MCKINLEY COUNTY EMS SYSTEM GUIDELINES Adopted by
GALLUP MEDSTAR AMBULANCE SERVICE
CITY OF GALLUP FIRE DEPARTMENT
MCKINLEY COUNTY FIRE AND EMS

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REV 8

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Signature:

These guidelines have been reviewed and approved for use by field EMS personnel by:

6/26/2024

Alexander Jenson, MD MPH — Date

McKinley County EMS Medical Director

Gallup Fire Department EMS Medical Director

MedStar Ambulance EMS Medical Director

INTRODUCTION

These pre-hospital treatment guidelines are a reflection, with some modifications, of the 2022 statewide guidelines that were developed to assist fire departments and EMS services throughout New Mexico in the development of local EMS medical protocols. They are the result of a collaborative effort by the EMS Bureau, Region I, Region II, Region III, and the J.O.E. and Medical Direction Committees and Local Medical Directors. These guidelines have been modified to meet specific service requirements within McKinley County, Gallup MedStar and City of Gallup and by all services that would be approving these guidelines. The focus of these guidelines is to provide a resource to clinical practice, maximize patient care, safety, and outcomes regardless of the existing resources and capabilities within an EMS system.

Where applicable, The National Association of State EMS Officials (NASEMSO) Model EMS Guidelines and the American Heart Association current Guidelines were utilized to ensure a more standardized approach to the practice of patient care now, and as experience dictates, adoption of future practices. The NASEMSO Model EMS clinical guidelines and AHA guidelines promote uniformity in prehospital care which, in turn, promotes more consistently skilled practice as EMS providers move across healthcare systems.

Scene safety, patient condition, environmental problems, and time involved in implementing emergency care should be taken into Consideration. On all patient encounters appropriate personal protective equipment should be utilized. If it becomes necessary to vary from established service protocols, direct Contact with Medical Control and good documentation will be your best defense should litigation occur.

Suggested drug dosages are listed after each drug and also contained in the Drug Guidelines section. These Guidelines should be flexible enough to be used as "Standing Orders" or allow for Online Medical Control. In all cases, the receiving physician or emergency department should be Contacted as soon as circumstances permit to allow for physician input into the EMT's therapy, and provide the receiving facility with adequate preparation time.

Vital Signs should be monitored and re-evaluated frequently (typically every five minutes), and IV flow rates re-adjusted as indicated. If placement is unsuccessful after two attempts, or peripheral venipuncture is not possible due to a lack of suitable veins, consider external jugular vein or intraosseous (IO) cannulation.

IV ACCESS:

Most EMS patients do not require IV access. IV access, although routinely performed, is generally not needed in many circumstances and may delay transport. Deaths have occurred from phlebitis from IV access, even locally. This is not a benign procedure and is not to be taken lightly by either the Paramedic or Intermediate. The Patient needs to be either symptomatic/unstable or in actual danger of becoming symptomatic or unstable. ALL INVASIVE PROCEDURES CAUSE PAIN AND ARE POTENTIALLY DANGEROUS.

With this said, Cannulation via the most appropriate and quickest means when warranted is necessary using the proper procedures to remove as much risk as possible.

Pediatric peripheral and intraosseous (IO) cannulation may be initiated by the EMT-I or EMT-P, however, some words of caution are in order. Pediatric IVs are often extremely difficult to start, and it is recommended that unless the need for an IV is clearly indicated, it should not be attempted. The decision to start a Pediatric IV in the field should be based on the clinical importance of IV therapy in the pre-hospital setting. Consultation with Medical Control is strongly recommended.

However if the emergency warrants and no peripheral IV sites are immediately identified or successful, the EMT-I and EMT-P have the option for tibia IO access, which should not be delayed. EMT Intermediate and Paramedic intraosseous (IO) cannulation of the ADULT (EZ- IO and similar devices) Tibia and Humerus is authorized under these guidelines. Again a word of caution, all efforts to peripherally cannulate within a reasonable time should be exhausted, however cannulation should not be delayed if necessary, even using these devices.

All IV medications should ONLY go through IV/IO access that has been established by the provider in the field. Using pre-existing access points (PICC lines, Central Ports, Dialysis Access) is dangerous, and strictly prohibited.

If IV therapy is being initiated, the venipuncture should be made as distally as possible except in cases of severe trauma or shock where a more proximal site (ideally antecubital) will facilitate resuscitation. The hand or forearm, antecubital fossa, upper arm, leg and foot should be considered in that order of preference. The choice of venipuncture site is extremely important when caring for patients requiring multiple intravenous lines for long term therapy. Avoid starting IVs in paralyzed or injured extremities.

Recommended "field" flow rates are:
1. KVO or TKO - Keep open rate, very slow IV drip (10-20 cc/hr).
2. Intermediate rate - To be titrated to patient's blood pressure to maintain end organ perfusion.
3. Wide-open rate - as fast as possible, also consider rapid infusion devices.

DEFIBRILLATION:

Defibrillation is possible for all levels of pre-hospital providers and, Public Access Defibrillation (PAD) for targeted rescuers has been legislated in New Mexico. National guidelines advocate teaching the AED in professional and lay public courses. This may result in situations where, upon arrival on scene, a patient has been defibrillated by a bystander. or other professional (police officer, prison guard, hotel security, etc.) which will require an organized transfer of patient care. This must involve an exchange of information between the bystander and healthcare provider to determine what course of action should be taken next.

ADVANCED AIRWAY DEVICES:

Laryngeal, supra-glottic and multi-lumen airway devices should be used on patients who are unconscious, in need of ventilatory assistance and have no gag reflex. Improper use of these devices will result in inadequate oxygen exchange leading to anoxia and possibly death. Proper placement of the device should result in good bilateral breath sounds and symmetric rise in the chest during ventilations. If breath sounds are not present, immediate re-evaluation of tube placement must be performed. If breath sounds are still not present, immediately remove the device and re-insert or use an alternative airway adjunct. The goal of airway management is to provide an optimal airway to allow for adequate oxygenation to the patient, regardless of the device used.

Due to the improved first-pass success and improved neuro-intact survival in cardiac arrest, the use of I-Gel supraglottic airways are preferred over the King Airway.

Endotracheal intubation is only allowed for patients over the age of 12.

Attempts at endotracheal intubation during CPR have been associated with unrecognized tube misplacement or displacement as well as prolonged interruptions in chest compression. Inadequate training, lack of experience, patient physiology (e.g., low pulmonary blood flow, gastric contents in the trachea, airway obstruction), and patient movement may contribute to tube misplacement. After correct tube placement, tube displacement or obstruction may develop. In addition to auscultation of the lungs and stomach, several methods (e.g., waveform capnography, CO2 detection devices, esophageal detector device, tracheal ultrasound, fiberoptic bronchoscopy) have been proposed to confirm successful tracheal intubation in adults during cardiac arrest.

CAPNOGRAPHY MUST BE USED ON ALL advanced airways and ETCO2 documented.

The Inclusion of the King Airway at all levels has allowed the Paramedic to use a Bougie Tube to exchange the airway device if necessary without the use of direct Laryngoscopy, however at no time should a Paramedic change an airway that is functioning unless special circumstances exist.

NARCOTIC PAIN MANAGEMENT:

Designation of Condition: Standing orders for controlled substances are found throughout this document. Listed below is the framework of intent for EMT-Paramedics and EMT-Intermediates to administer controlled substances within their Scope of Practice. EMT- I may administer narcotic analgesia using the guidelines below. If the specific patient situation falls outside these guidelines, then the EMT-I must contact online medical control.

However the McKinley County Medical Director also recognizes that communication with on-line medical control is not always possible in McKinley County and will allow very limited exceptions of EMT- Intermediates administering Narcotics under standing orders if communication has been attempted, but not possible. This must be well documented and will be strongly reviewed through the regional QA Board.

<u>Guidelines for Use (both EMT-I and EMT-P)</u>

1. Fentanyl is the preferred narcotic analgesia due to its limited cardiovascular involvement and short half life. Benzodiazepines are appropriate medications for agitation, but are NOT appropriate for pain relief.

2. Narcotic analgesics are generally given to a patient with isolated injuries and stable/normal vital signs or an assessment consistent with kidney stones or an isolated musculoskeletal etiology (i.e., fracture, severe sprain).

3. No narcotic analgesic or benzodiazepine should be given to any pregnant patient without first discussing the possible ramifications with on-line Medical Control.

4. Any administration outside this realm (items 1 - 3) should be done with on-line Medical Control.

5. If the patient becomes nauseated after administration of narcotic analgesics or benzodiazepines, consider administration of
ZOFRAN
Adult: 4mg VERY SLOW IVP (no less than 1 min)
PED: 0.1-mg/kg VERY SLOW IVP (no less than 1 min)

6. The use of narcotic analgesia and benzodiazepines together can create significant respiratory depression. NO PATIENT SHOULD RECEIVE BOTH A NARCOTIC AND A BENZODIAZEPINE WITHOUT EXPLICIT ONLINE MEDICAL DIRECTION.

<u>Guidelines for EMT-I Administration of Fentanyl WITHOUT online medical direction:</u>

Isolated extremity injury (musculoskeletal injury such as fracture or severe sprain).

AND ALL OF THE FOLLOWING CONDITIONS:

1. Stable and Normal vital signs (SBP >100, HR < 130)
2. Awake and alert without significant impairment (eg alcohol or drug intoxication). GCS 14 or 15.
3. No other sedating medication (ie benzodiazepines) have been administered.
4. Age >18 and < 65 and weight >50kg.

If all of these these criteria are met, the EMT-I may administer:

FENTANYL
Adult: 25 - 50 mcg IVP

If Fentanyl is not available or on backorder

MORPHINE
Adult: 2 - 4 mg IVP

May redose in 10 minutes x1 if continued severe pain, and all of the above conditions are still met (must repeat vital signs).
Call online medical direction if pain is still not relieved after 2 administrations.

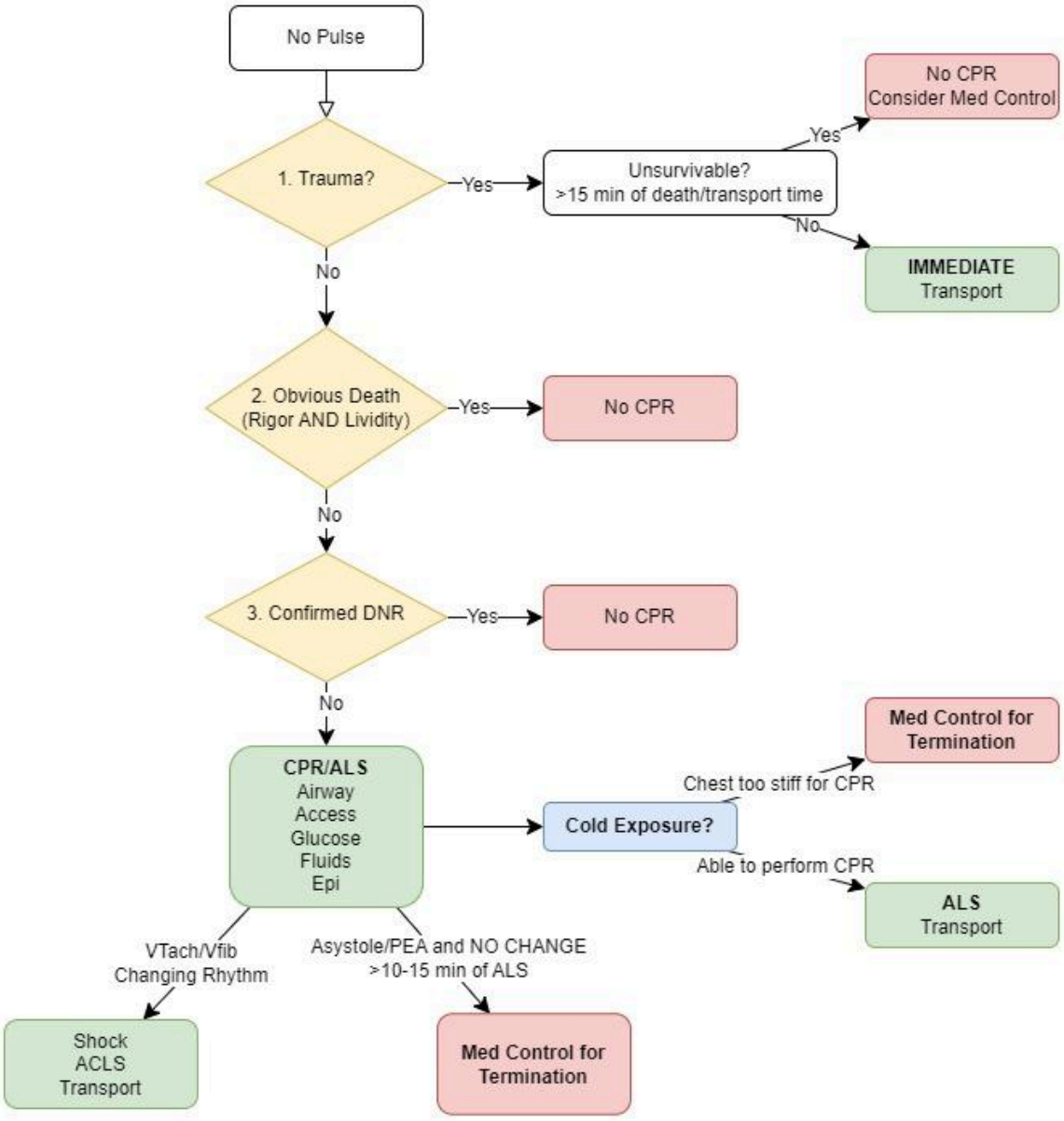
There are many situations where a patient may require narcotic analgesia that do not fall into the guidelines above. EMT-I are required to call on-line Medical Control for authorization in those circumstances.

