets only for uncontrolled bleeding.
11. Establish two large bore IV access lines.
12. Infuse a 2-L NS bolus for the average adult (use 20 mL/kg for pediatric patients and 10 mL/kg for elderly/renal failure/CHF patients). Following this bolus, add 1 amp (50 mEq) sodium bicarbonate to each additional liter of NS and infuse at 1–1.5 L/h. Discontinue the addition of sodium bicarbonate to NS once 200 mEq sodium bicarbonate infused (approx. 4 L). If additional fluid boluses are necessary for blood pressure, use NS without bicarbonate through the second IV.
13. Pain control per Pain Management Protocol *(see page Tan 97).*
14. Immediately prior to extrication, administer 2 amps (100 mEq) of sodium bicarbonate IV (for pediatric patients use 1 mEq/kg up to 100 mEq) in addition to the previously administered dose.
15. Extricate the patient and transport to the hospital.
16. Treat for hypothermia--*see* Cold Injury (Hypothermia) Protocol, *page Green 81*.

17. Monitor for hyperkalemia by checking rhythm strips for peaked T waves and/or QRS prolongation (>0.12 second). If present, treat with all of the following:
    - Calcium gluconate, 30 mL of a 10% solution given slowly over 5 minutes; continue to re-dose every 30 minutes up to two times (total of 90 mL of a 10% solution) if ectopy or QRS prolongation is present; do not give in same IV line as sodium bicarbonate.
    - Albuterol, standard dose by nebulizer; redose or use continuous nebulization as needed.
    - Sodium bicarbonate, 1 amp IV once.
    - Dextrose 25 gm and Regular Insulin 10 U IV.

Snakebites

Clinical Condition

Bites produced by snakes (crotalidae or elapids) with both traumatic injury (majority) and potential envenomation (minority)

Signs and Symptoms

1. Crotalidae (pit vipers)—hematologic pattern
    a. Pain
    b. Erythema
    c. Bleeding, hemorrhagic bullae or ecchymosis
    d. Metallic taste
    e. Signs of shock
    f. Swelling/edema
2. Elapids (coral snake)—neurologic pattern
    a. Cranial Nerve dysfunction (e.g. ptosis, swallowing difficulty)
    b. Parathesias
    c. Fasiculations
    d. Weakness
    e. Altered Mental Status

Treatment

1. Obtain important information regarding the snakebite.
    - Type of snake if known and location found
    - Appearance of snake: shape of pupil and head; presence of stripes, rattle, or pits
    - Time of bite
    - Prior first aid by others
    - Signs and symptoms: Local pain and swelling, peculiar metallic taste in mouth, hypotension, coma, bleeding

2. Estimate likelihood of envenomation based on the pattern of bite marks, recognition of the snake, extent of discoloration, amount of swelling, level of pain, and any associated systemic reaction (e.g., bleeding, hypotension, or anaphylaxis). *Note:* Bites from coral snakes usually do not have any early symptoms; thus all bites are considered envenomated.
3. Safety first—*do not* attempt to capture the snake. If the snake is dead, bring it to the hospital for positive identification. Do not handle fangs since they are capable of envenomation even when the snake is dead.
4. Document distal pulse. Remove rings or other constricting jewelry that might compromise distal circulation.
5. Place constricting band (not tourniquet) proximal to the bite site for suspected significant pit viper envenomation if more than one hour from definitive care. Monitor closely. You should be able to put a finger under a constricting band, between the band and the skin.
6. *Do not* incise snakebite site or attempt to suction venom out of the snakebite by mouth.
7. *Do not* apply ice directly to skin surfaces since serious tissue damage can result. A cool wet cloth can afford some pain relief but does nothing to stop the venom.
8. Immobilize the bitten part in neutral position with splint.
9. Transport all snakebite victims promptly to the hospital for evaluation and antivenin if needed.

10. Monitor patient and be prepared to manage systemic complications per specific protocol (e.g., Allergy/Anaphylaxis Protocol *page Lt. Blue 45*) and by consulting medical control.
11. Establish IV access.
12. Be prepared to establish advanced airway and provide fluid challenge.
13. Manage any associated pain according to the Pain Management Protocol, *page Tan 97*.

Cold Injury (Hypothermia)

Clinical Condition

Decreased core body temperature leading to life-threatening clinical situation

Signs and Symptoms

1. Cold to touch
2. Mild—Shivering, poor coordination
3. Moderate--Loss of shivering, altered mental status
4. Severe--Comatose

Treatment

1. Assessment
    - Measure core temperature—rectal is the preferred route.
        - Mild hypothermia is 34–36°C (93.2–96.8°F).
        - Moderate hypothermia is 30–34°C (86–93.2°F).
        - Severe hypothermia is below 30°C (86°F).
    - Progressive shell to core shunt:
        - Cold, pale, cyanotic skin.
        - Cold diuresis.
        - Reduced shell function causing clumsiness at fine motor tasks is an early sign, but progressive dysfunction results as cold, toxic wastes are pooled in shell circulation.
        - Cardiac function is stable initially but in severe hypothermia the heart becomes irritable and easily fibrillates from a variety of stimuli (e.g., rough handling).
        - Shivering initially present but lost in severe hypothermia.
        - Altered mental status (mild to severe changes).
2. Management: Mild and moderate hypothermia

    Note: Since mild and moderate hypothermia cause no significant cardiac instability, any method of field rewarming is generally safe.
    - Reduce the cold challenge by protecting the patient from the cold environment.
    - Remove cold/damp clothing as circumstances permit.
    - Reverse the cold challenge by adding external heat using a thermal rescue blanket, "burrito wrap" device or chemical warmers. Target especially truncal areas and take precautions against burns.
    - Increase intrinsic heat production by exercise (calorie stores must be adequate for effective exercise).
    - Increase heat retention by adding insulation.
    - Treat associated conditions.

3. Management: Severe hypothermia

Note: The severely cold heart is sensitive to a variety of stimuli, and fatal dysrhythmias can be caused by incorrect or carelessly applied treatment efforts.

- Field rewarming and resuscitation is difficult, dangerous, and rarely effective. Transport to controlled rewarming as soon as possible.
- Handle gently to prevent ventricular fibrillation. Keep clothing in place unless wet.
- Keep the patient flat to avoid vascular shock from postural changes.
- Reduce the cold challenge by protecting the patient from the cold environment.
- Ventilate as necessary with heated and humidified air or oxygen.
- Add insulation to avoid further heat loss.
- Avoid exercise and extreme external rewarming to prevent sudden shell reperfusion. Heat packs are recommended because they help prevent further heat loss to a cold environment; they generally do not produce extreme shell rewarming. When using heat packs, apply to axillae, groin, and head. Protect cold skin from direct contact with hot packs.
- Treat associated conditions.
- Advanced airway, as necessary.
- Place on cardiac monitor, if available.
- Establish IV access and administer warmed IV fluids.

Heat Injury (Heat Exhaustion and Heat Stroke)

Clinical Condition

Spectrum of injury involving elevated core body temperature

Signs and Symptoms

1. Heat Exhaustion
    a. Heat-related collapse
    b. Dehydration
    c. Profuse sweating
    d. Nausea/vomiting
    e. Warm to touch
2. Heat Stroke
    a. Heat-related collapse with change in mental status
    b. Dehydration
    c. Profuse sweating or absence of sweating
    d. Hot to touch

Treatment

Caution: Do not give acetaminophen or other antipyretics to victims of heat injury (hyperthermia).

1. Heat Exhaustion

- Protect the patient from heat. Stop exercise and put patient at rest in a cool, shady place.
- Oral fluids can be effective if the patient is not vomiting. Use dilute (<5% sugar) fluids given in small sips. Commercial sports drinks should be diluted to half strength.
- Establish IV access and perform fluid challenge if the patient is unable to tolerate PO fluids. Treat for dehydration per protocol, if indicated. Institution of IV therapy automatically warrants subsequent medical evaluation at a designated treatment facility in all cases unless otherwise directed by medical control.

2. Heat Stroke

Note: Heat stroke is a true medical emergency that requires aggressive field treatment and rapid transport.

- Cool the patient immediately by any practical means, such as:
    - Moisten the skin and fan vigorously.
    - Ice packs, wet patient, and air conditioning en route.
    - Immerse the patient to the neck in cool water.
    - Discontinue radical cooling if shivering begins, core temperature falls to 102°F, or if consciousness and CNS function return to normal.
- Oxygen via NRB; assist ventilation as needed.
- Request EMS support, if available.
- Advanced airway, if needed.
- Place on cardiac monitor, if available.
- Establish IV access.
- Perform fluid challenge, if hypotensive.
- Monitor core temperature, if possible.
- Patient may require diazepam (Valium) 2.5 mg IV/IM to control shivering during cooling. May repeat every 15 minutes as needed to a maximum dose of 10 mg.
- Expedite transport to definitive care.

Drowning and Near-Drowning

Clinical Condition

Suffocation in water leading to spectrum of life-threatening clinical sequelae

Signs and Symptoms

1. Choking/gagging
2. Difficulty breathing
3. Unresponsiveness
4. Found in or near water

Treatment

1. Assure scene and rescuer safety. Call appropriate public safety agencies, including water rescue teams, to properly stabilize the scene, if needed.
2. Maintain an open airway and assist ventilation as needed immediately upon obtaining access to patient. Assure spinal stabilization and immobilization if indicated (i.e., unwitnessed event, unconscious patient, or mechanism of injury likely to result in spinal injury).
3. Once the patient is rescued and is placed in a safe environment, administer specific emergency care to stabilize the XABCs.
4. Initiate CPR *(see* Cardiac Arrest Protocol, *page Red 54)* with AED *(see* AED Use Protocol, *page Pink 59*) if indicated.
5. Obtain appropriate history related to the event (length of exposure, temperature of liquid medium, and potential for injury), including past medical history, medications, drug allergies, and substance abuse.
6. If suspected hypothermia, see Cold Injury (Hypothermia) Protocol *(see page Green 81)* or Cardiac Arrest with Hypothermia Protocol *(see page Red 55)*.
7. Advanced airway, if indicated.
8. Establish IV access. If suspected hypovolemia from associated injury, treat according to Hypovolemic Shock Protocol *(see page Red 58)*.
9. Special considerations:
    - The cold water drowning/near-drowning victim is not dead until he or she is warm and dead.
    - Near-drowning victims may exhibit delayed pulmonary complications up to 24–36 hours after the submersion incident.
    - For all drowning/near-drowning victims with suspected barotrauma, see Decompression Illness Protocol (*see page Green 86*).