Transportation of patients by ambulance or medical rescue units is regulated by the Public Regulation Commission and the Medical Rescue Certification regulations. All decisions to transport a patient must be made in accordance with these regulations.

In all cases, on-line Medical Control takes precedence over written protocols or standing orders.

FIELD TERMINATION OF CARDIAC ARREST:

Gallup/McKinley County EMS Cardiac Arrest Algorithm



Med Control: 505-496-8035, Dr. Jenson: 781-301-1077, GIMC: 505-722-1165

McKINLEY COUNTY EMS DESTINATION GUIDELINES

1. Goal

All patients encountered by EMS within McKinley County, including those that are medically unstable, unconscious and/or at high risk of multiple or severe injuries or illness, as well as those with less severe injuries or illness but whose medical condition necessitates transport by ambulance, need to be quickly identified, assessed and transported to the appropriate facility whose medical capability and service availability is consistent with the medical and/or surgical needs of the patient.

2. All Patients Matrix

The main field triage decision puts patients into one of two groups:

1. Patient requiring trauma facilities (significant trauma, see Section 3)

2. Patients not requiring trauma facilities

If the patient has a traumatic injury, please see Section 3 (Trauma Destination Matrix) to evaluate if the patient must go to a trauma facility, or can go to another facility.

If the patient does **not** have traumatic injury, then the patient can go to the closest preferred facility for the patient. Please see appendix A for a list of facilities and their capabilities. The exception to this is in the event of a “Non Trauma EMS Diversion”. Please refer to Section 5 for this.

3. Trauma Destination Matrix

Goal/Purpose:

All patients encountered by EMS within McKinley County need to be quickly identified, assessed and transported to the appropriate facility whose medical capability and service availability is consistent with the medical and/or surgical needs of the patient. Given the unique challenges of the hospital system in McKinley county, and the locations of the regional trauma center (Gallup Indian Medical Center (GIMC)), guidelines are required about which types of patients should be transported to a trauma center, rather than the closest or patient requested destination.

Relevant Exclusions:

These criteria only apply to patients with known or suspected traumatic injury. If the patient has a non-traumatic medical complaint, and has no external signs of trauma or history of traumatic injury, these guidelines do not apply.

This does not apply in incidents of mass casualty. In those situations, discussions are required with ED and hospital leadership at both Gallup facilities (Rehoboth McKinley Christian Health Care Services (RMCHCS), GIMC) to determine appropriate triage and transport for the those injured.

EMS Provider Discretion:

It is impossible to predict every type of traumatic injury, both with regards to mechanism or injury type. As a result, these are general guidelines and should not trump provider discretion when evaluating a trauma patient. If an EMS provider has any concern for occult serious traumatic injury, they should bring that patient to the local trauma center (GIMC).

Guideline:

Patients should be transported to the regional trauma center, bypassing the closest or patient's preferred destination if they have serious traumatic injury, including:

1. Vital Sign Abnormalities, such as (but not limited to):
    a. Airway involvement or concerns (eg. Stridor, gagging, airway injury etc.)
    b. Respiratory rate <10 or >29
    c. SBP <110 mmHg
    d. GCS <14 (not awake and alert without stimulation)
2. Severe Injury, such as (but not limited to):
    a. 2 or more obvious or suspected fractures
    b. Severe fracture/injury (crush injury, severely deformed, discolored, pulseless, cold etc.)
    c. Any penetrating injury (deeper than simple laceration)
    d. Neurologic abnormalities after trauma (weakness or numbness in any extremity)
    e. Obvious or suspected Head, Face or Pelvic fracture
3. Severe Mechanism of Injury, such as (but not limited to):
    a. Motor Vehicle Collision with ANY high risk feature, such as (but not limited to):
        i. Highway Speed (>40mph), including ALL patients on interstate highways
        ii. Death in any vehicle in the collision

iii. Rollover
iv. Ejection from the vehicle as a result of the collision
v. Unrestrained patient
vi. Significant intoxication
vii. ANY compartment intrusion

b. Pedestrian struck by car or motorcycle (at any speed)
c. ANY Motorcycle or Scooter accident
d. Falls ≥ 1 story (10 feet)

For mechanism of injury, it is impossible to predict every possible potential severe mechanism. Again, EMS providers should have a high index of suspicion, and transport all severely or potentially severely injured patients preferentially to the trauma center (GIMC).

Specific types of patients may be at greater risk of severe injury. EMS providers should have a higher index of suspicion for trauma in these groups.

1. Elderly patients (e.g. over 80 years old or physically frail)
2. Pregnant patients
3. Pediatric patients (<18 years old)
4. Intoxicated patients
5. Agitated or combative patients
6. Significant (>5% TBSA) burns, including all burns to face, hands or genitals

Online Trauma Destination Guidance:

If a patient does not easily meet the above guidelines and/or the EMS provider is unsure of the appropriate destination for the patient, they may request consultation regarding the best destination for the patient.

In these situations, the provider should call over the radio, specifically requesting “Trauma Destination Guidance.” This will activate both GIMC and RMCHCS to the radio, with ED physician availability if possible.

4. Air Ambulance Bypass Guidelines

When transporting by ground is not appropriate due to distance, terrain traffic or other reasons, activation of an EMS air ambulance should be considered as provided for local transport protocols.

However, given GIMC's position as the regional trauma center capable of handling most traumatic injury, and the importance of emergent transport to a capable facility of the most severely injured trauma patients, this should be used very sparingly.

Consideration for EMS air ambulance shall include:

a. Multiple severely injured trauma patients within a Mass Casualty Incident (MCI)
b. Greater than 60 minute estimated transport time from the landing zone (LZ) to the closest capable facility and
    i. Significant trauma with reasonable vitals for the clinical situation and a stable airway.
    ii. STEMI documented on 12-lead EKG
    iii. Patients with active UGI bleeding
    iv. Obvious acute ischemic stroke

5. Non-Trauma EMS Diversion Matrix

Goal/Purpose:
All patients encountered by EMS within McKinley County, including those that are medically unstable, unconscious and/or at high risk of severe illness, as well as those with less severe injuries or illness but whose condition necessitates transport ambulance, need to be quickly identified, assessed and transported to the appropriate facility whose medical capability and service availability is consistent with the medical and/or surgical needs of the patient. In addition, given McKinley County's rural status, many hospitals serve as the only medical destination for great distances, and transport to alternate facilities outside of the county involves logistical challenges for the transporting service and the EMS system, and potential health risks to the individual patient.

Emergency Patient Categories:
There are two general types of patients who require emergency transport. The first is trauma and the second are those with emergent medical conditions. This document presents patient transportation protocols for **non-trauma** patients. This does not apply to trauma related diversion, which would involve state level resources and intervention.

Non-Gallup EMS Diversion Protocol:
Outside of Gallup, there are three potential destination hospitals, all which limited surgical and medical capabilities: (Cibola General Hospital (CGH), Crownpoint Comprehensive Health Facility (CCHF), Zuni Comprehensive Health Center (ZCCHC)).

If one of the three non-Gallup hospitals is on diversion (CGH, CCHF, ZCCHC), EMS should divert the patient to the next closest hospital that has capability to care for the patient's need.

Gallup EMS Diversion Protocol:
If one of the hospitals in Gallup (RMCHCS, GIMC) is on non-trauma EMS diversion due to capacity and capability limitations, EMS should divert patients to the other capable health care facility in the town.

If both GIMC and RMCHCS reach capacity and capability limitations sufficient for non-trauma EMS diversion, they should notify all relevant EMS agencies in the county of their current status. However, they cannot both divert all EMS transports.

If the two facilities (GIMC and RMCHCS) have the simultaneous need to be on Non-Trauma diversion, two things should happen:

1. ED and Hospital leadership at the two Gallup hospitals will contemporaneously agree on a system for subsequent EMS acceptance (patient preference acuity, 1:1 alternating transports, special needs patients, e.g. dialysis, etc.). Both facilities should have a periodic and dynamic internal review of the diversion and do everything to remediate and end the diversion as soon as possible as a diversion will impose a measurable strain on the EMS system. It is extremely important that the

facilities' respective leadership remain in frequent contact during this time of mutual diversion. They will alert all EMS agencies of this plan and provide timely updates as indicated.

2. Individual EMS agencies and EMS providers may, given patient acuity, location and capabilities of surrounding hospitals, choose to transport outside of the county given the limitations of Gallup hospitals at that time.

6. McKinley County Area Hospitals

Designated Level 3 Trauma Center in McKinley County:

Gallup Indian Medical Center (GIMC)
516 Nizhoni Blvd
Gallup, NM 87301
(505) 722-1000

Non- designated Facilities in McKinley County:

With Limited Surgical Capabilities:
Cibola General Hospital (CGH)
833 E. Roosevelt Ave.
Grants, NM 87020
(505) 287-6500

Rehoboth McKinley Christian Health Care Services (RMCHCS)
1901 Red Rock Drive
Gallup, NM 87301
(505) 863-7000

Without Surgical Capabilities:
Crownpoint Comprehensive Health Facility (CCHF)
Hwy Junction 371, Rt. 9
Crownpoint, NM 87313
(505) 786-5291

Zuni Comprehensive Health Center (ZCCHC)
12 B. Ave Black Rock
Zuni, New Mexico 87327
(505) 782-7485

7. Rotor Response for Air Ambulance Bypass

The following protocol will be adhered to for a request of Rotor Aircraft on scene calls by county operated units.

1. Zone / Perimeter – 51 mile marker on I-40
    a. WEST of the 51 mile marker – Gallup MedFlight is 1st call
    b. EAST of the 51 mile marker – PHI Rotor Team is 1st call
    c. In the event that ETA is not acceptable or 1st call team is not available, call
    d. the next closest available
2. Local Rotor Aircraft Services
    a. Gallup MedFlight (Gallup)
    b. PHI (Grants)
3. Other Air Ambulance Services
    a. Air Care One (Farmington)
    b. Northern boundary - county line. If north of county line, contact Air Care One
4. Rotor in Ramah Area
    a. PHI is PRC for this area, request PHI first
    b. If PHI not available, inform on-scene personnel and notify next closest

5. The use of “stand-by” rotor advisement will no longer be used. Rotor aircraft will be launched once on-scene first responders have made a request; this request may be made on scene or upon receipt of page and incident report from Metro Dispatch.

SPECIAL SKILL - EMT I BENZODIAZEPINE ADMINISTRATION

ILS responders may be utilized to provide care to seizing patients and patients with unpredictable psychiatric conditions and possible combative behavior or severe agitation during a response. The EMT- Intermediate will be in attendance at all times during the transfer, and all patients receiving benzodiazepines must be transported to the hospital.

EMT-Intermediates may be responding to adult (age 18 and over) patients with:

1. Convulsions lasting greater than 5 minutes.
2. Psychiatric conditions known to require physical restraint for the duration of a transport.
3. Agitation requiring chemical sedation for:
    - Acute neurological changes
    - Mental status changes
    - Alcohol withdrawal
    - Acute overdose. (Exceptions: opiate overdose)

Midazolam may be administered for the above indications as follows:

Adult (age 18 and over):

i. [5-10 mg] IN/IM. Max single dose is 10mg. May repeat once after 10 minutes.

ii. [2-5 mg] SIVP/IO. Repeat every 5 minutes as needed up to 10mg.

If midazolam is out of stock the EMT-Intermediate may administer diazepam as follows:

Adult (age 18 and over):

[2 to 10mg] IV/IO/IM. May repeat once after 10 minutes.

If the patient exhibits conditions listed above, the EMT-Intermediate will administer the benzodiazepine immediately, and if agitated/combative, will place the patient in full physical restraints with appropriate positioning when it is safe to do so. If benzodiazepine administration is well-tolerated by the patient and there are no signs of clinical deterioration, the ILS unit will continue transport to the destination facility. If benzodiazepine administrations results in complications, the EMT-I will immediately address the complications in accordance with their scope of practice and either transport the patient immediately to the closest medical facility or request an ALS rendezvous, whichever allows the patient to receive a higher level of care in a timely manner.

Only EMT Intermediates who have successfully completed the agency administered course and exam and have active credential for benzodiazepine administration will be able to administer and/or transport patients who have received midazolam or diazepam.

During transport, the EMT-Intermediate will document vital signs every 5 minutes once a benzodiazepine is administered.

Every ILS benzodiazepine administration will be immediately routed for QI review.

This protocol went into effect 2/1/2022. It will be reviewed on a bi-annual basis.

Midazolam – (Versed®)
SCOPE OF PRACTICE EMT-Paramedic, EMT-Intermediate as special skill
CLASS OF DRUG Anticonvulsants, other; antianxiety agent; anxiolytics; benzodiazepines
PHARMACOLOGIC ACTION Binds receptors at several sites within the CNS, including the limbic system and reticular formation; effects may be mediated through gabba-aminobutyric acid (GABA) receptor system; increase in neuronal membrane permeability to chloride ions enhances the inhibitory effects of GABA; the shift in chloride ions causes hyperpolarization (less excitability) and stabilization of the neuronal membrane

INDICATIONS

1. Control of seizures
2. Reduction of anxiety or combativeness in agitated or violent patients suffering behavioral emergencies

CONTRAINDICATIONS

1. Hypersensitivity
2. Severe respiratory depression
3. Sleep apnea

ADMINISTRATION

1. Adult:
    i. [5-10 mg] IN/IM. Max single dose is 10mg. May repeat once after 10 minutes
    ii. [2-5 mg] SIVP/IO. Repeat every 5 minutes as needed up to 10mg.

SPECIAL NOTES

1. Should not be mixed with other agents or diluted with intravenous solutions. Give through the proximal end of IV tubing, then flush well.
2. Most likely to produce respiratory depression in patients who have taken other depressant drugs, especially alcohol and barbiturates.
3. It can cause local venous irritation. Use relatively large veins.
4. Versed has a short half- life. Additional doses may be necessary.
5. May cause respiratory depression, arrest, or apnea

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TREATMENTS

FIRST RESPONDER
EMT - BASIC
EMT- INTERMEDIATE (EMT-I)
EMT-PARAMEDIC

REV 8: Updated 2024

TABLE OF CONTENTS

CARDIAC EMERGENCIES

CHEST PAIN / Acute Coronary Syndrome / STEMI

DESCRIPTION OF CONDITION

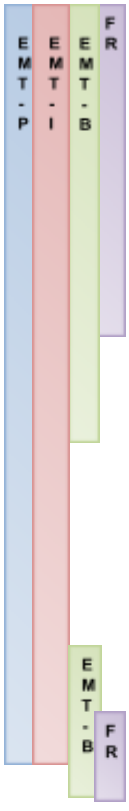
Signs and symptoms may include any, none, or all of the following: sub-sternal chest pain, chest pressure, shortness of breath, diaphoresis, nausea, and vomiting, syncope, radiating pain to the jaw and arms, a feeling of impending doom, and history of cardiac problems. Atypical or unusual symptoms are more common in women, the elderly and diabetic patients. May also present with CHF, syncope and/or shock

EMPHASIS ON PATIENT CARE

Airway management, adequate perfusion and oxygenation, pain control and early transportation to an appropriate facility.

Identify STEMI quickly and determine the time of symptom onset. Administer appropriate medications. Activate hospital-based STEMI system of care. Monitor vital signs and cardiac rhythm and be prepared to provide CPR and defibrillation if needed.

PRE-HOSPITAL MANAGEMENT



1. Primary Assessment - Assess airway, breathing and circulation and manage as indicated.
2. History, physical exam, vital signs
3. If suspected ACS chest pain and no allergy, administer **ASPIRIN** [324 mg] chewable.
4. Cardiac monitoring, and obtain a 12 - lead EKG, if possible, for documentation
5. If possible, the EKG may be transmitted for remote interpretation by a physician or screened for STEMI by properly trained EMS providers, with or without the assistance of computer-interpretation.
6. Advance notification should be provided to the receiving hospital for patients identified as having STEMI.
7. If applicable, Contact **ONLINE** Medical Control for administration of the patient's own **NITROGLYCERIN** may be repeated every 3-5 minutes to a maximum of 3 times, if BP > 100 systolic, HR > 60, and <140.
8. Initiate an IV of an isotonic solution at a TKO rate and Consider second IV if time permits.
9. Consider **NITROGLYCERIN** [0.3-0.4 mg SL] every 3-5 minutes. if BP > 100 systolic. IV must be initiated prior to administration of Nitroglycerin or given with the approval of online Medical Control if IV access is unavailable.
10. Do not give Nitroglycerin if the patient has used a Sexual Performance Enhancing Drug (SPED) within the last 72 hours OR if there is concern for an inferior MI.
11. If transport capable, minimize scene time and transport the patient to an appropriate medical facility. Transport and destination decisions should be based on local resources and system of care.

Note: If transport is prolonged, Contact Medical Control for additional Nitroglycerin administration.

(Continued next page)

CHEST PAIN (cont.)

EMT-P EMT-I

12. If SBP ≥ 100, Consider administration of narcotic analgesia. EMT-I must obtain approval from Medical Control.

MORPHINE

a. Adult: [4-10 mg] slow IV/IO titrating 2-4 mg every 10 minutes to effect. (Max of 10 mg without approval from Medical Control). Do not administer if the systolic BP is less than 100.

FENTANYL

a. Adult: [25-100 mcg] slow IV/IO every 5 minutes to effect. (Maximum single dose of 100mcg and maximum total dose of 300mcg without approval from Medical Control). Do not give if systolic BP is less than 100.Consider an anti-emetic for nausea and/or vomiting:

ONDANSETRON (Zofran®)

a. Adult: [4mg] IV/IO/PO/IM
b. Pediatric: [0.05-0.1 mg/kg] IV/IO/PO/IM (Max dose 4mg)

PROMETHAZINE (Phenergan®)

a. Adult: [12.5-25 mg] PO/IV/IO/IM

13. Treat Pulseless Rhythms, Tachycardia, or Symptomatic Bradycardia (see specific guideline sections)

Note: Morphine should be used with caution in unstable angina (UA)/NSTEMI due to an association with increased mortality

Note: Current literature does not support the routine use of anti-dysrhythmics, except in symptomatic ectopy. See Ventricular Tachycardia (VT) Guidelines.

MEDICAL CARDIAC ARREST (REFER TO ARREST ALGORITHM Intro pg 7)

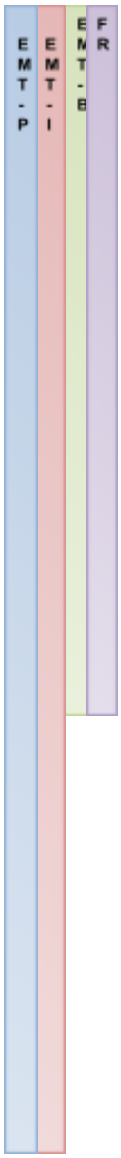
DESCRIPTION OF CONDITION

Signs and symptoms include an unconscious and unresponsive patient with agonal or absent respiratory effort and no palpable pulses.

EMPHASIS ON PATIENT CARE

CPR, early defibrillation (if indicated) and ACLS intervention as rapidly as possible

PRE-HOSPITAL MANAGEMENT



1. Primary Assessment – Defibrillation if indicated, Assess airway, Assess for normal breathing and palpable pulses. If absent: and manage as indicated.
   a. Determine cardiopulmonary arrest and time last seen conscious.
   b. Ascertain if the patient has Advanced Directives (i.e. EMS DNR, Living Will) and if so, follow Do Not Resuscitate Guidelines.
   c. If no Advanced Directives are present, patients should be resuscitated as close to the point at which they are first encountered and should only be moved if the conditions on scene are unsafe, or do not operationally allow for resuscitation. Consider moving the patient to a room where safe and effective resuscitation can occur. Effectiveness of chest compressions decreases with any movements.
   d. Initiate CPR (follow AHA Guidelines), and ventilate with a BVM using 100% **OXYGEN** for 2 minutes of CPR, prior to attempts at airway management. All attempts should be made to prevent avoidable interruptions in chest compressions, such as pre-charging the defibrillator and hovering over the chest, rather than stepping away during defibrillations.
   e. If an AED is available, attach the device; follow instructions and Shock as advised. If an AED is not available, continue CPR until an AED is available. Chest compressions should resume immediately after defibrillation attempts with no pauses for pulse checks
   f. Insert advanced airway (see Respiratory Arrest/Distress Guidelines), and continue ventilation, 1 breath every 6 seconds, without interrupting compressions. 100% **OXYGEN**.
2. Place patient on continuous quantitative waveform end-tidal CO2 (EtCO2) monitoring if available.
   a. An abrupt sustained increase in EtCO2 during CPR should be Considered an indicator of ROSC in all patients with an advanced airway and continuous quantitative capnographic monitoring in place. If providers see an organized rhythm and an abrupt, sustained increase in EtCO2, complete the cycle of CPR and check for a pulse.
   b. Conversely, an abrupt sustained decrease in EtCO2 after ROSC may indicate re-arrest. If this occurs, reassess the patient.
3. If ALS providers/ACLS care is available on scene, the patient should be resuscitated as close to the scene as operationally possible.
4. Initiate an IV/IO of an isotonic solution within the first 2-minute period of chest compressions. at an appropriate rate.

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MEDICAL CARDIAC ARREST (cont.)

EMT-P EMT-I

5. Defibrillation is the most effective means of terminating Ventricular Fibrillation (VF) and pulseless Ventricular Tachycardia (VT). Following defibrillation attempts administer **EPINEPHRINE 1: 10,000** IV/IO starting as soon as possible. and repeated for duration of resuscitation until pulses return or the arrival of ALS
   a. Adult – [1.0 mg] IV/IO every 3-5 minutes
   b. Pediatric Initial: [0.01 mg/kg] IV/IO every 3-5 minutes
   c. If indicated, defibrillate between drug administrations.
6. If defibrillation is manual, it should be delivered at the maximum output of the defibrillator, based on manufacturer's recommendations, up to 360 joules (or 4 J/kg for Pediatric patients), for initial and subsequent defibrillation attempts. (**Paramedic only**)
7. See specific rhythm (VF/VT / Asystole / PEA) protocol.
8. Consider reversible causes of cardiac arrest which include the following:
   a. Hypothermia – additions to care include attempts at active rewarming. Refer to Hypothermia/Cold Exposure guideline.
   b. The dialysis patient/known hyperkalemic patient:
      i. **CALCIUM CHLORIDE** 10% [10ml] IV/IO (for Pediatrics, the dose is [20 mg/kg] which is 0.2 ml/kg)
      ii. **SODIUM BICARBONATE** [1 mEq/kg] IV/IO
   c. Tricyclic antidepressant overdose:
      i. **SODIUM BICARBONATE** [1 mEq/kg] IV/IO
   d. Hypovolemia:
      i. **NORMAL SALINE** 2 L IV/IO (or 20 ml/kg, repeated up to 3 times for Pediatrics)
   e. If the patient is intubated at the time of arrest, Assess for tension pneumothorax and misplaced ETT. If tension pneumothorax suspected, perform needle decompression. Assess ETT, if misplaced, replace ETT

Note: If at any time during this period of resuscitation the patient regains return of spontaneous circulation, proceed to the Adult Post-ROSC Care guideline

Note: If resuscitation remains ineffective after 10-15 minutes of full ALS care, including appropriate airway management, continuous high quality cpr, IV/IO access and medication administration, Contact Medical Control for transport or termination of resuscitation instructions

Note: Patient/Provider Safety Considerations. It is not safe for the patient or providers to perform chest compressions during transport unless a mechanical chest compression device is utilized. Chest compressions during patient movement are less effective in regards to hands on time, depth, recoil and rate and providers performing chest compressions in a moving vehicle are at risk for injury. Therefore, patients should be resuscitated as close to the scene as operationally possible.

VF & VT (without a pulse) (REFER TO ARREST ALGORITHM Intro pg 7)

DESCRIPTION OF CONDITION

Signs and symptoms include an unresponsive patient with absent pulses, and an EKG showing ventricular fibrillation or pulseless ventricular tachycardia.

EMPHASIS ON PATIENT CARE

CPR, defibrillation and ACLS intervention as rapidly as possible

PRE-HOSPITAL MANAGEMENT

1. Follow Medical Cardiac Arrest Guidelines

   Note: If defibrillation is manual, it should be delivered at the maximum output of the defibrillator, based on manufacturer's recommendations, up to 360 joules (or 4 J/kg for Pediatric patients), for initial and subsequent defibrillation attempts. **(Paramedic Only)**

2. Administer **EPINEPHRINE** 1:10,000
   a. Adult – [1.0 mg] IV/IO every 3-5 minutes
   b. Pediatric [0.01 mg/kg] IV/IO every 3-5 minutes
3. Consider use of an anti-dysrhythmic for persistent VF/Pulseless VT

AMIODARONE

a. Adult: [300 mg] IV/IO followed by 10.0 ml saline, rapid flush. May repeat once at 3- 5 minutes with 150 mg
b. Pediatric: [5mg/kg] IV/IO. May repeat twice to a maximum of 15 mg/kg for 24 hours. Not to exceed 150 mg for a single dose.