Decompression Illness

Clinical Condition

Life-threatening diving illness encountered on ascent related to compressed gases expanding and being released into the bloodstream and tissues

Signs and Symptoms

1. Arterial gas embolism (AGE)
    a. Symptoms occur immediately upon surfacing
    b. Immediate unresponsiveness
    c. Cardiac arrest
    d. Focal neurological deficit upon surfacing
2. Decompression sickness type I (DCS I)
    a. Evolution of skin itching and rashes
    b. Skin marbling
    c. Red/purple patches
    d. Limb swelling,
    e. Joint and/or muscle pain
3. Decompression sickness type II (DCS II)
    a. Evolution of any DCS I symptom plus either neurological symptoms (numbness, tingling, tremors, paralysis, paresthesia, mental status changes, fatigue, or amnesia); inner ear symptoms (ringing in ears, vertigo, hearing loss, dizziness, nausea, or vomiting); cardiopulmonary symptoms (chest pain, tachypnea, cough, or loss of consciousness); or regional pain (hip, abdomen, thorax, pelvis, or spine).

Treatment

1. Administer 100% oxygen immediately.
2. Initiate CPR *(see* Cardiac Arrest Protocol, *page Red 54*) if indicated for suspected AGE.
3. Transport to hyperbaric oxygen recompression therapy as soon as possible.
4. Complete neurological exam prior to recompression if symptoms allow.
5. If transportation to hyperbaric chamber is necessary, transport in the left lateral decubitus position to prevent any emboli in the ventricles from migrating to the arterial system. For air transportation, fly below 1000 ft or pressurize the cabin to below 1000 ft. If transporting by ground, avoid mountain areas if possible.
6. Ensure that the patient remains well hydrated. Fully conscious patients may be given fluids by mouth. Stuporous or unconscious patients should be given IV NS.
7. Manage dysrhythmias per protocol if necessary.

Marine Envenomation

Clinical Condition

Marine bites and stings leading to traumatic injury and potential envenomation

Signs and Symptoms

1. Toxic Fish
    a. Caused by fish spines
    b. Immediate pain
    c. Cyanotic puncture wound with erythema and edema
    d. Pain in proximal lymph nodes
    e. Systemic symptoms (delirium, nausea/vomiting, elevated temperature) infrequently leading to shock and death
2. Stingrays
    a. Caused by serrated teeth on spine of tail
    b. Immediate pain
    c. Puncture injury with site edema
    d. Rare complications (hypotension, limb paralysis, bradycardia)
3. Jellyfish
    a. Caused by tentacles
    b. Immediate sharp, burning pain
    c. Linear erythematous eruptions
    d. Potential severe systemic response (anaphylaxis, syncope, paralysis)
4. Coral
    a. Caused by contact with coral itself
    b. Pain
    c. Rare complications
5. Blue-Ringed Octopus
    a. Bite is painless and may be overlooked
    b. Rapid and variable paralysis with respiratory distress
6. Sea Urchins
    a. Caused by stepping on urchin
    b. Multiple deep puncture wounds
    c. Immediate pain and swelling
    d. Systemic symptoms if greater than 15-20 punctures present
7. Sea Snakes
    a. Caused by fang punctures and teeth bites
    b. Latent period in onset of pain (minutes-hours)
    c. Initial Presentation: altered mental status
    d. Later Symptoms: dry throat, nausea/vomiting, generalized weakness and paralysis progressing to respiratory distress/failure

Treatment

1. Venomous Fish, Toxic Fish, Stingrays
    - Lay patient supine and observe for shock.
    - Irrigate wound with salt water to rinse off any remaining toxin.
    - Soak wound in water as hot as the patient can tolerate (<122°F) for 30–90 minutes. Use hot compresses if the wound is on the face.
    - Immobilize the affected extremity.
    - Give diazepam 5 mg IM for muscle spasms.
    - Manage pain. Do not use narcotics in cases of respiratory depression. Lidocaine may be used in the wound for pain relief, but never use lidocaine with epinephrine.
    - Transport to medical treatment facility for administration of antivenin if available and intensive care support if needed.
    - Tetanus prophylaxis.
2. Jellyfish
    - Apply vinegar or a 3–10% solution of acetic acid (or carbonated beverage) to sting site to neutralize stingers.
    - Gently remove any remaining tentacles with a towel or cloth.
    - Establish IV access.
    - Treat hypotension if necessary.
    - Use topical and/or local anesthetic agents for pain.
    - Consider use of topical corticosteroids for inflammation.
    - Tetanus prophylaxis.
3. Coral
    - Control bleeding.
    - Promptly clean with hydrogen peroxide or 10% povidone-iodine solution and débride the wound.
    - Topical antibiotic ointment.
    - Cover with a clean dressing.
    - Manage pain.
    - Tetanus prophylaxis.
4. Octopus
    - Control bleeding.
    - Clean and débride wound.
    - Cover with clean dressing
    - If blue-ringed octopus is suspected:
        - Apply pressure bandage and immobilize the bitten extremity.
        - Be prepared to administer CPR.
        - Immediately transport.
    - Tetanus prophylaxis.

5. Sea Urchins
    - Remove all protruding spine fragments from wound if possible. Do not break large pieces off in the wound.
    - Soak wound in water as hot as patient can tolerate (<122°F) for 30–90 minutes. Use hot compresses if wound is on the face.
    - Clean and débride wound and apply topical antibiotic ointment.
    - If necessary, evacuate patient to medical treatment facility.
    - Assess for and treat allergic reactions according to Allergy/Anaphylaxis Protocol (*see page Lt. Blue 45*).
    - Tetanus prophylaxis.

6. Cone Shells
    - Place patient supine.
    - Apply pressure bandage to wound and place injury site at a level below the heart.
    - Keep patient from moving.
    - Immediately transport.
    - Be prepared to ventilate and administer CPR.
    - Tetanus prophylaxis.
7. Sea Snakes
    - Keep patient still.
    - Apply pressure dressing to bite site and place in a position below the heart.
    - Transport immediately to medical treatment facility for antivenin treatment.
    - Establish IV and administer a NS bolus.
    - Be prepared to perform CPR.
    - Tetanus prophylaxis.

Burns

Clinical Condition

Thermal injury pattern involving various degrees of skin injury often accompanied by inhalational injury to respiratory passageways and potential toxic inhalational exposure

Signs and Symptoms

1. First Degree Burns
    a. Erythema
    b. Painful
2. Second Degree Burns
    a. Erythema
    b. Blisters—clear or hemorrhagic
    c. Painful
3. Third Degree Burns
    a. White, mottled or indurated
    b. Not painful/insensate
4. Fourth Degree Burns
    a. Charred appearance
    b. Not painful/insensate
    c. Extensive underlying tissue damage
5. Inhalational Injury
    a. Respiratory distress
    b. Wheezing
    c. Soot in airway or nasal passage ways
    d. Coughing up soot
6. Toxic Exposures
    a. Burning plastics—cyanide
    b. Stored chemicals

Treatment

1. Remove burned clothing and jewelry unless adherent to patient.
2. Oxygen via NRB or NC. Monitor pulse oximetry, if available.
3. Give highest priority to airway problems, inhalational injuries, and major trauma.
4. Consider other causes of shock, if present.
5. Estimate %BSA of burn using Rule of 9s, Rule of 10s, the palm of the patient or the Lund/Browder chart.
6. If burn area <10% BSA, cover with dressing soaked in normal saline or other commercially prepared moist burn dressing.
7. If burn area >10% BSA, cover with dry dressing or sterile sheet or commercially prepared dry dressing.
8. Request EMS support, if available, for severe burns, respiratory compromise, or burns >20% BSA.
9. Keep patient warm without overheating.
10. Advanced airway, if indicated.
11. Establish IV access (avoid placing the IV in burned skin if possible).
12. If burn >20% BSA, perform fluid challenge then contact medical control for fluid resuscitation guidelines.
13. Follow Pain Management Protocol *(see page Tan 97).*
14. Burn center referral criteria.
    - Under age 6 or over age 60.
    - Circumferential, airway, hands, or genitalia burns.
    - Burns >20% BSA, not counting first-degree burns.

Altitude Illness

Clinical Condition

Constellation of illnesses that can occur during ascent to high elevation (generally >8000 ft) including Acute Mountain Sickness (AMS), High Altitude Pulmonary Edema (HAPE) and High Altitude Cerebral Edema (HACE)

Signs and Symptoms

1. AMS
    a. Headache
    b. Nausea/vomiting
    c. Dizziness
    d. Normal mental status
2. HAPE
    a. Dyspnea
    b. Respiratory distress
    c. Bronchospastic cough
    d. Wheezing or crackles on auscultation
3. HACE
    a. Ataxia
    b. Altered mental status

Treatment

1. Prevention: Slow, gradual ascent—limit initial ascent to 8000 ft, then proceed1000 ft/day.
2. Obtain prophylactic pre-medication prior to ascent.
3. Seek advanced provider upon symptom onset for condition-specific treatment medications (e.g. acetazolamide, dexamethasone, nifedipine).
4. Oxygen NRB.
5. Hold altitude until acclimatization for AMS.
6. Descend if at all possible immediately for HAPE/HACE at least 3000 ft.
7. Utilize Gamow Bag if available for HAPE/HACE until able to descend.

Insect Bites

Clinical Condition

Bites or stings by Hymenoptera (bees, wasps, hornets), scorpions and spiders

Signs and Symptoms

1. Hymenoptera (Bees, Wasps, Hornets)
    a. Localized pain
    b. Itching
    c. Localized edema
    d. Erythema/warmth
    e. Anaphylaxis
2. Scorpions
    a. Localized pain
    b. Localized edema
    c. Nausea/vomiting
    d. Parasthesias
    e. Tongue fasiculations
    f. Agitation
    g. Eye problems (blurred vision, rotational eye movements)
3. Spiders
    a. Localized pain
    b. Black Widow (red hourglass): muscle spasms, abdominal pain and rigidity, nausea/vomiting, tachycardia, hypotension
    c. Brown Recluse (violin shape): ulceration at site progressing to eschar, fever/chills, nausea, rarely associated with massive hemolysis especially in children

Treatment

1. Hymenoptera (Bees, Wasps, Hornets)
    a. For anaphylaxis, treat per Anaphylaxis Protocol.
    b. Remove stinger by scraping with credit card.
    c. Apply ice.
    d. Apply topical 1% hydrocortisone cream.
    e. Administer Diphenhydramine (Benadryl) 25-50 mg PO.
2. Scorpions
    a. Apply ice to site.
    b. Provide supportive care.
    c. Treat pain per Pain Management Protocol.
    d. Treat nausea/vomiting with Ondansetron (Zofran) 8 mg PO or 4 mg IV/IM (preferred) OR Promethazine (Phenergan) 12.5 mg PO/IV/IM.
    e. Transport to definitive care for scorpion antivenin.