LIDOCAINE

a. Adult: [1.0-1.5mg/kg] IV/IO, (total maximum dose – 3.0 mg/kg IV/IO). Lidocaine may be repeated every 5-10 minutes at a dose of [0.5-0.75 mg/kg] IV/IO up to a total dose of 3 mg/kg
b. Pediatric: [1mg/kg] IV/IO Maintenance: [20-50 mcg/kg/min] infusion (repeat bolus dose if infusion initiated.15 minutes after initial bolus therapy) not to exceed 3.0 mg/kg

MAGNESIUM SULFATE for Torsades de pointes or suspected hypomagnesemia

a. Adult: [2.0 g] SIVP/IO
b. Pediatric: [25–50 mg/kg] over 10-20 minutes at a max of 2.0 g

4. In some special resuscitation situations, such as preexisting metabolic acidosis, hyperkalemia, or tricyclic antidepressant overdose, Sodium Bicarbonate can be beneficial, however the routine use of Sodium Bicarbonate is not recommended for patients in cardiac arrest.

SODIUM BICARBONATE

a. Adult: [1.0 mEq/kg] IV/IO
b. Pediatric: [1.0 mEq/kg] IV/IO

Note: If at any time during this period of resuscitation the patient regains return of spontaneous circulation, proceed to the Adult Post-ROSC Care guidelines.

Note: Consider termination after 40 minutes of resuscitation efforts without ROSC (40 minutes from time of last shock or from beginning if no shock ever indicated). Contact Medical Control for transport or termination of resuscitation instructions.

Note: Quantitative end-tidal carbon dioxide (ETCO2) measurements of less than 10 mmHg or falling > 25% despite resuscitation indicates a poor prognosis and provides additional support for termination.

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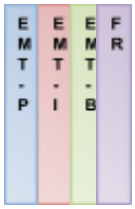
VF & VT (without a pulse) (cont.)



Note: Patient/Provider Safety Considerations It is not safe for the patient or providers to perform chest compressions during transport unless a mechanical chest compression device is utilized. Chest compressions during patient movement are less effective in regards to hands on time, depth, recoil and rate and providers performing chest compressions in a moving vehicle are at risk for injury. Therefore, patients should be resuscitated as close to the scene as operationally possible.

ASYSTOLE (REFER TO ARREST ALGORITHM Intro pg 7)

DESCRIPTION OF CONDITION

Signs and symptoms include an unconscious and unresponsive patient with agonal or absent respiratory effort and no palpable pulses. The patient's ECG will show no electrical activity on the monitor (confirmed by 10-second strips in at least two consecutive leads, when possible). This guideline is Considered for a normo-thermic patient.

EMPHASIS ON PATIENT CARE

CPR, ACLS intervention, possible decision to terminate resuscitation

PRE-HOSPITAL MANAGEMENT

1. Follow Medical Cardiac Arrest Guidelines.
2. Initiate an IV/IO of an isotonic solution within the first 2-minute period of chest compressions with 20cc/kg fluid bolus.
3. Administer **EPINEPHRINE 1:10,000**
   a. Adult – [1.0 mg] IV/IO every 3-5 minutes
   b. Pediatric [0.01 mg/kg] IV/IO every 3-5 minutes
4. Insert advanced airway: (follow Respiratory Arrest/Distress Guidelines), and continue ventilation with 100% **OXYGEN**.
5. In some special resuscitation situations, such as preexisting metabolic acidosis, hyperkalemia, or tricyclic antidepressant overdose, Sodium Bicarbonate can be beneficial, however the routine use of Sodium Bicarbonate is not recommended for patients in cardiac arrest.

   SODIUM BICARBONATE

   a. Adult: [1.0 mEq/kg] IV/IO
   b. Pediatric: [1.0 mEq/kg] IV/IO
6. Consider possible underlying treatable causes of asystolic cardiac arrest, and treat accordingly as per Scope of Practice:

Hypovolemia	▪ Toxins
Hypoxia	▪ Tamponade, Cardiac
Hydrogen Ion (Acidosis)	▪ Tension Pneumothorax
Hypo/Hyperkalemia	▪ Thrombosis
Hypoglycemia	▪ Trauma
Hypothermia	

Note: If at any time during this period of resuscitation the patient regains return of spontaneous circulation, proceed to the Adult Post-ROSC Care guidelines.

Note: Consider termination after 10-15 minutes of full ALS care, including appropriate airway management, continuous high quality cpr, IV/IO access and medication administration. Contact Medical Control for transport or termination of resuscitation instructions.

Note: Quantitative end-tidal carbon dioxide (ETCO2) measurements of less than 10 mmHg or falling > 25% despite resuscitation indicates a poor prognosis and provides additional support for termination.

Note: Patient/Provider Safety Considerations It is not safe for the patient or providers to perform chest compressions during transport unless a mechanical chest compression device is utilized. Chest compressions during patient movement are less effective in regards to hands on time, depth, recoil and rate and providers performing chest compressions in a moving vehicle are at risk for injury. Therefore, patients should be resuscitated as close to the scene as operationally possible.

PULSELESS ELECTRICAL ACTIVITY (REFER TO ARREST ALGORITHM Intro pg 7)

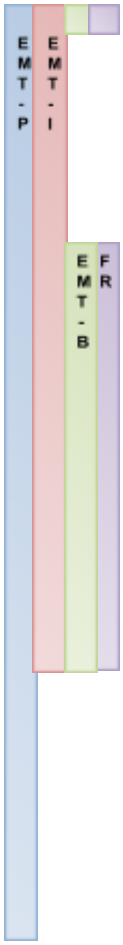
DESCRIPTION OF CONDITION

Patient presenting in cardiac arrest with organized electrical activity noted on the cardiac monitor, but without corresponding pulses palpated. Determination and correction of underlying cause of the PEA may improve outcome. Specific problems which may cause PEA:

EMPHASIS ON PATIENT CARE

CPR, return of spontaneous circulation, management of associated conditions

PRE-HOSPITAL MANAGEMENT



1. Follow Medical Cardiac Arrest Guidelines.
2. Initiate an IV/IO of an isotonic solution within the first 2-minute period of chest compressions. at an appropriate rate.
3. Administer **EPINEPHRINE 1:10,000**
   a. Adult – [1.0 mg] IV/IO every 3-5 minutes
   b. Pediatric [0.01 mg/kg] IV/IO every 3-5 minutes

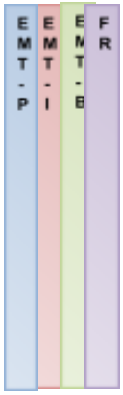
4. Insert advanced airway: (follow Respiratory Arrest/Distress Guidelines), and continue ventilation with 100% **OXYGEN**.
5. Treat for any suspected reversible causes within applicable scope of practice. Consider possible underlying treatable causes of asystolic cardiac arrest, and treat accordingly as per Scope of Practice:

Hypovolemia	▪ Toxins
Hypoxia	▪ Tamponade, Cardiac
Hydrogen Ion (Acidosis)	▪ Tension Pneumothorax
Hypo/Hyperkalemia	▪ Thrombosis
Hypoglycemia	▪ Trauma
Hypothermia	

6. Consult with Medical Control for transport or termination of resuscitation orders. See **Notes** below.
7. In some special resuscitation situations, such as preexisting metabolic acidosis, hyperkalemia, or tricyclic antidepressant overdose, Sodium Bicarbonate can be beneficial, however the routine use of Sodium Bicarbonate is not recommended for patients in cardiac arrest.

   SODIUM BICARBONATE

   a. Adult: [1.0 mEq/kg] IV/IO
   b. Pediatric: [1.0 mEq/kg] IV/IO



Note: If at any time during this period of resuscitation the patient regains return of spontaneous circulation, proceed to the Adult Post-ROSC Care guidelines.

Note: Consider termination after 10-15 minutes of full ALS care, including appropriate airway management, continuous high quality cpr, IV/IO access and medication administration. (40 minutes from time of last shock, or from beginning if no shock ever indicated). Contact Medical Control for transport or termination of resuscitation instructions.

Note: Quantitative end-tidal carbon dioxide (ETCO2) measurements of less than 10 mmHg or falling > 25% despite resuscitation indicates a poor prognosis and provide additional support for termination.

Note: Patient/Provider Safety Considerations - It is not safe for the patient or providers to perform chest compressions during transport unless a mechanical chest compression

device is utilized. Therefore, patients should be resuscitated as close to

BRADYCARDIA-SYMPTOMATIC

DESCRIPTION OF CONDITION

The patient will present with a hemodynamically unstable bradycardia (BP <90mmHg systolic, decreased LOC, and a heart rate of < 60 bpm with associated signs and symptoms which may include: chest pain, shortness of breath, etc.).

EMPHASIS ON PATIENT CARE

Maintain adequate oxygenation and perfusion, ALS intervention

PRE-HOSPITAL MANAGEMENT

EMT-P EMT-I EMT-B FR

1. Primary Assessment - Assess airway, breathing and circulation and manage as indicated.
2. History, physical exam, vital signs
3. If suspected ACS and no allergy, administer **ASPIRIN** [324 mg PO].
4. Cardiac monitoring, and obtain a 12 - lead EKG, if possible, for documentation.
5. If no ALS is available on scene and, if transport capable, initiate transport with ALS intercept.
6. Enroute, initiate an IV/IO of isotonic solution at a flow rate determined by patient condition.
7. Consider:

ATROPINE SULFATE

a. Adult [1 mg] IV/IO, repeated every 3-5 minutes up to a max.dose of (0.04 mg/kg (3 mg).
b. Pediatric [0.02 mg/kg] IV/IO. May repeat once. Minimum dose 0.1mg and maximum single dose 0.5mg.

Note: Atropine may not be effective in Second Degree Type II or new wide Third Degree blocks.

Note: Atropine should be Considered before pacing for suspected vagal induced bradycardias.

Note: Atropine will not be effective in patients who have had heart transplants.

TRANSCUTANEOUS PACING at a rate of 60-70 bpm.

a. Assess for electrical and mechanical capture. If patient is showing a Second Degree Type II, Third Degree block or STEMI, Transcutaneous Pacing is the treatment of choice.
b. Consider sedation with a benzodiazepine or analgesia in conjunction with Transcutaneous Pacing if BP will allow:

8. Consider:

MIDAZOLAM

a. Adult:
   i. [5-10 mg] IN/IM. Max single dose is 10mg. May repeat once after 10 minutes
   ii. [2 to 5 mg] SIVP/IO. Repeat every 5 minutes as needed up to 10mg.
b. Pediatric:
   i. [0.2 mg/kg] IN/IM. Max single dose is 5mg. May repeat once after 10 min.
   ii. [0.1 mg/kg] SIVP/IO. Repeat every 5 minutes as needed, up to 10mg.

DIAZEPAM

a. Adults
   i. [2-10 mg] IV/IO/IM, slow with IV running open

EMT-P

BRADYCARDIA-SYMPTOMATIC (cont.)

b. Pediatric:
   i. [0.05–0.1 mg/kg] IV/IO
   ii. Rectal dosage [0.5 mg/kg] may be warranted in seizure patients if no venous access is available. Onset of action by this route may be delayed.
   iii. Apnea in children after diazepam administration may occur

9. If the patient is still hypotensive and symptomatic, Consider ONE of the following vasopressors:

NOREPINEPHRINE

1. Adult [4 mcg/min] IV/IO infusion, may increase by 2 mcg/min q 5 mins up to a max dose of 10 mcg/min.

DOPAMINE Drip

a. Adult [5-20 mcg/kg/min.] IV/IO or

EPINEPHRINE

a. Adult [2-10 mcg/min. drip]: IV/IO titrate to effect
b. Pediatric [0.01 mg/kg] IV/IO (0.1 mL/kg of 1:10,000 concentration) Repeat every 3-5 minutes

2. Consider other treatable causes to include calcium channel blocker or beta blocker overdose, hyperkalemia, hypoxia.

HYPERTENSION (EMERGENT)

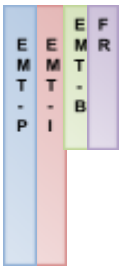
DESCRIPTION OF CONDITION

The patient may be experiencing hypertension sufficient to produce clinical end organ dysfunction most commonly in the cardiovascular system, CNS, and kidneys. Diastolic pressure usually exceeds 130 mmHg. Common presentations may include: severe headache, chest pain, CHF, blurred vision, and confusion.

EMPHASIS ON PATIENT CARE

Airway management, adequate oxygenation and perfusion, and transport

PRE-HOSPITAL MANAGEMENT



1. Primary Assessment - Assess airway, breathing and circulation and manage as indicated.
2. If transport capable, initiate transport to appropriate medical facility. Consider ALS intercept.
3. History, physical exam, vital signs
4. If a stroke is suspected, see Suspected Stroke Guidelines.
5. Enroute, initiate an IV/IO of isotonic solution at a TKO rate.
6. Treat other findings (chest pain, CHF altered mental status) according to the appropriate guidelines.

Note: Most patients with isolated hypertension do not require pre-hospital lowering of blood pressure.

NARROW COMPLEX TACHYCARDIAS

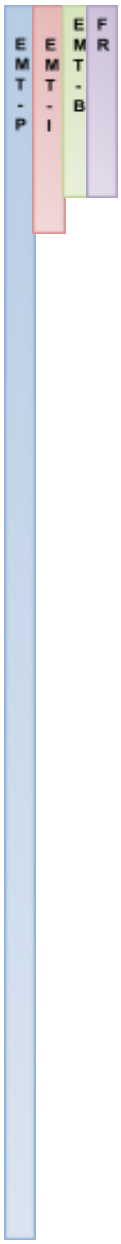
DESCRIPTION OF CONDITION

Patient will present with an elevated heart rate for age with supraventricular focus. and may or may not also present with associated symptoms such as palpitations, dyspnea, chest pain, syncope/near-syncope, hemodynamic compromise, altered mental status or other signs of end organ malperfusion.

EMPHASIS ON PATIENT CARE

Maintain adequate oxygenation and perfusion. Restore regular sinus rhythm - correct rhythm disturbance, and ALS intervention

PRE-HOSPITAL MANAGEMENT



1. Primary Assessment - Assess airway, breathing and circulation and manage as indicated.
2. History, physical exam, vital signs
   a. If suspected AMI, administer **ASPIRIN** [324 mg PO].
3. Place on cardiac monitor if available and record a strip, obtain a 12 lead if possible.
4. If transport capable, initiate transport to appropriate medical facility. Consider ALS intercept
5. Enroute, initiate an IV/IO of an isotonic solution, titrate to maintain adequate vital signs.
6. Determine if the narrow complex rhythm is regular or irregular.
7. If hemodynamically stable regular Narrow Complex Tachycardia:
   a. Valsalva maneuvers may be attempted.
   b. If no response, or patient is in mild to moderate hemodynamic instability, Consider:

   ADULT

   i. Administer **ADENOSINE** [6.0 mg] rapid IV push (1-2 seconds) followed by a 20cc flush of **NORMAL SALINE**.
   ii. Repeat **ADENOSINE** [12.0 mg] rapid IV push (1-2 seconds) followed by a 20cc flush of **NORMAL SALINE**, after 1-2 minutes, if indicated.
   iii. Repeat **ADENOSINE** [12.0 mg] rapid IV push (1-2 seconds) followed by a 20cc flush of **NORMAL SALINE**, after 1-2 minutes, if indicated.
   iv. If patient's condition deteriorates, perform synchronized cardioversion immediately.

   PEDIATRIC

   i. Administer **ADENOSINE** Initial: [0.1 mg/kg (max dose 6 mg)] rapid IV/IO. Repeat in 2-3 minutes if no change at [0.2 mg/kg (max dose 12 mg)] rapid IV/IO.
8. If hemodynamically stable Irregular Narrow Complex Tachycardia:
   a. Monitor for deterioration Enroute.
9. If **UNSTABLE** regular or irregular Narrow Complex Tachycardia:
   a. Perform Synchronized Cardioversion. If the patient is conscious, and the BP will tolerate it, Consider sedation with a benzodiazepine or analgesia, prior to cardioversion

   ADULT

   i. Cardiovert at 50-100 joules, or biphasic equivalent
   ii. Cardiovert at 200 joules, or biphasic equivalent
   iii. Cardiovert at 300 joules, or biphasic equivalent
   iv. Cardiovert at 360 joules, or biphasic equivalent

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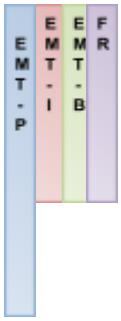
NARROW COMPLEX TACHYCARDIAS (Cont.)

PEDIATRIC

i. Deliver a synchronized shock; 0.5-1 J/kg for the first dose
ii. Repeat doses should be 2 J/kg

b. If patient's cardiac rhythm changes during procedure, treat per applicable guidelines.

Notes:



1. Patients in Sinus Tachycardia should be evaluated for underlying causes and treated accordingly.
2. Patients presenting with hemodynamic instability, evidence of poor perfusion, chest pain, altered level of consciousness, shortness of breath, cyanosis or evidence of congestive heart failure are Considered unstable and intervention should be implemented per this protocol.
3. Patients with narrow complex tachycardia, are often familiar with their problem and symptoms. Those who do not show evidence of hemodynamic instability require no pre-hospital medications.

WIDE COMPLEX TACHYCARDIA (with pulse)

DESCRIPTION OF CONDITION

Patient who presents with Ventricular Tachycardia or Wide Complex Tachycardia with pulse present. These patients may be conscious or unconscious. “Unstable” indicates symptoms such as chest pain, dyspnea, hypotension, CHF, ischemia, or unconsciousness. “Stable” patients with sustained wide complex tachycardia will not have these symptoms, but must be monitored carefully for onset of such symptoms.

EMPHASIS ON PATIENT CARE

Maintain adequate perfusion, adequate oxygenation, ALS intervention

PRE-HOSPITAL MANAGEMENT

1. Primary Assessment - Assess airway, breathing and circulation and manage as indicated.
2. History, physical exam, vital signs
3. Place on cardiac monitor if available, record a strip and obtain a 12 lead EKG if possible.
   a. If suspected AMI, administer **ASPIRIN** [324 mg PO].
   b. If the patient becomes unconscious and pulseless, follow Cardiac Arrest Guidelines.
4. If transport capable, initiate transport to appropriate medical facility. Consider ALS intercept.
5. Enroute, initiate an IV/IO of an isotonic solution, titrate to maintain adequate vital signs.
6. If stable wide complex tachycardia or if patient has only mild symptoms of decompensation:
   a. Consider **AMIODARONE**

   ADULT

   i. [150mg] over 10 min. Repeat as needed of VT recurs. Follow with continuous infusion at 1mg/min for first 6hrs.

   PEDIATRIC

   i. [5 mg/kg] IV/IO over 20-60 minutes. May repeat twice, up to 15 mg/kg /24 hours; maximum single dose 150 mg.

OR

   b. Consider **LIDOCAINE**

   ADULT

   i. [1.0-1.5 mg/kg] IV/IO. If VT persists, [0.5-0.75 mg/kg] every 3 to 5 minutes, up to 3.0 mg/kg total. Follow with continuous infusion at 1-4 mg/minute (30-50 mcg/kg/minutes)

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WIDE COMPLEX TACHYCARDIAS – With Pulse - (Cont.)

EMT-P

PEDIATRIC

i. Contact MCEP

c. May also Consider **MAGNESIUM SULFATE** [2 g] diluted in 10ml of D5W over 1-2 min.] slow IV/IO. For **Torsades de Pointes**, Magnesium Sulfate is the drug of choice and may require doses up to [5-10 g] administered slow IV/IO.

7. If hemodynamically unstable wide complex tachycardia:

a. Perform immediate synchronized cardioversion/defibrillate. If the patient is conscious, and the blood pressure can tolerate it, Consider sedation with a benzodiazepine or analgesia prior to cardioversion.

Monomorphic (regular)

ADULT

i. Cardiovert at 100 joules, or biphasic equivalent
ii. Cardiovert at 200 joules, or biphasic equivalent
iii. Cardiovert at 300 joules, or biphasic equivalent
iv. Cardiovert at 360 joules, or biphasic equivalent

PEDIATRIC

i. Deliver a synchronized shock; [0.5-1 J/kg] for the first dose
ii. Repeat doses should be [2 J/kg]

Polymorphic (irregular)

i. Defibrillate with the same energy settings as VF

b. If patient's cardiac rhythm changes during procedure, treat per applicable guidelines.

Note: Although the loading dose of Lidocaine does not need to be reduced, the maintenance dose should be decreased by 50% in the presence of impaired hepatic blood flow and in patients > 70 years of age.

ROSC (RETURN OF SPONTANEOUS CIRCULATION) CARE – Adult

DESCRIPTION OF CONDITION

Patient returned to spontaneous circulation following cardiac arrest resuscitation

EMPHASIS ON PATIENT CARE

Optimize neurologic and other function following a return of spontaneous circulation following resuscitated cardiac arrest.

PRE-HOSPITAL MANAGEMENT

EMT-P EMT-I EMT-B FR

1. Perform general patient management.
2. Support life-threatening problems associated with airway, breathing, and circulation. Monitor closely for reoccurrence of cardiac arrest.
3. Titrate oxygen to minimum necessary to keep O2 saturation > 94%. Do **NOT** hyper-oxygenate.
4. If transport capable, transport the patient as soon as possible to an appropriate medical facility. Consider ALS.
5. Establish IV/IO access
6. For hypotension (SBP less than 90) treat for shock. Cardiogenic shock is common after cardiac arrest. Refer also to Shock Guideline.
   a. 250 ml NS fluid bolus. May repeat up to 1 L if lungs are clear and the patient remains hypotensive.
   b. Consider a vasopressor agent:

NOREPINEPHRINE: [4 mcg/min] IV/IO infusion, may increase by 2 mcg/min q 5 mins up to a max dose of 10 mcg/min. Recent evidence supports the use of norepinephrine as the preferred intervention.

DOPAMINE infusion [5–20 mcg/kg/minute] IV/IO.

EMT-I EMT-B FR

7. Check blood glucose. If < 60 mg/dl refer to Diabetic Emergencies Guidelines for treatment recommendations. If hyperglycemic, notify hospital on arrival.
8. If patient seizes, refer to Seizure Guidelines
9. Perform 12-lead EKG.
10. Post cardiac arrest patients with evidence or interpretation consistent with ST elevation myocardial infarction (STEMI/Acute MI) should be transported to a hospital that offers percutaneous coronary intervention in their cardiac catheterization laboratory. Activate hospital-based STEMI system of care.
11. Consider transport patients to facility that offers specialized post-resuscitative care.
12. Do not allow patient to become hyperthermic.
13. Mild therapeutic hypothermia may be beneficial in unresponsive patients with ROSC. Use only if a coordinated system of care exists to maintain therapy.
14. While administering fluid boluses, frequently reassess perfusion for improvement and/or fluid overload respiratory distress. If perfusion improves, slow the IV to KVO and monitor closely. If patient develops fluid overload respiratory distress (dyspnea, rales, crackles, decreasing SpO_2), slow the IV to KVO.

Note:

1. Hyperventilation is a significant cause of hypotension and recurrence of cardiac arrest in the post resuscitation phase.

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ROSC (RETURN OF SPONTANEOUS CIRCULATION) CARE – Adult (Cont.)

2. Most patients immediately post resuscitation will require ventilatory assistance including intubation and sedation.
3. The condition of post-resuscitation patients fluctuates rapidly and continuously, and they require close monitoring. A significant percentage of Post ROSC patients will re-arrest with the highest incidence in the first five minutes after ROSC.
4. Common causes of post-resuscitation hypotension include hyperventilation, hypovolemia, and pneumothorax.

CHILDBIRTH/OBSTETRICAL

IMMINENT DELIVERY

DESCRIPTION OF CONDITION

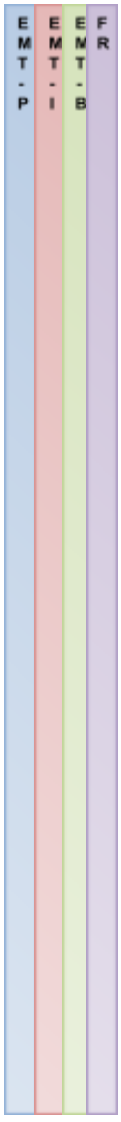
Determining imminent birth may include: regular contractions lasting 45 - 60 seconds at 1-2 minutes intervals; crowning occurs; patient feels the urge to bear down or feels she needs to have a bowel movement.

EMPHASIS ON PATIENT CARE

Pre-delivery: Treat the child by treating the mother.

Post-delivery: Maintain warmth and adequate ventilations for the baby. Continue care for the mother.

PRE-HOSPITAL MANAGEMENT



1. Primary Assessment - Assess airway, breathing and circulation and manage as indicated.
2. History, physical exam, vital signs
   a. Obtain medical and obstetrical history including:
      i. Due date (EDC)
      ii. Length of pregnancy
      iii. Number of pregnancies, live births, and miscarriages (gravida, para, and abortions).
      iv. Last menstrual period (LMP)
      v. Summary of prenatal care
      vi. Number of expected babies
      vii. When did contractions start, how close, bleeding, and does she feel the need to push.
      viii. Previous or present illness, cardiac problems, diabetes, etc.
      ix. Patient's age
      x. Complications of prior pregnancies, deliveries, prior C-section.
      xi. Use of drugs
3. Examine the perineum for visible cord, head crowning, presenting part other than the head, active vaginal bleeding, amniotic fluid, and meconium.
4. If birth is imminent and the following conditions present, Contact a physician (preferably one who does obstetrics) for delivery instructions:
   a. Multiple births
   b. Excessive bleeding
   c. Breech presentation
   d. Meconium
   e. If transport capable, consider rapid transport and ALS intercept for the following (see Childbirth Complications):
      i. Limb presentations
      ii. Transverse presentation
      iii. Unlikely to deliver vaginally

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CHILDBIRTH/OBSTETRICAL (cont.)