3. Spiders
    a. Treat pain per Pain Management Protocol.
    b. Black Widow Bites
        i. Give Diazepam (Valium) 5mg IV for muscle spasms.
        ii. Give Diphenhydramine (Benadryl) 25-50 mg PO/IV.
    c. Brown Recluse Bites
        i. Elevate bite site.
        ii. Rest.
        iii. Treat pain per Pain Management Protocol (*see page Tan 97*).
        iv. Give Diphenhydramine (Benadryl) 25 -50 mg PO/IV.
        v. Seek medical control for antibiotic selection.
4. Transport promptly all patients who are highly symptomatic for definitive care.

F = Fetus

Emergency Childbirth

Clinical Condition

Unexpected imminent delivery outside of established facility

Signs and Symptoms

1. Amniotic fluid release (“water breaks”)
2. Fetal crowning
3. Mother’s overwhelming urge to bear down/push

Treatment

1. Oxygen NC or NRB for mother.
2. Encourage mother not to bear down.
3. If patient is hypotensive, roll patient onto left hip.
4. If the presenting part is the cord, apply pressure to the baby with a sterile, gloved hand to keep pressure off the cord. Raise mother’s hips on two pillows. Keep cord warm. Do not clamp or cut cord. Transport *immediately*.
5. If baby’s head is delivering:
    - Do not hurry or slow delivery.
    - Suction infant with bulb syringe (mouth, then nose) as soon as head is delivered. Check to see if the cord is wrapped around the neck; if so, attempt to slip the cord over the head. Failing this attempt, clamp and cut cord immediately and deliver infant.
    - Double clamp the cord at least 4 inches from baby and cut between the clamps.
    - Dry baby, examine, and keep warm (may place next to mother’s skin). As soon as possible, enable child to nurse at the mother’s breast.
6. If there is a frank breech presentation, delivery will be difficult in the field; transport *immediately*. If delivery is necessary, allow the baby to deliver spontaneously to the umbilicus. Gently manipulate the baby to permit delivery of the arms. Promote head delivery by placing two fingers inside the vagina on the baby’s maxilla and exerting mild downward traction while supporting the baby’s torso with your forearm. Isolated extremity breech requires cesarean section delivery.
7. Do not externally massage the uterus en route until the placenta has delivered itself. Do not forcibly remove the placenta. If the placenta is delivered, wrap and package with cord intact.
8. Create a separate patient care report for the mother and each baby.

Neonatal Resuscitation

Clinical Condition

Immediate post-delivery assessment and care of newborn in wake of emergency childbirth

Signs and Symptoms

Apgar Score				
To calculate Apgar score, add the number of points for each of the five items. A total of 8–10 points is normal. Assess the Apgar score at 1 and 5 minutes after delivery.				
Presentation	0 Points	1 Point	2 Points	Points
Heart rate	Absent	Below 100 bpm	Over 100 bpm	
Respiratory	Absent	Slow and Irregular	Good, active crying	
Muscle tone	Limp	Some motion of extremities	Active movement	
Irritability	No response	Crying; some motion	Active vigorous crying	
Color	Blue or pale	Blue extremities; pink body	Completely pink	
			Apgar Scoring (Total Points)	

Treatment

1. Suction airway as soon as the head presents (mouth, then nose).
2. Dry infant to provide stimulation and prevent chilling.
3. Keep infant warm.
4. Check respiratory rate:
    - If >20/min or crying, take no action.
    - If <20/min, use tactile stimulation. If not immediately effective, provide assisted ventilation with 100% oxygen. If unsuccessful, close pop-off valve.
5. Check heart rate.
    - >100 bpm: take no action.
    - 80–100 bpm: ventilate with 100% oxygen.
    - <80: begin chest compressions and ventilate.
6. Check color.
    - Normal: no resuscitation needed.
    - Central cyanosis: provide 100% oxygen and assist ventilation as needed.
7. Request EMS support, if available.
8. Oral endotracheal intubation if BVM ventilation is ineffective or tracheal suctioning is required (i.e., thick meconium may need to be suctioned using the ET tube as a catheter).
9. Contact medical control for the following options:
    - Epinephrine 0.01 mg/kg IV/ET (1:10,000). Repeat every 5 minutes if the heart rate is <80 bpm despite adequate ventilation and a trial of chest compressions for 1 minute.
    - IV/IO fluid challenge: 10 mL/kg bolus.
    - Naloxone (Narcan) 0.4 mg IV/IO.
    - Consider hypoglycemia; give dextrose 10% (dilute 2 mL D50 in 8 mL LR, or pre-mixed) 2 mL/kg IV/IO.

General Protocols

Basic Wound Care

Clinical Condition

Open traumatic injury to skin and underlying structures, such as a laceration or puncture wound

Signs and Symptoms

1. Disruption in skin barrier
2. Potential internal structural damage (e.g., torn nerves, ligaments, tendons, and bones), foreign bodies, and distal neurovascular compromise
3. Potential infection (erythema, purulent drainage, abscess formation)

Treatment

1. Control bleeding as indicated.
2. If necessary, stabilize but do not remove an impaled object (except potentially in the cheek when both ends of the object are visible).
3. Clean site with copious clean water or NS irrigation. Use forceful irrigation from needleless angiocatheter and syringe.
4. Examine injured site to exclude internal structural damage (e.g., torn nerves, ligaments, tendons, and bones), foreign bodies, and distal neurovascular compromise.
5. Determine open treatment or standard sterile cover.
6. For open treatment:
    - Pack wound open with sterile gauze if field conditions will not permit definitive sterile closure, if site is grossly contaminated, if wound is too old (>6 hours on the body and >24 hours on the face), if there is an underlying fracture, or if there is already evident infection.
    - Apply topical antibacterial ointment.
    - Cover wound site with sterile dressing.
    - Splint site if indicated.
7. For standard sterile cover:
    - Apply topical antibacterial ointment.
    - Cover wound site with sterile dressing.
    - Splint site if indicated
8. Consult medical control to discuss need for transport, tetanus prophylaxis, rabies prophylaxis, or antibiotic prophylaxis.
9. Recheck all wounds within 24 hours.

Pain Management

Clinical Condition

Discomfort associated with acute injuries and illnesses

Signs and Symptoms

Level of pain should be rated (1-10) on initial assessment and in response to therapy

Treatment

1. Manage XABCs as needed.
2. Provide reassurance.
3. Splinting, as needed, with in-line stabilization.
4. Request EMS support, if needed.
5. Combat Pill Pack: Alert casualties should take pain medication in Combat Pill Pack (Acetaminophen 1000mg) if able to continue the mission or in the event that a trained provider is not available to provide additional pain management.
6. Opiate Pain Medication: Opiate pain medication may be considered if the casualty is unable to continue the mission, if there is a need for opiate analgesia to control the pain and if a trained provider is available to administer it.
    a. Naloxone (Narcan) should be available whenever administering opiates. Always monitor patients for respiratory depression. Continuous assessment of the patient who requires opiate reversal is required due to the potential differences in duration of action between Naloxone and the opiates.
    b. Oral Transmucosal Fentanyl Citrate (OTFC) 400-800mcg orally:
        i. Start with lower dose if unsure of response.
        ii. Tape OTFC lozenge to casualty's finger as an added safety measure.
        iii. Reassess in 15 minutes.
        iv. Repeat dose once if necessary.
    c. OR Morphine sulfate 5-10 mg IV/IO:
        i. Reassess in 10 minutes.
        ii. Repeat dose as required.
7. Treat nausea and vomiting:
    a. Ondansetron (Zofran) 8 mg PO or 4 mg IV/IM every eight hours as needed.
    b. OR Promethazine (Phenergan) 12.5 mg PO/IV/IM (may repeat once).

Clearance for Incarceration

Clinical Condition

Screening procedure of all custodial subjects to ensure that they receive necessary and appropriate medical care while reducing unnecessary and potentially dangerous prisoner transport to the hospital

Signs and Symptoms

1. Screening Exam: Whenever feasible, observe all custodial subject(s) for indications of injury or illness that would preclude transport to the detention facility. When indicated, conduct the screening exam as outlined in the section on the *General Approach to the Patient*, with the level of depth determined by the patient's overall clinical presentation. Base the disposition decision on an assessment of the subject's current medical condition, potential for delayed sequelae of known injuries or illness, and the medical capability of the detention facility.
2. Sudden In-Custody Death Syndrome: Prisoners who are at risk for in-custody death should receive special attention and should be evaluated at the hospital, when necessary. These prisoners should be continuously monitored and immediately evaluated at the first signs of change in behavior or sudden onset of tranquility or cessation of aggression. Great caution should be exercised to avoid restraint positions that compromise respiratory function, such as prone restraint or hog-tie restraint. Certain factors have been associated with an increased possibility of in-custody death. These include:
    - Male gender
    - Obesity
    - Pre-existing cardiac or respiratory disease
    - Drug intoxication
    - Bizarre behavior prior to detention
    - Unusually combative or resistive arrest
    - Signs of Excited Delirium Syndrome including extreme agitation, paranoia, hyperthermia, and unexpected physical strength. (This finding is an absolute indicator for hospital evaluation!)

Treatment

1. As a guide, transport patients with the following conditions to the hospital:
    - When the field environment is sufficiently coercive or hostile so as to preclude effective medical evaluation of the patient.
    - Any emergency conditions detected during the tactical primary survey (XABCs), as outlined throughout this manual.
    - Compromised mental health (e.g., suicidal ideation).
    - Non-availability or non-compliance with prescribed medications for cardiac, respiratory, or seizure disorders or other significant medical conditions.
    - Fever or significant infection source; communicable disease reportable to public health authorities.
    - Severe pain management issues.
    - Clinical intoxication with any substance that confounds reliable medical assessment in the field.
        a. Evidence of increasing, rather than decreasing, blood alcohol concentration.
        b. Signs and symptoms of withdrawal.
        c. Significant intoxication that compromises the patient's safety.
    - Any medical condition exceeding the medical capability of the detention facility.

2. Signout: Ensure appropriate sign out to other medical providers if transfer of care is required.

3. Difficult Dispositions: When in doubt regarding the disposition, contact medical control, seek another provider's evaluation on-scene, or transport to the hospital.

4. Documentation: Document the screening exam and the medical reasoning that forms the basis for the final disposition decision.

Less Lethal Kinetic Impact Munitions

Clinical Condition

Evaluation of individuals struck by less lethal kinetic impact munitions, such as bean bag rounds

Signs and Symptoms

Variable based on impact location and subject factors, but likely include:

1. Discomfort
2. Bruising
3. Localized edema
4. Potential laceration

Treatment

Note: Agency policy on deployment of less lethal kinetic impact munitions may also influence patient disposition, but should never supersede more conservative clinical decision making regarding appropriate patient care.