5. If the birth is imminent in the pre-hospital setting:
   a. Delivery should be controlled so as to allow a slow controlled delivery of infant. This will prevent injury to mother and infant.
   b. Open the OB kit, don sterile gloves, and create a field for delivery.
   c. Reassure mother - encourage to not bear down between contractions, but to “pant”.
   d. Place slight pressure over the head with hand to prevent rapid delivery, but do not attempt to delay delivery.
   e. Once head delivers, instruct mother to stop pushing.
   f. **Do NOT** routinely suction the infant’s airway (even with a bulb syringe) during delivery Suctioning after birth should not be done routinely; rather it is reserved for babies who have obvious obstruction to spontaneous breathing or require positive pressure ventilation. When suctioning suction the mouth first then nose.
   g. Support body as delivery proceeds. Baby will be extremely slippery. **DO NOT** pull on baby.
   h. Dry and wrap in blanket, cover head. Stimulate the baby to breathe/cry. If baby does not breathe spontaneously, follow Neonatal Resuscitation Guidelines. Do APGAR scoring.
   i. Using clamps or hemostats, clamp the cord, 6-10 inches from baby, 2 - 3 inches apart, then cut between clamps.
   j. If bleeding occurs post-delivery, massage mother’s abdomen/uterus.
   k. Do not pull on the umbilical cord. Bring birth products to ED.
   l. Place sterile pad over vaginal opening.
   m. Cover mother with clean and dry bedding.
   n. Record time of the birth.
   o. Do not let the neonate become hypothermic.
6. If transport capable, transport mother and baby to the nearest hospital. Bring all blood soaked pads and passed tissue to hospital.
7. Monitor the mother and baby’s vital signs and APGAR every 5 minutes.

Neonate Vital Signs			
Age	**Respirations**	**Pulse**	**Blood Pressure (Systolic)**
Newborn	30-60	100-160	50-70

The APGAR Score				SCORE	
Sign	0	1	2	1 min	5 min
Skin Color	Blue, Pale	Body pink, extremities blue	Completely pink		
Heart Rate	Absent	< 100	> 100		
Irritability	No response	Grimaces	Cries		
Muscle Tone	Limp	Some flexion of extremities	Active Motion		
Resp. Effort	Absent	Slow & Irregular	Strong Cry		
			TOTAL SCORE		

8. If the mother continues to bleed, initiate an IV/IO of isotonic solution and infuse at a flow rate to maintain adequate vital signs.
9. If the placenta has delivered, and heavy vaginal bleeding continues, administer **OXYTOCIN** [10-20 USP units in 500 ml Isotonic Solution] at a flow rate of 10-15 gtts/min.

CHILDBIRTH COMPLICATIONS

PRE-HOSPITAL MANAGEMENT

NUCAL CORD

EMT-P EMT-I EMT-B FR

1. If the cord is wrapped around the baby's neck:
   a. Gently pull and slip over the head or shoulders.
   b. If it will not slip over either, clamp cord twice, and cut between clamps and proceed with delivery.

BREECH DELIVERY

1. If the delivery is breech, but imminent, attempt to establish Contact with a physician (who does obstetrics) for delivery instructions and, if transport capable, initiate immediate transport to the nearest hospital, preference to OB capable hospital if available.
   a. Use sterile technique whenever possible. Encourage mother to push hard.
   b. Allow the fetus to deliver spontaneously up to the level of the umbilicus. Support the body.
   c. Apply suprapubic pressure to the mother to promote descent of the head. Do not pull traction on the infant's body.
   d. After the infant's legs are clear, gently extract a 4-6 inch loop of umbilical cord to allow for delivery without excessive traction on the cord.
   e. Rotate the infant so that shoulders are in an anterior-posterior position. Gently guide the infant upward to allow delivery of the posterior shoulder and then downward to deliver the anterior shoulder. The head may deliver spontaneously at this point.
2. If the head does not deliver, position the head with the infant face downward, away from the maternal symphysis. Avoid excessive traction or manipulation on the infant's spine.
   a. Rotate the mother's legs upwards towards her shoulders and apply suprapubic pressure if not already doing so.
   b. Place a gloved hand into the vagina, palm towards the infant's face
   c. With index and middle fingers form a V on either side of the infant's nose on the maxilla. Gently pull the vagina away from the infant's face and apply gentle traction to roll the occiput under the pubic symphysis.
   d. If unable to deliver the infant's head, maintain the V formation with your hand and rapidly transport.
   e. When the head delivers, suction and wrap the baby.
   f. Clamp the umbilical cord with two cord clamps and cut the cord between the clamps with sterile scalpel.
3. One or both arms may be extended upward behind the neck, which may impede delivery of the head. In this event, there are three delivery options:
   a. If the fetus is small or the pelvis large, the head and extended arm may be delivered together.
   b. Alternatively, the operator may attempt to flex the arm and sweep it down over the face and chest.
   c. As a last resort, the operator may rotate the fetus 360 degrees in the direction that will sweep the arm out of its nuchal position (clockwise for a left arm, counterclockwise for a right arm).

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CHILDBIRTH COMPLICATIONS (cont.)

PROLAPSED UMBILICAL CORD

EMT-P EMT-I EMT-B FR

1. If transport capable, initiate immediate transport to the nearest hospital, preference to OB capable hospital as emergency cesarean section is definitive management.
2. Place mother in a) left lateral decubitus position and extreme Trendelenburg if possible.
3. Administer high-flow oxygen to mother.
4. Insert gloved hand into vagina and gently push the presenting part away from the cord until it pulsates. Do not attempt to replace the cord back into the uterus
5. Place a moist sterile dressing over cord, if able.
6. **(EMT-I and Paramedic)** Insert IV/IO and run IV fluids to maintain vital signs.

PRE ECLAMPSIA AND ECLAMPSIA

Defined as a condition of pregnancy after 20 weeks gestation characterized by hypertension (BP > 140/90, severe is SBP > 160 and DBP > 110), headaches, clonus, visual disturbances, right upper quadrant pain, and edema of the lower extremities. Clinical presentations are quite variable. Progression to seizures is eclampsia and is life threatening

1. Keep patient in a left lateral recumbent position and keep away from intense stimulus (i.e. bright lights, loud noises, etc.).
2. Secure the airway and administer **OXYGEN** titrated to patient condition.
3. **(EMT-I and Paramedic)** Initiate IV/IO of an isotonic solution TKO.
4. Monitor for the progression of seizures. If the patient begins seizing, administer Magnesium and follow Seizure Guideline

MAGNESIUM SULFATE [4 gms] slow IV/IO.

If magnesium is unsuccessful at stopping the seizure, Consider:

MIDAZOLAM:

a. Adult:
   i. [5-10 mg] IN/IM. Max single dose is 10mg. May repeat once after 10 minutes [2 to 5 mg] SIVP/IO. Repeat every 5 minutes as needed up to 10mg.

OR

DIAZEPAM

a. Adult:
   i. [2-10 mg] slow IM/IV/IO

5. If the patient is exhibiting signs and symptoms of severe pre-eclampsia as defined by:
   a. Systolic BP > 170 and/or Diastolic BP > 110

   OR

   b. Systolic BP > 150 and Diastolic BP > 100 **AND** the patient is exhibiting at least 2 of the following signs and symptoms: severe headache, blurry vision, or abdominal pain, Contact MCEP for possible magnesium 2 gram IV/IO over 10 minutes
6. For signs of Magnesium Sulfate toxicity, (i.e. hypotension, drowsiness, decreased reflexes, diminished respiratory effort, respiratory paralysis) administer:
   a. **CALCIUM CHLORIDE or GLUCONATE**
      i. [5-10 ml] slow IV/IO. (Do not exceed 2ml/min.)
   b. Unless delivery is imminent, transport immediately.

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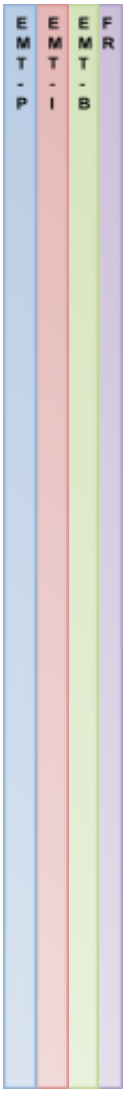
CHILDBIRTH COMPLICATIONS (cont.)

VAGINAL BLEEDING



1. **(EMT-I and Paramedic)** For all patients, initiate an IV/IO of an isotonic solution and infuse at a flow rate to maintain adequate vital signs

Pre-delivery

a. Consider possible placental abruption, especially if associated with trauma or cocaine use.
   i. If unstable vital signs (or fetal heart tones <100), notify emergency department of possible need for c-section.

Post-delivery

a. Most likely due to the inability of the uterus to contract, after delivery of the placenta.
   i. Massage fundus of the uterus (located suprapubically) vigorously.
   ii. **(Paramedic only)** If bleeding continues administer:

   OXYTOCIN [10-20 USP units in 500 ml Isotonic Solution] at a flow rate of 10-15 gtts/min.

   iii. Initiate rapid transport

SHOULDER DYSTOCIA

1. If infant shoulders impact the symphysis pubis:
   a. Hyperflex mother's hips to severe knee-chest position.
   b. Apply firm suprapubic, not fundal, pressure to attempt to dislodge the shoulder.
   c. After the delivery, continue with resuscitative measures as needed

MATERNAL CARDIAC ARREST

1. Apply manual pressure to displace uterus from right to left
2. See **Cardiac Arrest (VF/VT/Asystole/PEA)** guideline for resuscitation care (defibrillation and medications should be given for same indications and doses as if non-pregnant patient)
3. Transport as soon as possible if infant is estimated to be over 24 weeks gestation A cesarean section (resuscitative hysterotomy) at receiving facility is most successful if done within 4-5 minutes of maternal cardiac arrest)
4. Contact direct Medical Direction and/or closest appropriate receiving facility for direct medical oversight and to prepare team.

NEONATAL RESUSCITATION

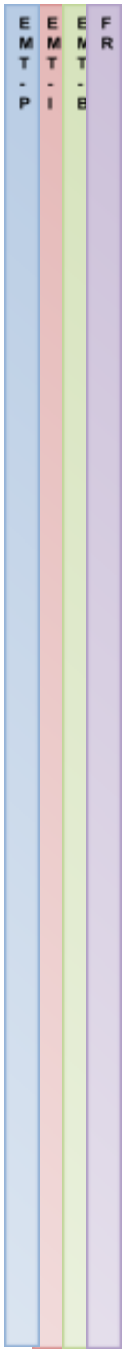
DESCRIPTION OF CONDITION

The patient is a newborn who requires resuscitative intervention. Extent and level of intervention is patient condition dependent.

EMPHASIS ON PATIENT CARE

Maintain adequate perfusion, adequate oxygenation, ALS intervention

PRE-HOSPITAL MANAGEMENT



1. Primary Assessment - Assess airway, breathing and circulation and manage as indicated
   a. Respiratory rate and effort (strong, weak, or absent; regular or irregular)
   b. Signs of respiratory distress (grunting, nasal flaring, retractions, gasping, apnea)
   c. Heart rate (fast, slow, or absent)
      i. Precordium, umbilical stump or brachial pulse may be used. Umbilical stump is preferred for accuracy and ease of access.
   d. Muscle tone (poor or strong)
   e. Color/Appearance (central cyanosis, acrocyanosis, pallor, normal)
   f. APGAR score (appearance, pulse, grimace, activity, respiratory effort)
      i. May be calculated for documentation, but not necessary to guide resuscitative efforts.
   g. Estimated gestational age (term, near term, premature)
   h. Pulse oximetry should be Considered if prolonged resuscitative efforts
      i. Goal oxygen saturation at 10 minutes is 85-95%
2. History
   a. Date and time of birth
   b. Onset of symptoms
   c. Prenatal history (prenatal care, substance abuse, multiple gestation, maternal illness)
   d. Birth history (maternal fever, presence of meconium, prolapsed or nuchal cord, maternal bleeding)
3. Clamp and cut cord if still attached to mother
4. Warm, dry, and stimulate the infant.
   a. Wrap infant in dry towel or thermal blanket to keep infant as warm as possible during resuscitation; keep head covered if possible
   b. If strong cry, regular respiratory effort, good tone, and term gestation, infant should be placed skin-to-skin with mother and covered with dry linen
5. If weak cry, signs of respiratory distress, poor tone, or preterm gestation then position airway (sniffing position) and clear airway as needed
   a. If thick meconium or secretions present and signs of respiratory distress, suction mouth then nose
6. If heart rate >100 beats per minute
   a. Monitor for central cyanosis
      i. Provide blow-by oxygen as needed
   b. Monitor for signs of respiratory distress
      i. Initiate bag-valve-mask ventilation with room air at 40-60 breaths per minute

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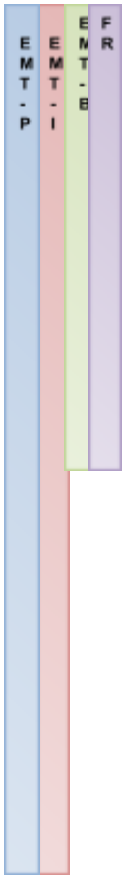
NEONATAL RESUSCITATION (Cont.)



7. If heart rate <100 beats per minute but less >60
   a. Initiate bag-valve-mask ventilation with room air at 40-60 breaths per minute
      i. Primary indicator of effective ventilation is improvement in heart rate
      ii. Rates and volumes of ventilation required can be variable, only use the minimum necessary rate and volume to achieve chest rise and a change in heart rate
   b. If no improvement after 90 seconds change to oxygen source until heart rate normalizes
8. If heart rate < 60 beats per minute
   a. Ensure effective ventilations with supplementary oxygen and adequate chest rise
   b. Initiate chest compressions
      i. Two-thumb-encircling-hands technique is preferred
   c. Coordinate chest compressions with positive pressure ventilation (3:1 ratio, 90 compressions and 30 breaths per minute)
   d. Establish an IV/IO and Consider a fluid challenge with Normal Saline 10cc/kg if hypovolemia is a Consideration.
   e. If CPR and BVM with supplemental oxygen do not raise HR >60, administer 1:10,000 Epinephrine [0.01mg/kg. Repeat every 3-5 minutes
   f. Assess BGL: capillary or venous, if BGL is < 45 mg/dl, administer **D10W** [1gm/kg] IV/IO over twenty minutes.
   g. If non-addicted mother has used narcotics within the past four hours, Consider Naloxone 0.1 mg/kg IV/IO for the infant with respiratory depression unresponsive to conventional resuscitation. **DO NOT** administer Naloxone to infants of narcotic addicted mothers, or when this is in question.
   h. Transport as soon as possible and Contact Medical Control for online medical direction

ENVIRONMENTAL

DROWNING

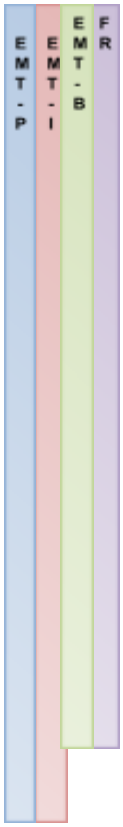
DESCRIPTION OF CONDITION

Includes a history of being submerged under water for an excessive period of time resulting in potential cardio-pulmonary compromise

EMPHASIS ON PATIENT CARE

Rapid Assessment and management of life-threatening injuries, rescue from the water-based environment, airway maintenance, CPR, if indicated and transport of all patients suffering from drowning for hospital evaluation.

PRE-HOSPITAL MANAGEMENT



1. Primary Assessment - Assess airway, breathing and circulation and manage as indicated.
   a. Primary survey should include aggressive airway management and restoration of adequate oxygenation and ventilation. Unlike the CAB strategy used in standard cardiac arrest, patients suffering cardiac arrest from drowning require an ABC approach with prompt airway management and supplemental breathing.
   b. History should include circumstances leading to the submersion, details of mechanism of injury, time under water, was the water fresh, polluted or salt water, water temperature (if available) and pre-existing medical conditions.
   c. History, mechanism of injury and exam should include Consideration of possible c-spine injury. If evaluation suggests injury to the cervical spine, manage c-spine.
   d. Assess for other associated injury such as injury to the head or dive-related emergency.
2. Begin artificial respirations in the water, if needed, taking C-spine precautions. See Spinal Immobilization Guideline
3. Insert advanced airway (see Respiratory Arrest/Distress Guidelines), and continue ventilation, 1 breath every 6 seconds, without interrupting compressions. **100% OXYGEN.**
4. Suction as needed.
5. If cardiac arrest occurs, follow Medical Cardiac Arrest Guidelines.
6. Do not stop CPR if the patient has been in cold water.
7. If hypothermia is present or suspected, refer to Hypothermia Guidelines.
8. If transport capable, transport the patient to an appropriate medical facility.
9. Enroute, initiate a large bore IV/IO of an isotonic solution and infuse at a flow rate to maintain adequate vital signs.

HYPERTHERMIA / Heat Exposure

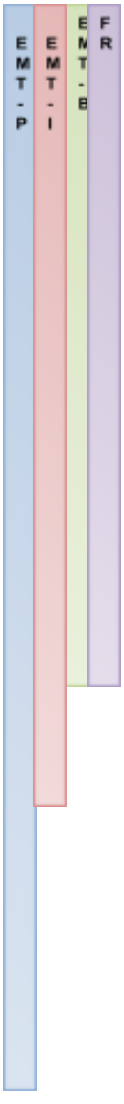
DESCRIPTION OF CONDITION

Hyperthermia is Considered a sustained core temperature of greater than 101° F (38.3° C), with thermoregulatory mechanisms failing around 105.8° F (41° C). This condition can result from environmental exposure, exertion, medications, or illness. Signs and symptoms include any or all of the following: muscle cramps, weakness, exhaustion, dizziness, fainting, altered level of consciousness, unresponsiveness, and rapid heart rate. Skin may be moist or dry, and normal, cool, or hot. The most severe form of hyperthermia is heat stroke, defined as an elevated core temperature and altered level of consciousness.

EMPHASIS ON PATIENT CARE

Rapid re-cooling of the core temperature, fluid maintenance (elderly, chronically ill, and Pediatrics are at a higher risk)

PRE-HOSPITAL MANAGEMENT



1. Primary Assessment - Assess airway, breathing and circulation and manage as indicated. Use humidified O2.
2. Move victim to a cool area and shield from the sun or any external heat source
3. Remove as much clothing as is practical and loosen any restrictive garments
4. If alert and oriented, give small sips of cool liquids
5. If there is altered mental status, check blood glucose level and Consider possible drug use as a contributing factor as well as other causes.
6. Maintain airway vigilance for emesis, seizure
7. If transport capable, transport the patient as soon as possible to an appropriate medical facility. Consider ALS.
8. Place on cardiac monitor and record ongoing vital signs and level of consciousness
9. If temperature is > 104 degrees F (40 degrees C) or if altered mental status is present, begin active cooling by:
   a. Continually misting the exposed skin with tepid water while fanning the victim (most effective)
   b. Truncal ice packs may be used, but are less effective than evaporation
   c. Ice bath immersion provides the most rapid cooling mechanism but may not be available to EMS and makes monitoring of the patient very difficult.
10. Establish IV/IO access for heat stroke
11. **NORMAL SALINE** IV/IO Bolus in [250 - 500 cc] increments as necessary to support LOC, HR and end organ perfusion. Re-evaluate LOC, VS, and lung sounds between boluses.
12. Monitor and treat for shivering during active cooling. Consider:
    a. Adult:
       i. **MIDAZOLAM** [5-10 mg] IN/IM. Max single dose is 10mg. May repeat once after 10 minutes. [2 to 5 mg] SIVP/IO. Repeat every 5 minutes as needed up to 10mg.
       ii. **DIAZEPAM** [2mg] IV/IO, may repeat once in 5 minutes

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HYPERTHERMIA / HEAT EXPOSURE (Cont.)

EMT-P

b. Pediatric:

Consider **NORMAL SALINE** [10–20ml/kg] IV fluid bolus for dehydration even if vital signs are normal. If uncontrolled shivering occurs during cooling:

i. **MIDAZOLAM** [0.2 mg/kg] IN/IM. Max single dose is 5mg. May repeat once after 10 min. [0.1 mg/kg] SIVP/IO. Repeat every 5 minutes as needed, up to 10mg.

ii. **DIAZEPAM** [0.2mg/kg] IV/IO or 0.5mg/ kg PR (single maximum dose 2mg IV or 4mg PR)

EMT-I EMT-B FR

13. Cooling efforts should continue until the patient's temperature is less than 102.2 F (39 C) and the patient demonstrates improvement in mental status.
14. Monitor for arrhythmia and cardiovascular collapse, (see Cardiac Emergencies).
15. Treat seizures per Seizure Guideline

HYPOTHERMIA / Cold Exposure

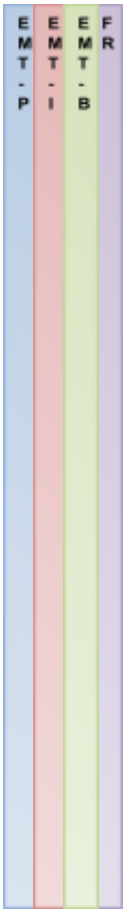
DESCRIPTION OF CONDITION

Patients may suffer from hypothermia from exposure to a cold environment (increased heat loss) or may suffer from a primary illness or injury that, in combination with cold exposure (heat loss in combination with decreased heat production), leads to hypothermia. Patients may suffer systemic effects from cold (hypothermia) or localized effects, such as in frostbite. Patients with mild hypothermia will have normal mental status, shivering and may have normal vital signs while patients with moderate to severe hypothermia will manifest mental status changes, eventual loss of shivering and progressive bradycardia, hypotension, and decreased respiratory status. Patients with frostbite will develop numbness involving the affected body part along with a “clumsy” feeling along with areas of blanched skin. Later findings include a “woody” sensation, decreased or loss of sensation, bruising or blister formation, or a white and waxy appearance to affected tissue

EMPHASIS ON PATIENT CARE

Maintain hemodynamic stability, prevent further heat loss, aggressive management of cardiac arrest and prevent loss of limbs. Level of consciousness is the most reliable indicator of the severity of hypothermia.

PRE-HOSPITAL MANAGEMENT



1. Patient Assessment should begin with attention to the primary survey, looking for evidence of circulatory collapse and ensuring effective respirations. The patient suffering from moderate or severe hypothermia may have severe alterations in vital signs including weak and extremely slow pulses, profound hypotension and decreased respirations. The rescuer may need to evaluate the hypothermic patient for longer than the normothermic patient (up to 60 seconds).
2. History – Along with standard SAMPLE-type history, additional patient history should include attention to any associated injury or illness, duration of cold exposure, ambient temperature, and treatments initiated before EMS arrival.
3. There are several means to categorize the severity of hypothermia based on either core body temperature readings or clinical evaluation. If possible and reliable, EMS providers should perform core body temperature measurements and categorize patients into one of the three follow levels of hypothermia:
   a. Mild – normal body temperature 35-32.1° C/95-89.8°F

   Vital signs not depressed, normal mental status, shivering is preserved. Body maintains ability to control temperature.

   b. Moderate - 32°-28°C – 89.7°-82.5°F

   Uncontrollable, violent shivering, slurred speech, stumbling. Progressive bradycardia and hypotension. Below 30 C shivering will be lost.

   c. Severe - 28°-22° C (or lower) – 82.4°- 68.1° F (or lower)

   Shivering stops, muscle rigidity, stupor progressing to unresponsiveness, respiratory rates which may become undetectable.
4. Maintain patient and rescuer safety. The patient has fallen victim of cold injury and rescuers have likely had to enter the same environment. Maintain rescuer safety by preventing cold injury to rescuers.

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HYPOTHERMIA / Cold Exposure (Cont.)

5. Manage airway as indicated
6. In Mild Hypothermia :
   a. Remove the patient from the environment and prevent further heat loss by removing wet clothes and drying skin, insulate from the ground, shelter the patient from wind and wet conditions and insulate the patient with dry clothing or a hypothermia wrap/blankets, cover the patient with a vapor barrier and, if available, move the patient to a warm environment
   b. Hypothermic patients have decreased oxygen needs and may not require supplemental oxygen. If oxygen is deemed necessary, it should be warmed, to a maximum temperature between 104-108° F (40-42° C) and humidified if possible
   c. Provide beverages or foods containing glucose if feasible and patient is awake and able to manage airway independently.
   d. Vigorous shivering can substantially increase heat production. Shivering should be fueled by caloric replacement
   e. Consider field-rewarming methods such as placement of large heat packs or heat blankets (chemical or electric if feasible) to the anterior chest or wrapped around the patient's thorax if large enough. Forced air warming blankets (e.g. Bair Hugger®) can be an effective field rewarming method if available
   f. Monitor frequently. If temperature or level of consciousness decreases, refer to severe hypothermia, below
   g. Consider IV/IO access. Indications for IV/IO access and IV fluids in the mildly hypothermic patient are similar to those of the non-hypothermic patient. IV fluids, if administered, should be warmed, ideally to 42° C. Bolus therapy is preferable to continuous drip. The recommended fluid for volume replacement in the hypothermic patient is normal saline.
   h. If alterations in mental status, perform a finger stick blood glucose and treat as indicated (see Diabetic Emergencies) and Assess for other causes of alterations of mentation
   i. Transport to a hospital capable of rewarming the patient
7. In Moderate or Severe Hypothermia:
   a. Perform ABCs. Pulse checks for patients suffering hypothermia should be performed for 60 seconds. Obtain core temperature if possible for patients exhibiting signs or symptoms of moderate/severe hypothermia. Core temperatures are best measured by esophageal probe, if one is available and the provider has been trained in its insertion and use. If esophageal temperature monitoring is not available or appropriate, epitympanic or rectal temperatures should be used. Of note, rectal temperatures are not reliable or suitable for taking temperatures in the field and should only be done in a warm environment (such as a heated ambulance)
   b. Manage airway as needed. Care must be taken not to hyperventilate the patient as hypocarbia may reduce the threshold for ventricular fibrillation in the cold patient. Indications and contraindications for advanced airway devices are similar in the hypothermic patient as in the normothermic patient
   c. Prevent further heat loss using the above methods
   d. Initiate field-rewarming methods such as placement of large heat packs or heat blankets (chemical or electric if feasible) to the anterior chest or wrapped around the patient's thorax if large enough. Forced air warming blankets (e.g. Bair Hugger®) can be an effective field rewarming method if available.