1. In general, evaluate the need for definitive care or extended monitoring based on impact location, extent of evident injury, potential for internal injury, and potential for delayed sequelae. When in doubt, transport to definitive care.
2. Unstable victims: Stabilize XABCs if necessary and transport to definitive care.
3. Always consider the cause of the behavior that resulted in the use of the kinetic impact munition in the first place. Refer to the Clearance for Incarceration Protocol *(see page Tan 98)* and manage accordingly.
4. Injuries requiring hospital evaluation: After appropriate initial on-scene care, promptly transport to definitive care any individuals with the following injuries:
    - Head/face impact
    - Throat impact
    - Neck/spine impact
    - Genitalia impact
    - Sternal impact
    - Abdominal impact
    - Costovertebral angle impact over the kidney
    - Any body cavity penetration (e.g., abdominal cavity) or significant laceration
5. Extremity impact: Manage any lacerations, contusions, or abrasions per Basic Wound Care Protocol *(see page Tan 96)*. Seek definitive care for fractures and significant lacerations after appropriate field treatment.
6. Consider need for tetanus prophylaxis.

Less Lethal Conducted Energy Weapons

Clinical Condition

Evaluation of individuals in wake of deployed less lethal conducted energy weapons, such as the Taser

Signs and Symptoms

Variable based on barb impact location and subject factors, but likely include:

1. Discomfort
2. Barb puncture and attachment
3. Potential laceration

Treatment

Note: Agency policy on deployment of less lethal conducted energy weapons may also influence patient disposition, but should never supersede more conservative clinical decision making regarding appropriate patient care.

1. In general, evaluate need for treatment beyond field care based on barb location, extent of any associated injury, and potential for delayed sequelae. When in doubt, transport to definitive care.
2. Unstable victims: Stabilize XABCs if necessary and transport to definitive care.
3. Always consider the cause of behavior that resulted in the use of the conducted energy weapon in the first place. Refer to the Clearance for Incarceration Protocol *(see page Tan 98)* and manage accordingly.
4. Injuries requiring hospital evaluation: After appropriate initial on-scene care, promptly transport to definitive care any individuals with the following conditions:
    - Barb in eyes
    - Barb in face
    - Barb in genitalia
    - Significant trauma or mechanism of injury related to events before, during, or after conducted energy weapon application (e.g., falls).
    - Burns, if there is more than mild reddening of the skin between the barbs.
    - Significant, symptomatic co-morbid conditions.
5. Remove barbs.
    - Examine and palpate the area to determine barb location and depth of penetration.
    - Grasp barb shaft and pull straight out with a gentle but quick motion.
    - Apply topical antibiotic ointment and adhesive bandage.
    - Transport patient to the hospital if barbs cannot be safely removed in the field setting.
6. Consider need for tetanus prophylaxis.

Less Lethal Chemical Munitions

Clinical Condition

Evaluation of individuals in wake of deployment of less lethal chemical munitions, such as chloroacetophenone (CN), orthochlorobenzalmalonitrile (CS), and oleoresin capsicum (OC)

Signs and Symptoms

1. Blepharospasm
2. Lacrimation
3. Coughing
4. Skin burning sensation
5. Potential for respiratory distress (especially underlying asthmatics)

Treatment

1. Remove from contaminated environment to open air.
2. Decontaminate as appropriate. Irrigate eyes as required. Be aware of the potential for off-gassing to affect providers, especially operators of transport vehicles. (Do not transport patients who have been exposed to chemical munitions in an aircraft without first decontaminating them and getting explicit authorization from the pilot in charge.)
3. Use copious cool water on the face to reduce the burning sensation.
4. *Do not* allow patient to rub eyes.
5. Be prepared to recognize and manage any complications (e.g., wheezing in asthmatics or corneal abrasions).
6. Instill 1–2 drops of ophthalmic topical anesthetic for patient comfort if needed. Advise the patient not to rub or touch eyes while anesthetized to avoid trauma (e.g. corneal abrasion).

Blast Injury

Clinical Condition

Evaluation of individuals caught in blast field produced by conventional or improvised explosive device

Signs and Symptoms

1. Blast Injury Mechanisms
    a. Type 1: Overpressure injury to hollow organs (ears, lungs, intestines)
    b. Type 2: Penetrating injuries caused by flying debris
    c. Type 3: Blunt injuries caused by physical displacement of victim by blast
    d. Type 4: Associated injuries such as chemical exposures, psychiatric sequelae, crush injury, etc.
2. Common clinical findings
    a. Dyspnea or rapid shallow respirations
    b. Decreased breath sounds (possible pneumothorax or lung contusion)
    c. Hypoxia, cyanosis, anxiety, or apathy
    d. Cough or hemoptysis (possibly severe enough to require airway management)
    e. Chest pain, bradycardia, and hypotension
    f. Penetrating neck or torso trauma, skull fracture, spinal injury, long-bone fractures, or traumatic amputations, >10% BSA burn, or inhalational injury in enclosed spaces
    g. Ruptured tympanic membrane.

Treatment

1. Assure scene safety or extract patient to a safe area. Do not use radio transmitters or cell phones.
2. Resuscitate XABCs and acute trauma in accordance with relevant protocols.
3. Request EMS support, if available.
4. Assess for blast injury mechanisms and clinical findings.
5. High-flow oxygen via NRB.
6. Advanced airway and/or BVM ventilation with caution, as required:
    - Prefer spontaneous respirations, if possible.
    - Low-pressure ventilation, if necessary.
7. Pulse oximetry, if available.
8. Cardiac monitor, if available.
9. Perform needle chest decompression if indicated for Blast Lung injury, in accordance with the Tension Pneumothorax Protocol *(see page Blue 50)*.
10. Evaluate for arterial gas embolism (stroke or visual symptoms, angina or MI symptoms, and para- or quadriplegia).
    - If suspected, transport in left lateral decubitus to prone position with head at the level of the heart.
    - Consider evacuation to a facility with a hyperbaric oxygen chamber.
11. Initiate IV NS, KVO. If shock management is indicated, titrate fluid administration to the minimum amount necessary to maintain mentation and/or radial pulse.
12. Evacuate to higher level care; monitoring may be needed for 24–48 hours.
    - Use aeromedical evacuation with caution and careful monitoring.
    - Isolated tympanic membrane rupture may not require emergency evacuation.

Dental Field Care

Clinical Condition

Evaluation and temporizing management of multiple dental problems that can occur in the field setting

Signs and Symptoms

DENTAL INJURY	Signs and Symptoms	Treatment Notes
CONTUSION	Damage to periodontal ligament only. Possible color change (if wound is old). Pulp may die. Discoloration will not disappear. Tooth is not loose but tender	Avoid manipulation Sympathy Bruising does not go away without bleaching by dentist
Craze or crack	Damage to structure of hard tissue. No loss of structure or tissue. Can penetrate enamel to dentin making tooth sensitive to temperature	Paint crack with cavity varnish. Reapply every 24 hours
Fracture	Chip from enamel lost Usually not painful	Paint with oil of clove Cover with stomahesive
Fracture w/no pulp exposed		Paint with oil of clove Cover with stomahesive
Fracture w/pulp exposed		Paint with oil of clove Cover with stomahesive See dentist in 24-48 hours
Extrusion	Tooth coming out of socket and displaced	Immediate care gives best results Force tooth back into socket Secure with stomahesive
Lateral or Buccal Displacement		Replace tooth and compress edge Secure with stomahesive
Intrusion	Tooth forced deeper into the socket	Tough Luck

Avulsion	Tooth totally removed from socket	Immediate treatment gives best results Keep root moist to keep periodontal ligament alive Clean gently Replace in socket Secure with stomahesive May need antibiotics (penicillin)
Avulsion w/ fracture	Usually root fracture	Replace. Secure if able If not keep root moist under patient tongue, in milk, saline, even plain water If root is fractured, tooth will usually die, need root canal, but can still be replaced May need antibiotics (penicillin)
DENTAL DISEASE	**Signs and Symptoms**	**Treatment Notes**
CAVITY	Tooth has hole in enamel cupping over destroyed dentin. Usually discolored dentin Outside of tooth usually not tender to touch	May put cotton plug in hole soaked with oil of clove Reapply oil of clove often to maintain pain control
ABSCESS	Tooth tender to touch Gum and bone also tender Usually swollen, possible drainage below tooth no pain if draining Tender lymph nodes	Gargle with salt water Toothpick poke and express fluid, f/u with salt water Motrin 800mg q6-8hrs prn. ***swollen face, obliterating normal facial appearance especially upper front teeth canine to canine need immediate evacuation***

Treatment

1. General Guidelines
    a. Record your observations of the injury
    b. Examine the surrounding tissues for other injury or missing pieces
    c. TEMPORARY treatment only
    d. Will not make pain free – up as soon as practical
    e. Refer to dentist for follow – up as soon as practical
    f. "Police the area", clean up excess temporary cement from teeth and gums to prevent periodontal abscess formation
2. Fractured Tooth Repair
    a. Remove fractured piece. Can be re-cemented with superglue, should last 2-3 days
    b. Place small rolls of gauze to hold lip away
    c. Apply Eugenol (oil of cloves) on broken surface
    d. Cover broken surface with dental cement
        i. Use premixed dental cement from commercial kit ***or***
        ii. Mix zinc oxide powder and eugenol in to putty-paste. The consistency of the paste is important. You should be able to "roll it into a ball."
    e. Keep dry 10 minutes and allow to harden. Isolation is the key.
    f. Smooth off any corners as cements hardens.
    g. May put wax paper or plastic over surface and allow gentle bite if occlusive surface is involved
    h. Steps (d) thru (g) can also be followed to place a temporary filling
3. Stomadhesive Use: Stomadhesive will work well for 4-6 hours while awake and 8-10 hours while sleeping.
    a. Identify area to affix stomadhesive.
    b. Use rolls of gauze between facial tissue and teeth on the lower front, and upper lateral cheeks mid-way between the front and back teeth to minimize moisture.
    c. Cut a piece of stomadhesive just large enough to cover surface for localized tenderness, or large enough to splint three teeth [one to either side of damaged tooth] in subluxation or other cases needing splinting.
    d. Dry area.
    e. Apply stomadhesive to area.
    f. Use pointed instrument or spatula to gently push the stoma adhesive into the tooth to mold it to the general shape of the joints between teeth or to contours.
    g. Have patient bite down on wax paper or plastic cover to smooth bite surface.

HIV Post-Exposure Prophylaxis (HIV PEP)

For maximum benefit, HIV PEP should be instituted where indicated within 2 hours of exposure.

Clinical Condition

High-risk body fluid exposure from another individual

Signs and Symptoms

High risk exposures include:

1. Percutaneous injury (needlestick or other contaminated penetrating injury)
2. Contact of body fluids from person at high risk for HIV on non-intact skin, eye or mucus membrane

Treatment

1. Immediately wash area with soap and water or other available disinfectant.
2. Obtain advanced medical care promptly to obtain:
    a. rapid HIV testing of source exposure or professional medical evaluation to determine risk of exposure
    b. HIV PEP in situations where source exposure testing is positive for HIV or in high risk situations where rapid HIV testing of source is not possible
    c. blood tests to document patient's baseline HIV and hepatitis status
    d. counseling on short and long term implications of exposure
3. Note that HIV PEP has significant side-effect profile including potentially debilitating nausea/vomiting.

Pediatric Normal Vital Signs

Pediatric systolic blood pressure is roughly 80 + twice the patient's age.			
Age	Pulse (bpm)	Respirations (breaths/min)	Blood Pressure (mm Hg)
Newborn	120-160	40-60	80/40
1 year	80-140	30-40	82/44
3 years	80-120	25-30	86/50
5 years	70-115	20-25	90/52
7 years	70-115	20-25	94/54
10 years	70-115	15-20	100/60
15 years	70-90	15-20	110/64
Adult	60-80	8-12	120/80

Pediatric Airway Stridor

Clinical Condition

Upper airway obstruction in a child

Signs and Symptoms

1. High-pitched seal bark
2. Respiratory distress with clear lungs
3. Accessory muscle use
4. Tripod position of comfort
5. Anxious appearance

Treatment

1. If adequate ventilation, let child assume position of comfort.
2. Oxygen: optimal treatment for patients with stridor is cool moist air at the highest possible oxygen concentration (allow parent to assist in administration).
3. Monitor pulse oximetry, if available.
4. Request EMS support, if available.
5. If foreign body is suspected, follow AHA protocol.

Note: If child has inspiratory stridor, especially if leaning forward or in the sniffing position, leave child in position of comfort.

Warning: Do not attempt any procedure or maneuver (including examination of the oropharynx, which may increase the child's anxiety and thereby raise the chances of laryngospasm) unless absolutely necessary to preserve the airway.

6. Open airway as required and use PPV if inadequate ventilation. Epiglottitis may require forceful ventilation, including closure of pop-off valve on BVM, and use of Sellick's maneuver to prevent gastric distention.
7. Constantly monitor airway for patency in any unconscious child.
8. Advanced airway, if needed.
9. Provide Racemic Epinephrine 1:1000 Nebulizer at 0.05mg/kg dose in NS for total of 3cc.
10. Epinephrine (1:1000) 0.01 mg/kg SC (this is 0.01 mL/kg) to a maximum of 0.3 mg/dose for severe stridor.
11. Establish IV access
12. Place on cardiac monitor, if available.

Pediatric Respiratory Distress

Clinical Condition

Lung-based breathing problem in a child

Signs and Symptoms

1. Dyspnea
2. Difficulty speaking in full sentences
3. Wheezing
4. Accessory muscle use
5. Tripod position of comfort
6. Anxious appearance

Treatment

Caution: Respiratory distress may be due to multiple other causes besides lung-based problems including airway obstruction, anaphylaxis, and pneumothorax, for which other treatment may be indicated.

1. Oxygen as needed, via NRB.
2. If needed, assist ventilation with PPV using 100% oxygen.
3. Monitor pulse oximetry, if available.
4. Request EMS support, if available.
5. Assist patient with self-administered doses of their metered-dose inhaler per patient's written prescription, if available.
6. Albuterol 2.5 mg by nebulization (use either 3 mL premix or 0.5 mL of 0.5% solution mixed in 3 mL of normal saline) or 2 puffs, 1–2 minutes apart, via metered-dose inhaler with spacer. May repeat until patient clinically improves or becomes tremulous.
7. Epinephrine (1:1000) 0.01 mg/kg SC (this is 0.01 mL/kg) to a maximum of 0.3 mg/dose for severe respiratory distress.
8. Place on cardiac monitor, if available.
9. Advanced airway if necessary.
10. Establish IV access.

Pediatric Respiratory Arrest

Clinical Condition

Cessation of breathing from respiratory failure, but still with palpable pulse

Signs and Symptoms

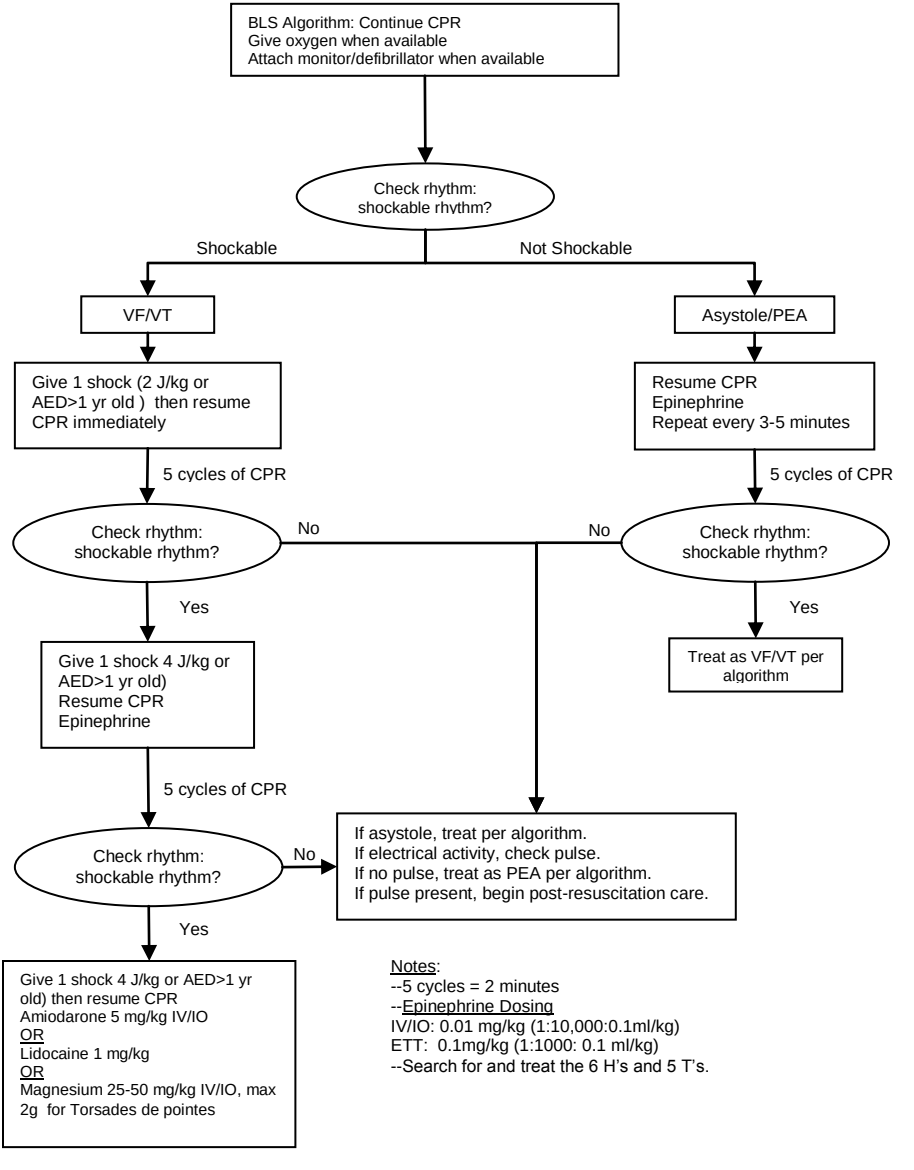
1. Absence of breathing
2. Presence of pulse
3. Unresponsive state

Treatment

1. Follow AHA respiratory arrest procedure utilizing 100% oxygen for ventilation. Use the AHA foreign body obstructed airway procedure as necessary.
2. Request EMS support, if available.
3. Basic Airway Maneuvers provide the foundation of airway management in pediatric patients (e.g. NPA, OPA, BVM).
4. Advanced airway, if needed. Rescue Airway devices are the preferred advanced airway approach in pediatric patients (e.g. King LT-D).
5. Place on cardiac monitor, if available.
6. Establish IV access.

Note: The algorithm for pediatric cardiac arrest on the following page reflects CONTOMS interpretation of the AHA PALS guidelines for rapid application in the tactical pre-hospital setting.

Pediatric Cardiac Arrest



Pediatric Shock

Clinical Condition
Cardiopulmonary collapse in a child

Signs and Symptoms
Pediatric shock is well established before the appearance of classic signs and symptoms. Depending on environmental conditions, the earliest sign may be delayed capillary refill. This may also be accompanied by altered level of consciousness, rising pulse, and increasing respiratory rate. By the time blood pressure drops, death is near.

Treatment
1. Hemorrhage control, as required.
2. 100% Oxygen via NRB.
3. Monitor pulse oximetry, if available.
4. Keep child warm and dry.
5. Request EMS support, if available.
6. Advanced airway, if needed.
7. Place on cardiac monitor, if available.
8. Establish IV/IO access.
9. Administer 20-mL/kg bolus of fluid (NS or LR) IV or IO (may repeat one time).
10. Check a finger stick blood sugar in any child with altered mental status or shock.
11. Contact medical control for additional assistance.

Pediatric Altered Mental Status

Clinical Condition

Change in level of functioning from age-appropriate baseline

Signs and Symptoms

1. Alert but somnolent or otherwise exhibiting decreased level of functioning
2. Responds only to verbal stimuli, painful stimuli or is minimally responsive
3. Evidence of trauma, drug use, diabetes, or alcohol/drug use

Treatment

1. Oxygen via NRB and position airway. Assist ventilation, if needed.
2. Monitor pulse oximetry, if available.
3. Spinal immobilization, if indicated.
4. Request EMS support, if available.
5. Attempt to identify cause.
6. Advanced airway if needed.
7. Place on cardiac monitor, if available.
8. Establish IV access.
9. Perform blood glucose check by an approved means, if available.
10. Administer naloxone (Narcan) (0.1-1.0 mg/kg, up to 10 mg) IV, ET, or IO.
11. Administer dextrose 25% for blood sugar <80 mg/dL or if unable to perform blood glucose check. Dilute 100 mL of D_{50} with 100 mL NS or use pre-mix, then give 2–4 mL/kg IV/IO up to 40 kg. If >40 kg, use adult dose of D_{50}.
12. Glucagon 0.5 mg IM (if IV/IO access is unavailable for administration of dextrose).
    Warning: If coma is secondary to trauma, without the possibility of hypoglycemia, do not give dextrose or glucagon.

Pediatric Seizures

Clinical Condition

A state of altered brain electrical activity in a child

Signs or Symptoms

1. Persistent staring (“absence seizures”)
2. All-body shaking, twitching or spasms (“grand mal seizures”)
3. Focal extremity shaking, twitching or spasms (“petit mal seizures”)
4. Altered level of consciousness
5. Amnestic after event with confusion (“post-ictal state”)

Treatment

1. Open, protect, and maintain airway.
2. Spinal immobilization, if indicated.
3. Oxygen via NRB.
4. Assist respiration, if needed.
5. Protect the patient from self-injury.
6. Advanced airway, if needed.
7. Establish IV access.
8. Obtain core temperature, if possible.
9. Place on cardiac monitor, if available.
10. Perform blood glucose check by an approved method, if available.
11. For prolonged or status seizures, consider the following:
    - Diazepam (Valium) 0.2 mg/kg IV/IO (or 0.4 mg/kg ET followed by a saline flush) up to maximum 10 mg.
    - Diazepam (Valium) 0.5 mg/kg rectally via well-lubricated, needleless plastic IV catheter up to maximum 10 mg.
    - Dextrose 25% (dilute 100 mL of D50 with 100 mL NS or use pre-mix) 2–4 mL/kg IV/IO.
    - Glucagon 0.5 mg IM (if IV/IO access is unavailable for administration of dextrose).
12. Contact medical control if seizure activity persists.

Warning: If seizure is secondary to trauma, without the possibility of hypoglycemia, do not give dextrose or glucagon.

K-9 Baseline Screening Exam

Clinical Condition

Brief screening exam for well-appearing K-9 conducted prior to onset of work period

Signs and Symptoms

1. Normal K-9 Vital Signs
   a. Temperature: 100-102.5 F (rectal)
   b. Pulse: 60-80 bpm (femoral artery inside rear thigh)
   c. Respirations: 10-40 bpm
2. Hydration Check
   a. Capillary Refill: <2 sec (cheek or gingiva)
   b. Mucus Membranes: pink
   c. Nostrils/Mouth: wet
   d. Skin of Neck: When pulled up, returns to normal position in 1-2 seconds.
3. Paws Check
   a. Lacerations
   b. Foreign Bodies

Treatment

1. For vital sign abnormalities, go to K-9 First Aid Protocol.
2. For evidence of dehydration or elective pre-hydration in anticipation of severe working conditions, consider the following options:
   a. Oral rehydration with pedialyte
   b. SQ Hydration: Instill 5-10 ml/pound or 500-1000ml Normal Saline at the SQ site between the shoulder blades. If large hard nodules occur, consider inserting another needle and distributing the fluid more evenly across the neck area.
   c. IV Hydration: Instill 5-10 ml/pound or 500-1000ml at IV site in foreleg.
3. For injuries to the paws:
   a. Clean with dilute soap and water.
   b. Dress with layers of gauze around the pad held in place with a gentle athletic wrap.

K-9 First Aid

Clinical Condition

An acutely injured or ill K9 requiring immediate medical attention in the absence of trained veterinary providers

Signs and Symptoms

1. Acute Medical Illness
   a. Choking: evidence of airway obstruction
   b. Respiratory Distress: elevated respiratory rate, panting, ineffective work of breathing
   c. Cardiac Arrest: absence of pulse and breathing
   d. Dehydration: lack of skin elasticity, dry/sticky gums, too much/too little urination, lethargy, delay in cap refill
   e. Gastric Dilatation Volvulus (Bloat): life-threatening condition where dog's stomach flips and herniates leading to drooling, retching without vomiting, restless wandering, bloated abdomen, listless, signs of pain
   f. Heat Stroke: recent activity, temperature>106, pale gums, rapid/shallow breathing, weak, uncoordinated, collapse, seizures, vomiting/diarrhea
   g. Poison Ingestion: history or witnessed ingestion with signs/symptoms variable based on toxin
2. Acute Traumatic Injury
   a. Blunt
   b. Penetrating
   c. Blast
3. Shock
   a. Drop in body temperature
   b. Shivering
   c. Listlessness
   d. Weakness
   e. Cold feet and legs
   f. Pale skin and mucus membranes
   g. Faint, weak pulse

Treatment

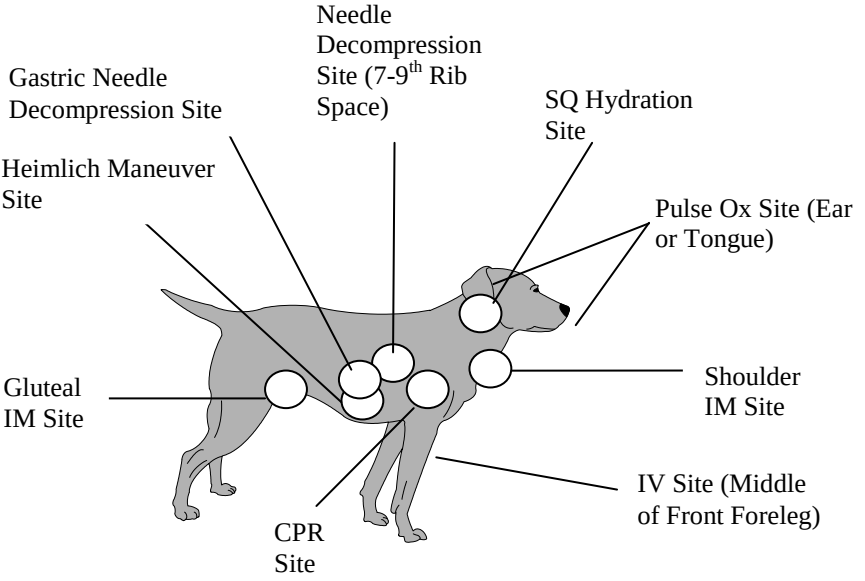
1. Safe Handling: Work with handler if available to ensure that dog does not bite. Always muzzle a dog when providing care.
   a. Basket muzzle is best.
   b. Commercial mesh muzzle is alternative.
   c. Improvised muzzle using wrapped kerlix tied behind head or leash.

2. X—eXsanguinating Hemorrhage
   a. Many tourniquets do NOT work effectively on K-9's because of the limited circumference of the legs.
   b. Consider using tightly wrapped ACE bandages, pressure dressing or modified CAT tourniquet with the plastic ribs removed.
   c. Hemostatic agents have been shown to be effective on K-9's.
3. A—Airway
   a. If a K-9 is having airway difficulty, use positional control procedures but do NOT apply a muzzle. Hold the dog's neck with one arm, the body with the other and lean to hold the dog down.
   b. Choking
      i. If a dog is choking but moving air, consider elevating their rear feet (like a wheel barrow).
      ii. If the dog stops moving air, start the Heimlich Maneuver by finding the area where the ribs and abdomen meet. Forcefully pull upward until the dog passes the object or goes unconscious.
      iii. If dog goes unconscious, start CPR.
   c. Basic Airway Management
      i. Carefully pull tongue out of the dog's mouth.
      ii. Make sure that the neck is reasonably straight and in-line with the head. Do not hyperextend neck in setting of neck trauma.
      iii. Inspect airway by looking into the mouth and down the throat for foreign objects. Reach and remove visible foreign objects.
      iv. Dogs do not tolerate NPA airways well.
   d. Advanced Airway Intubation
      i. Do NOT attempt intubation in a conscious dog.
      ii. Utilize Macintosh blades with 7-10 ETT.
      iii. Secure tube.
      iv. Provide respirations at 10/min.
4. B—Breathing
   a. Respiratory Distress
      i. Do NOT muzzle if dog rapidly panting or breathing rapidly.
      ii. Provide oxygen by blowby with human mask or by Pet Oxygen Mask.
   b. Respiratory Arrest
      i. Ventilate K-9 by closing mouth and performing mouth-to-nose respirations.
      ii. Rescue Breathing: 1 breath/5 seconds.
      iii. Monitor for pulse.
   c. Open Chest Wound
      i. Shave the site and apply chest seal.
      ii. Place dog on injured side down.
   d. Tension Pneumothorax
      i. Place dog in lateral recumbent position.
      ii. Perform needle decompression with 14-gauge needle at the indicated site.

5. C—Circulation
   a. Cardiac Arrest
      i. CPR: Perform 100-120 chest compressions/minute at a depth of 1/3 to ½ chest width at the high point of the dog's chest with a compression to ventilation ratio of 30:2. Perform CPR in 2-minute cycles, switching the "compressor" each cycle.
      ii. Advanced Cardiac Care: Consider use of defibrillator and administration of IV epinephrine every 3-5 minutes.
      iii. Consider period of hypothermia once pulse regained.
      iv. Obtain advanced veterinary care when feasible.
   b. Shock
      i. Control all external bleeding.
      ii. Warm with blankets.
      iii. Administer oxygen by blowby or by Pet Oxygen Mask.
      iv. Administer IV fluid: Instill 5-10 ml/pound or 500-1000ml at IV site in foreleg.
      v. Obtain advanced veterinary care when feasible.
6. D—Decontamination/Drug
   a. Contact Animal Poison Control (888-426-4435) for assistance.
   b. Only induce vomiting if substance swallowed is not caustic, sharp or swallowed <1/2 hour ago.
   c. Common remedies
      i. Hydrogen Peroxide (3%): 1 teaspoon/10 pounds orally, may repeat every 15-30 minutes for a maximum of 3 times to induce vomiting.
      ii. Compressed Activated Charcoal: 1.5 gm tablet per 10 pounds to bind toxins.

7. E—Environment
   a. Hypothermia: Keep dog warm.
   b. Heat Stroke
      i. Seek shade or air conditioning.
      ii. Wet down or submerge in cool water, then fan.
      iii. Put alcohol on pads.
      iv. Place cool packs under groin and arm pits.
      v. Administer IV fluid: Instill 5-10 ml/pound or 500-1000ml at IV site in foreleg.
      vi. Continually monitor the dog until temperature drops to below 103 F.
8. Gastric Dilatation Volvulus (Bloat)
   a. Orogastric Tube Insertion
      i. Mark the distance from the incisors to the xiphoid with a piece of tape on the orogastric tube. This distance indicates the maximum length of the tube that can be safely passed.
      ii. Lubricate the tube and gently pass it down the dog's throat, ensuring that it does not have air coming in/out as this finding means that the tube has gone into the trachea.
      iii. Seek advanced care for this emergency condition.
   b. Gastric Needle Decompression
      i. Procedure is performed on right side in the area of the greatest tympany ("ping") located caudal (toward the tail) to the last rib.
      ii. Clip and aseptically prepare the site.
      iii. Insert 16-gauge or 18-gauge needle at the site.
      iv. Seek advanced care for this emergency condition.

K-9 Procedure Sites



Reference

Non-EMS System Medical Interveners

Situations may arise when bona fide medical providers who are not part of your agency's or the local community's EMS system are present at the scene of an emergency. In an effort to establish your authority without delaying patient care, the following information should be presented to anyone rendering or attempting to render medical assistance:

To All Non-EMS Medical Providers,
Thank you for your offer of assistance. We are federal law enforcement emergency medical technicians and/or paramedics operating under the Medical Oversight of _____.
If you are currently providing patient care, you will be relinquishing care to us and our Medical Oversight physician. If you are not currently providing care, please be advised that no individual should intervene in the care of this patient unless the individual is:

1. Requested to assist by us.

Or

2. Willing and capable of providing a higher level of emergency medical care at the scene.
If you are the patient's physician, physician assistant, or nurse practitioner, we will work with you to the extent that our protocols and scope of practice allow.

If you wish to assume responsibility for patient care, you must be licensed or authorized to practice within this jurisdiction. We will assist you to the extent that our protocols and scope of practice allow. You must accompany the patient to the hospital, and sign the patient's medical record.

Thank you for your assistance and cooperation.
Sincerely,

Glasgow Coma Scale

The Glasgow Coma Scale (GCS) provides a practical means for monitoring changes in the level of consciousness. It is based upon eye opening and verbal and motor responses. If each response is given a number (high for normal, low for impaired), the total responsiveness of the patient can be expressed by the sum of the numbers. Because the scale is physiologic, it is dynamic and subject to change as the patient's condition changes. Therefore it must be repeated frequently. The lowest score is 3 and the highest is 15. When using the scale, it is best to *describe* each response rather than just using numbers. A painful stimulus is rubbing the sternum with the knuckles or pinching an extremity.

	Response to Stimuli	Glasgow Score
Eyes open:	Spontaneously	4
	To voice	3
	To pain	2
	None	1
Motor Response:	Obeys command	6
	Localizes pain	5
	Withdraws from pain	4
	Flexion	3
	Extension	2
	None	1
Verbal Response:	Oriented	5
	Confused	4
	Inappropriate words	3
	Incomprehensible words	2
	None	1

Provider Scope of Training Matrix

The following tables provide a broad overview of the scope of training for TEMS providers at different levels of medical training. These tables provide the framework for baseline required equipment, skill development, and medication administration. The exact items selected for the required equipment categories will be determined by the Medical Director but are subject to change as new tools and information become available. The exact medications selected and approved for prehospital use in the basic, parenteral, and ACLS formularies will also likely evolve as new therapies and applications are discovered. The skill sets listed for each provider level are a guide for training and interpretation of the protocols. As a fundamental rule, individual providers should only perform those skills for which they have been properly trained and credentialed. Certain special situations may require providers to be trained in skills outside of their ordinary scope; these situations will be coordinated by the Medical Director on a case-by-case basis.

Provider Scope of Training Matrix

Topic	TFR	EMT-B	EMT-I	EMT-P	EMT-T
Required Medic Equipment					
General items					
Medic Bag	✓	✓	✓	✓	✓
Hand Sanitizer	✓	✓	✓	✓	
Trauma Shears	✓	✓	✓	✓	✓
Flashlight or headlight	✓	✓	✓	✓	✓
Goggles and Gloves	✓	✓	✓	✓	✓
Rescue rope					✓
Chemlights	✓	✓	✓	✓	✓
Emergency blanket	✓	✓	✓	✓	✓
X					
Tourniquet	✓	✓	✓	✓	✓
A					
Nasopharyngeal airway	✓	✓	✓	✓	✓
Oropharyngeal airway	✓	✓	✓	✓	
Non-rebreather mask	✓	✓	✓	✓	
Pocket mask	✓	✓	✓	✓	
Bag-valve-mask	✓	✓	✓	✓	✓
Rescue airway device		✓	✓	✓	✓
Intubation set			✓	✓	✓
Suction unit	✓	✓	✓	✓	
B					
Stethoscope		✓	✓	✓	
14-Gauge needles		✓	✓	✓	✓
Occlusive dressing/Chest Seal	✓	✓	✓	✓	✓
Pulse oximeter		✓	✓	✓	
C					

Trauma Dressings	✓	✓	✓	✓	✓
Hemostatic agent	✓	✓	✓	✓	✓
IV set			✓	✓	
IO device			✓	✓	✓
Blood pressure cuff		✓	✓	✓	
D					
AED	✓	✓	✓	✓	
E					
SAM splint	✓	✓	✓	✓	✓
Portable stretcher	✓	✓	✓	✓	✓
Thermometer		✓	✓	✓	
Specialty Kits					
Burn kit	✓	✓	✓	✓	
Dental kit					✓
Eye kit	✓	✓	✓	✓	
Wound care kit	✓	✓	✓	✓	
Provider Skill Sets					
X					
Tourniquet application	✓	✓	✓	✓	✓
A					
Positional maneuvers	✓	✓	✓	✓	
Airway adjuncts	✓	✓	✓	✓	✓
Pocket mask	✓	✓	✓	✓	
Bag-valve-mask	✓	✓	✓	✓	
Choking sequence	✓	✓	✓	✓	
Rescue airway		✓	✓	✓	✓
Intubation			✓	✓	
B					
Rescue breathing	✓	✓	✓	✓	
Stethoscope auscultation		✓	✓	✓	
Limited decompression		✓			✓
Standard decompression			✓	✓	
Oxygen administration	✓	✓	✓	✓	
C					
CPR	✓	✓	✓	✓	
Bleeding control	✓	✓	✓	✓	✓
Hemostatic agents	✓	✓	✓	✓	✓
Shock position	✓	✓	✓	✓	✓
IV access/fluid			✓	✓	
IO access/fluid			✓	✓	✓
D					
AED use	✓	✓	✓	✓	
ACLS care				✓	
Field decontamination	✓	✓	✓	✓	✓
MARK I administration	✓	✓	✓	✓	✓
AVPU Scale	✓	✓	✓	✓	✓
GCS Scale		✓	✓	✓	

E					
Splinting	✓	✓	✓	✓	✓
Cooling techniques	✓	✓	✓	✓	✓
Warming techniques	✓	✓	✓	✓	✓
Temperature measurement		✓	✓	✓	
F					
Left-side transport position		✓	✓	✓	
Emergency delivery		✓	✓	✓	
G					
General wound care	✓	✓	✓	✓	✓
Medication Administration					
Assist patient and oxygen	✓	✓	✓	✓	
Basic Drug Formulary		✓	✓	✓	
Select Parenteral Medications			✓	✓	
ACLS Medications				✓	

Notes on Medication Administration:

1. Assist Patient: Assure the five rights (right patient, right medication, right date, right dose, right route) then administer.

2. Basic Drug Formulary: Epi-Pen, Albuterol MDI, Oxygen, Aspirin, Glucose

3. Select Parenteral Medications: Select medications given by IV/IO/IM route

4. ACLS Medications: Specified advanced cardiac protocol medications

Part 3: TEMS Kits Sample Packing Lists

1. SALINE LOCK KIT:

EXP	COMMON NAME	QTY	COMMENTS
	Small Zip-Lock Bag (or vacum sealed bag)	1	
	20G X 1.5" Catheter/Needle	2	
	22G X 1.5" Catheter/Needle	2	
	Alcohol Pad	3	
	Constricting Band	1	
	2x2 Sterile Sponge	1	
	Saline Plug, Locking	1	
	Syringe, 10cc Luer-Lock Tip	1	
	18G X 1.5" Needle, Hypodermic	1	
	Tega Derm	1	
	Pill Bag	1	
	1" Tape	1	
	0.9% Sodium Chloride, Inj, 20ml	1	

2. IV KIT: Contents will be taped to the outside of the 1000cc Bag of NS in a sealed Zip-Lock Bag or Vacuum Sealed Bag.

EXP	COMMON NAME	QTY	COMMENTS
	IV Solution Set, 10 drops/ml	1	
	Saline Lock Kit	1	
	500 or 1000cc Bag of 0.9% Sodium Chloride Injection, USP NS	1	
	Small Zip Lock Bag (or Vacuum Sealed bag)	1	

3. MINOR WOUND KIT:

EXP	COMMON NAME	QTY	COMMENTS
	1 Quart zip-lock bag (or vacuum sealed bag)	1	
	Triple Antibiotic Ointment (in small zip lock bag)	5	
	Alcohol Pad (in small zip lock bag)	5	
	Moleskin 12"	1	
	Band-Aids 3 X .75"	10	
	Syringe, 3cc w/22G Needle	1	
	Tape 1"	1	
	Sponge, 2x2 Sterile	10	
	Sponge, 4x4 Sterile	10	
	Betadine Scrub 0.5oz	2	
	Sterile Water 250cc Bottle	1	
	Steri-Strips	5	

4. MAJOR WOUND CARE KIT:

EXP	COMMON NAME	QTY	COMMENTS
	1 Gallon zip-lock bag (or vacum sealed bag)	1	
	Laceration Tray	1	
	Sterile Latex Surgical Gloves	1	
	Minor Wound Kit	1	Component List
	BD E-Z Scrub	1	
	Povidone Iodine Solution 1%, 0.5 oz	2	
	Syringe, 10ml, Luer-Loc Tip	4	
	18 G 1" Needle	2	
	22G 1" Needle	2	
	Lidocaine, Inj, 2%, 20ml	1	
	Lidocaine, Inj, 1%, Epinephrine, 20ml		
	Disposable Skin Stapler	1	
	Ethilon, Black Monofilament Nylon, 3.0, 18" Suture	2	
	Ethilon, Black Monofilament Nylon, 4.0, 18" Suture	2	
	Dermalon, Black Monofiliament Nylon, 5.0, 18" Suture	2	
	Dermalon, Black Monofiliament Nylon, 6.0, 18" Suture	2	
	Silk 0 Suture	2	
	Topical Skin Adhesive/Dermabond ProPen	1	
	Disposable Scalpel, Sterile	1	
	Hazardous-Waste Bag, Red	1	
	Sterile Water, 250cc	1	
	Staple Remover	1	
	16 G Angiocath	1	

5. TACMEDIC VEST KIT: The TACMEDIC VEST KIT packing list contains items the medic carries on his/her body without opening an M-5 bag or Resuscitation kit. The intent of this packing list is to provide all immediate initial care for a trauma casualty without opening external bags and equipment.

EXP	COMMON NAME	QTY	COMMENTS
	TACMEDIC VEST KIT	1	
	EXTRACTION EQUIPMENT		
	Rescue Rope w Carabiners	1	
	Seat Belt Cutter	1	
	EXSANGUINATING HEMORRHAGE		
	Combat Application Tourniquet	2	
	Hemostatic Bandage (Combat Gauze)	1	
	AIRWAY		
	Cricothyroidotomy Kit	1	
	Pocket Mask	1	
	Nasopharyngeal Airway, 28fr w/lubricant	1	
	BREATHING		
	14G / 3.5 inch Needle	2	
	Stethoscope	1	
	Chest Seal (Hyfin)	2	
	CIRCULATION		
	Emergency Trauma Dressing (H-Bandage)	2	
	Kerlex, Vacuum Sealed	1	
	DIAGNOSTIC & MONITORING		
	Finger Pulse Oximeter	1	
	MISCELLANEOUS		
	Black Talon Gloves	6	
	SureFire Helmet Light	1	
	Personal SureFire Handheld Light	1	
	Personal Duty Knife	1	
	Trauma Shears	1	
	Sharpie Marker (BLACK)	1	
	Chemical Light	1	
	Personal Survival Kit	1	

6. TACMEDIC PRIMARY AID BAG (M-5):

EXP	COMMON NAME	QTY	COMMENTS
	TACMEDIC AidBag M-5	1	
	EXSANGUINATING HEMORRHAGE		
	Combat Application Tourniquet	4	
	Hemostatic Dressing (Combat Gauze)	2	
	AIRWAY		
	Cricothyroidotomy Kit	1	
	Nasopharyngeal Airway, 28F w/Lubricant	3	
	King LT-D Supralaryngeal Airway size 4	1	
	Suction, Hand-Held (either Suction Easy or Squid)	1	
	Laryngoscope Handle w/batteries	1	
	Laryngoscope blade, MAC 4	1	
	Laryngoscope blade, MIL 3	1	
	Tracheal Tube, 6.0	1	
	Tracheal Tube, 7.0	1	
	Tracheal Tube, 7.5	1	
	Tracheal Tube, 8.0	1	
	Endotracheal Stylet, Large	1	
	Endotracheal Tube Holder	1	
	Easy Cap II, CO2 Detector	1	
	Syringe, 10cc	1	
	Oral Airway	1	
	Bag-Valve-Mask (Adult)	1	
	Bag-Valve-Mask (Pediatric)	1	
	Toomey 60cc Syringe w Tubing	1	
	Magill Forceps	1	
	BREATHING		
	14G / 3.5 inch Needle	2	
	Gauze, Petrolatum, 4x4	2	
	Chest Seal (Hyfin)	2	
	Stethoscope	1	
	CIRCULATION		
	Emergency Trauma Dressing (H-Bandage)	1	

	Emergency Trauma Dressing (Israeli) 6"x12"	1	
	Sponge, 4x4 Sterile	10	
	Kerlex, Vacuum Sealed	3	
	BIG Gun Intraosseous Infuser 15g ADULT	1	
	IV Kit	2	Component List
	Sharps Container	1	
	18 G Spinal Needle w Syringe	1	
	DIAGNOSTIC & MONITORING		
	BP Cuff	1	
	Pulse Oximeter	1	
	Blood Glucose Monitor	1	
	EXTREMITY IMMOBILIZATION		
	SAM Splint (Folded flat in the space designed for the CamelBack)	1	
	ACE Wrap, 4"	2	
	ACE Wrap, 6"	2	
	Traction Splint (Tactical KTD)	1	
	Cravat	1	
	MEDICATIONS		
	ProAir HFA (albuterol sulfate) aerosol	1	
	Epinephrine Auto Injector, .3mg, EpiPen	1	
	TACMEDIC Controlled Drug Kit	1	
	EVACUATION EQUIPMENT		
	Blizzard Bag Hypothermia Kit (Seasonal & Mission Dependent)	1	
	Emergency Space Blanket	1	
	Triage Card	5	
	Litter, Ranger Green	1	
	SPECIAL KITS		
	Dental Kit (dental cement, stomahesive, paper clip)	1	
	Minor Wound Care Kit	1	
	Eye Kit (eye wash, blue filter, flourescein strips)	1	
	MISCELLANEOUS		
	Black Talon Gloves	6	

	Tape, 2"	2	
	Antiseptic Handwash	1	
	Trauma Shears	1	
	Sharpie Marker (BLACK)	1	
	PenLight	1	
	Bite Stick	1	
	Light Stick, Chemical	2	
	Syringe, 5ml, 20g, 1/2 "	2	
	Surgical Gloves, Sterile, Size 8	1	
	Note Pad, Small	1	
	Patient Care Report	5	
	Ice Pack, Chemical	2	
	Pen	1	

7. RESUSCITATION KIT:

EXP	COMMON NAME	QTY	COMMENTS
	AED	1	
	BVM, Adult	1	
	Stethoscope	1	
	Nitroglycerin Spray	1	
	Diltiazem 25 mg/5ml IV	1	
	Levaquin 750mg IV	1	
	Epi-Pen	2	
	Emergency Blanket	1	
	Lidocaine 8mg/ml IV	1	
	IVF Rolls	3	
	EZ-IO set	1	
	BP Cuff	1	
	Pulse Oximeter	1	
	Laryngoscope Set	1	
	Triage Tag Set	1	
	Face Shield	1	
	ACLS Drug Kit	1	
	Sterile Gloves	2	
	Doudote Kits	3	
	Quicktrach	1	
	Pediatric Bulb Suction	1	
	King LT-D size 4	1	
	NPA	1	
	OPA	1	
	Endotracheal Tubes Set	1	
	Endotracheal Tube Stylet	1	
	Endotracheal Tube Holder	1	
	Biohazard Bags	5	
	BIG IO, Adult	1	
	Big IO, Pediatric	1	
	Nonsterile Gloves	2	
	Sharps shuttle	1	
	Pedi-BVM	1	

8. TACMEDIC CONTROLLED DRUG KIT:

EXP	COMMON NAME	QTY	COMMENTS
	Drug Case (Pelican or Otter)	1	
	Fentanyl Transmucosal Lozenge, 400mcg	2	
	Ketorolac Inj, 60mg (30mg/ml) (Toradol)	2	
	Diazepam Inj, 10mg	3	
	Morphine Sulfate Inj, 10mg	2	
	Ondansetron Inj, 4mg (Zofran)	1	
	Midazolam Inj, 5mg (Versed)	2	
	Oxycodone & Acetaminophen 5mg/325mg PO	10	
	Zolpidem Tartrate 10mg PO (Ambien)	10	
	Tubex Injector, Cartridge Unit	1	
	Syringe, 10cc Luer-Loc Tip	2	
	Sterile Water, Inj, 20cc	2	
	Needle, Hypo 18G/1.5"	2	

9. SICK CALL BOX (M15):

EXP	COMMON NAME	QTY	COMMENTS
	SICK CALL BOX (M15)	1	
	CRITICAL		
	Epinephrine 1:1000		
	Glucose Tablets		
	HEENT		
	Diphenhydramine 50 mg		
	Fexofenadine 60 mg		
	Loratadine 10 mg		
	Benzonatate 100 mg		
	CARDIAC		
	Aspirin 81 mg		
	Furosemide 40 mg		
	PULMONARY		
	Albuterol MDI		
	Ipratropium Bromide MDI		
	GASTROINTESTINAL		
	Cimetidine 400 mg		
	Ondansetron 8 mg		
	Phenergan 25mg/ml IV		
	Pepto-Bismol Tabs		
	Dicyclomine 20 mg		
	Loperamide 2 mg		
	Biscodyl 5 mg		
	PAIN CONTROL		
	Ibuprofen 800 mg		
	Acetaminophen 500 mg		
	Cyclobenzaprine 10 mg		
	ANTIBIOTICS		
	Azithromycin 250 mg		
	Levaquin 750 mg		
	Ciprofloxacin 500mg		

10. OXYGEN KIT:

EXP	COMMON NAME	QTY	COMMENTS
	Airway O2 Bag, Black	1	
	O2 Cylinder	1	
	High Pressure O2 Supply Hose with Suction Hose, Green	1	
	Positive Presure O2 Mask	1	
	Nasal Canula, Disposable	4	
	Mask, Non-Rebreather	4	
	Pulse Oximeter	1	
	OPA, Full Set	2	
	NPA, Full Set	2	
	Spider Straps, Black	1	
	Cervical Collar, OD Green	3	
	Tape, 2"	2	
	Suction, Portable handheld	1	
	Suction, replacement container	1	
	BVM, Pediatric	2	
	BVM, Adult	1	
	Stethoscope	1	
	Magill Forceps	1	
	Laryngoscope Set	1	
	Endotracheal Tube Set	1	
	Nonsterile Gloves	2	
	King LT-D	1	

11. SPECIAL EVENT PACK (SEP): SEP will also include 1 case of water for every 6 operators. NOTE: This is not the Operators primary water supply.

EXP	COMMON NAME	QTY	COMMENTS
	Pelican Case 1550	1	
	IV Kit	10	
	1000cc Bag of 0.9% Sodium Chloride Injection, USP NS	10	
	Small Zip Lock Bag (or Vacuum Sealed bag)	1	
	Pack, Chemical	1 Case	Heat or Cold, Climate Dependent
	Minor Wound Care Kit	2	
	Wound Care Kit	1	
	Oral Rehydration Salts Package	100	
	Bug Spray	2	
	Sun Block	2	
	Emergency Blankets	6	
	Tyvex Suits	4	
	MRE	2	
	Antiseptic Handwash	2	
	100 MPH Tape	1	
	Foot Powder	2	
	WBGT Thermometer	1	
	Glucose Tablets	10	
	Moleskin	1	
	Spray Bottles	2	

12. PERSONNEL BAG:

EXP	COMMON NAME	QTY	COMMENTS
	Buddy Bags	1 Box	
	Light Sticks, Chemical	12	
	Ice Packs, Chemical	8	
	Meals Ready to Eat (MRE)	4	
	Space Blankets	2	
	Sun block, Individual Packets	25	
	DEET, Individual Packets	25	
	Antiseptic Handwash	2	
	Toilet paper	2 rolls	
	Heat Pads, Chemical (winter bag)	6	
	Personal Heater (winter bag)	1	
	Batteries, "D Cell" (winter bag)	3	
	Charcoal Bricks (winter bag)	3	
	Water Beverage Mix, Lemon	1 Box	
	Lipstick, Antichap, Cold and Hot Climate	2	
	Sleeping Pad,	1	
	Survival Kit, Military	1	
	Trash bags, Large, Black	4	
	Camelback bladder, 100oz	2	
	Sheets, disposable, white	5	
	Gatorade	3	
	Foot Powder	2	
	100 MPH Tape	2	

13. K-9 DOWN KIT

EXP	COMMON NAME	QTY	COMMENTS
	K-9 Aid Bag	1	
	Drag Blanket	1	
	Emergency Blanket	1	
	IV Fluid NS 1000cc	2	
	IV Set-up Kits	2	
	Pedialyte Oral Solution	4	
	Pet Oxygen Mask	1	
	Intubation Set	1	
	Orogastric Tube	1	
	Gastric Needle Decompression Set	1	
	Nasal Airways	2	
	Chest Seals	2	
	Tourniquets	4	
	Bandages/Dressings	1 Box	
	Splints	2	
	Nail Clippers	1	
	Hair Clippers	1	
	Liver-flavored Aspirin	4	
	Pepto-Bismol	1	
	Rectal Thermometer	1	
	BP Cuff	1	
	Stethoscope	1	

ALPHABETICAL PROTOCOL INDEX

INDEX