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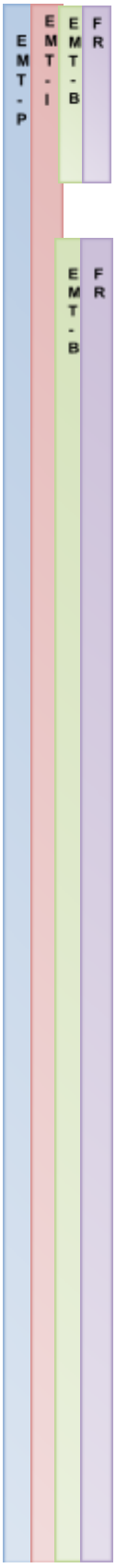
HYPOTHERMIA / Cold Exposure (Cont.)



e. Handle the patient gently. Attempt to keep the patient in the horizontal position, especially limiting motion of the extremities to avoid increasing return of cold blood to the heart. Once in a warm environment, clothing should be cut off (rather than removed by manipulating the extremities). Move the patient only when necessary such as to remove the patient from the elements

f. Apply cardiac monitor or AED if available

g. Establish IV/IO and provide warmed NS bolus. Repeat as necessary.

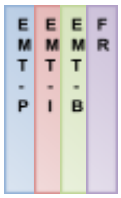
h. If alterations in mental status, consider measuring finger stick blood glucose and treat as indicated (see Diabetic Emergencies) and Assess for other causes of alterations of mentation

i. If transport capable, transport as soon as possible to a hospital capable of aggressive resuscitation. If cardiac arrest develops Consider transport to a center capable of extracorporeal circulation (if feasible)

8. If the patient is pulseless and apneic:
   a. Begin CPR prior to defibrillation and ventilate with warm, humidified oxygen.
   b. If patient in ventricular fibrillation, defibrillation should be attempted once, followed by 2 minutes of chest compressions, then rhythm and pulse checks.
   c. If defibrillation is unsuccessful and the patient's core temperature is < 30° C (86° F), do not make further attempts at defibrillation until the core temperature has increased to > 30° C (86° F).
   d. Continue CPR and attempt to rewarm the patient
   e. If defibrillation is unsuccessful and the patient's core temperature is > 30° C, (86° F), follow guidelines for normothermic patients.
   f. Consider inserting advanced airway (see Respiratory Arrest guidelines).
   g. If the patient is in asystole, CPR alone is the mainstay of therapy.
   h. If monitoring reveals an organized rhythm (other than VF or VT), but no pulses are detected, do not start CPR, but continue to monitor.
      i. While this may represent Pulseless Electrical Activity (PEA), this may also represent a situation in which the patient's pulses are not detectable, but remain effective due to decreased metabolic needs.
      ii. In the case of PEA, the rhythm will deteriorate rapidly to asystole, in which case, CPR should be initiated.
      iii. Given the potential to cause VF with chest compressions, it is better to maintain effective cardiac activity than to start CPR and cause VF.

      Note: There is little evidence to guide medication therapy in severe hypothermia with cardiac arrest. 2014 Alaska Cold Injuries Guidelines and the Wilderness Medical Society Practice Guidelines suggest not using vasoactive mediations until the patient's core temperature is greater than 30 C (86 F).
   i. Rapidly and carefully transport the patient to an appropriate medical facility.
   j. Monitor the patient's vital signs and rhythm closely.
9. Frostbite:
   a. If the patient has evidence of frostbite, and ambulation/travel is necessary for evacuation or safety, avoid rewarming of extremities until definitive treatment is possible. Additive injury occurs when the area of frostbite is rewarmed then inadvertently refrozen. Only initiate rewarming if refreezing is absolutely preventable

HYPOTHERMIA / Cold Exposure (Cont.)



b. If rewarming is feasible and refreezing can be prevented use circulating warm water (98.6 - 102° F/37 - 39° C) to rewarm effected body part, thawing injury completely. If warm water is not available, rewarm frostbitten parts by Contact with non-affected body surfaces. Do not rub or cause physical trauma.

c. After rewarming, cover injured parts with loose sterile dressing. Do not allow injury to refreeze

MEDICAL EMERGENCIES

ABDOMINAL PAIN - ACUTE

DESCRIPTION OF CONDITION

The patient is experiencing moderate to severe abdominal pain. Causes can include blunt or penetrating trauma, appendicitis, food poisoning, pancreatitis abdominal aortic aneurysm, gastritis, gall bladder problems, kidney stone, intestinal obstruction, ectopic pregnancy, ulcers, and ovarian cyst.

EMPHASIS ON PATIENT CARE

Airway management, rapid transport, maintain adequate perfusion.

PRE-HOSPITAL MANAGEMENT

1. Primary Assessment - Assess airway, breathing and circulation and manage as indicated.
2. Maintain the patient NPO (nothing by mouth)
3. Allow patient to assume a position of comfort
4. If transport capable, initiate transport to appropriate medical facility.
5. History, physical exam, vital signs
6. Enroute, initiate IV/IO access (determined by patient condition) of an isotonic fluid, infused at flow rate to maintain adequate vital signs.
7. **If no contraindications exist**, Consider administration of pain medications. EMT-I must have approval from Medical Control for narcotics.

ACETAMINOPHEN (Tylenol®)

a. Adult: 650-975mg PO. Do not administer if patient has already taken medication containing acetaminophen at home, or unsure.
b. Pediatric: 15mg/kg PO. Do not administer if patient has already taken medication containing acetaminophen at home, or unsure.

MORPHINE

a. Adult: [4-10 mg] slow IV/IO titrating 2-4 mg every 10 minutes to effect. (Max of 10 mg without approval from Medical Control). Do not administer if the systolic BP is less than 100.
b. Pediatric: (2-12 yrs. of age) [0.05-0.1mg/kg] slow IV/IO titrated to effect

FENTANYL

a. Adult: [25-100 mcg] slow IV/IO every 5 minutes to effect. (Maximum single dose of 100mcg and maximum total dose of 300mcg without approval from Medical Control). Do not give if systolic BP is less than 100.
b. Pediatric: (2-12 yrs. of age) [0.5-1 mcg/kg] IV/IO to a maximum of 2.0 mcg/kg slow IV push over 2 minutes.

8. Consider an anti-emetic for nausea and/or vomiting:

ONDANSETRON (Zofran®)

a. Adult: [4mg] IV/IO/PO/IM
b. Pediatric: [0.05-0.1 mg/kg] IV/IO/PO/IM (Max dose 4mg)

PROMETHAZINE (Phenergan®)

a. Adult: [12.5-25 mg] PO/IV/IO/IM

ALLERGIC REACTION/ANAPHYLAXIS

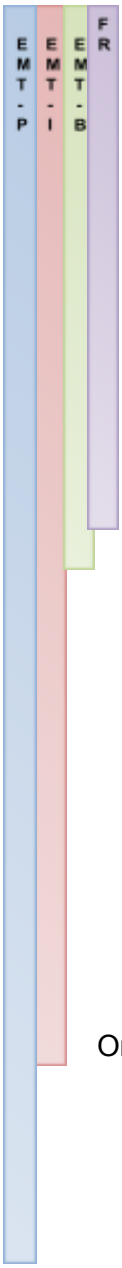
DESCRIPTION OF CONDITION

Signs and symptoms may include any one or all of the following: wheezing associated with bronchoconstriction and/or stridor associated with upper airway edema, tachycardia, tachypnea, dyspnea, diminishing lung sounds, diaphoresis, tripod positioning, facial swelling, hives, shock and perhaps a history of severe allergies. Respiratory involvement may or may not occur in all cases of anaphylaxis. Be aware of "silent chest" presentation in cases of severe respiratory distress associated with poor air exchange.

EMPHASIS ON PATIENT CARE

Maintenance of airway, adequate oxygenation, adequate perfusion

PRE-HOSPITAL MANAGEMENT



1. Primary Assessment - Assess airway, breathing and circulation and manage as indicated.
2. If transport capable, rapidly transport the patient to an appropriate medical facility. Consider ILS or ALS intercept.
3. History, physical exam, vital signs
4. For insect bites, remove stinger with scraping motion; do not pinch the stinger with tweezers.
5. If patient exhibits respiratory distress administer **EPINEPHRINE 1:1,000**:
   a. Adult - [0.3mg] IM using a pre-measured, pre-filled device or 0.3 ml dose limiting syringe –FR and Basic.
   b. Pediatric - [0.01mg/kg] IM using a pre-measured, pre-filled Pediatric device, or 0.3 dose limiting syringe – FR and Basic. Not to exceed the adult dose.
   c. If signs of anaphylaxis and hypoperfusion persist following the first dose of epinephrine, additional IM epinephrine can be repeated every 5-15 minutes at the doses noted above
   d. Consider administration of **ALBUTEROL** [5.0 mg], (DuoNeb® 2.5mg Albuterol+0.5mg Ipratropium)
6. Consider administration of **IPRATROPIUM** [0.5 mg]
7. Enroute, initiate a large bore IV/IO of an isotonic solution. Titrate to maintain adequate perfusion.
8. Consider **DIPHENHYDRAMINE**
   a. Adult - [25-50 mg] slow IV/IO at a rate of 1ml/min. or deep IM.
   b. Pediatric - [1mg/kg] slow IV/IO or deep IM with a max dose of 50 mg.
9. Consider administration of **SOLUMEDROL**:
   a. Adult - [125mg] IV/IO (Max dose 125mg)
   b. Pediatric - [1-2mg/kg] IV/IO (Max dose 125mg)
10. If there is a marked decrease in BP, or the patient is displaying signs & symptoms of respiratory and/or cardiovascular collapse (paramedic only):
    a. Administer **EPINEPHRINE 1:10,000** Mini-bolus

Or

    b. Administer **EPINEPHRINE drip**

ALLERGIC REACTION/ANAPHYLAXIS (Cont.)

EMT-P

11. Consider an **EPINEPHRINE** IV drip (0.5 mcg/kg/minute) when cardiovascular collapse (hypotension with altered mental status, pallor, diaphoresis and/or delayed capillary refill) is present despite repeated IM doses of epinephrine in conjunction with at least 60 ml/kg isotonic fluid boluses.

Note: Cardiac monitoring (at all levels) should be done for all patients receiving Epinephrine.

ALTERED LEVEL OF CONSCIOUSNESS

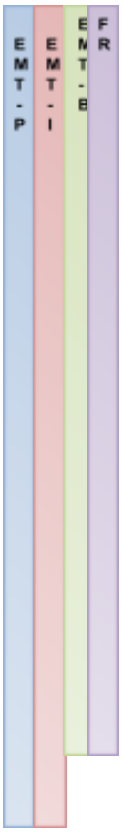
DESCRIPTION OF CONDITION

Signs and symptoms may include any or all of the following: limited or no response to verbal or painful stimuli, inappropriate responses, irrational behavior and unable to ascertain causation.

EMPHASIS ON PATIENT CARE

Airway management, adequate perfusion, identify treatable causes

PRE-HOSPITAL MANAGEMENT



1. Primary Assessment - Assess airway, breathing and circulation and manage as indicated. If occult trauma is possible, Consider spinal immobilization.
2. History, physical exam, vital signs
3. Cardiac monitoring, and obtain a 12 - lead EKG, if possible, for documentation
4. Consider possible causes:
   a. Diabetic Emergency
   b. Overdose
   c. CVA/TIA
   d. AMI
   e. Head Trauma
   f. Dehydration
   g. Syncope
   h. Hypo/Hyperthermia
   i. Shock or hypoperfusion
   j. CNS Infection
5. Perform glucometry
   a. If the glucose is < 60 mg/deciliter and/or associated signs and symptoms of Hypoglycemia, follow Diabetic Emergencies Guidelines.
6. If narcotic overdose is suspected, follow Overdose/ Poisoning Guidelines.
7. If transport capable, transport the patient without delay to an appropriate medical facility.
8. If no ILS/ALS capability, radio for ILS or ALS intercept.
9. If patient exhibits signs and symptoms of shock, follow Shock Guidelines.
10. Active cooling or warming if indicated.
11. If cardiac suspected, follow specific Cardiac Emergency Guidelines
12. Enroute, initiate IV/IO access (determined by patient condition) of an isotonic fluid, infused at flow rate to maintain adequate vital signs.

Note: In cases of altered mental status as a result of narcotic overdose, after Naloxone administration, the patient may rapidly awaken, become combative and experience vomiting. This should be Considered prior to insertion of an advanced airway device.

BEHAVIORAL / PSYCHIATRIC EMERGENCIES

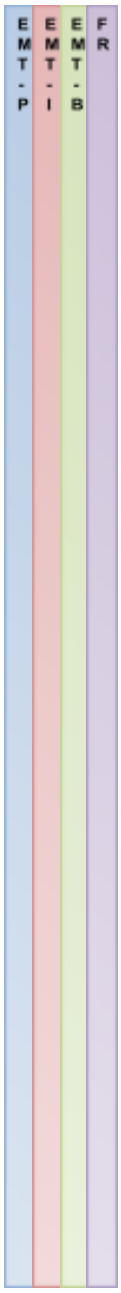
DESCRIPTION OF CONDITION

The patient will be alert, but may have an altered mental status with associated inappropriate actions. Signs and symptoms may include: inappropriate appearance and attitude, confused speech or inability to formulate thoughts, threatened or attempted suicide, depression, aggression, hallucinations, hysteria, extreme anxiety or any action that could cause harm to the patient or others.

EMPHASIS ON PATIENT CARE

Provider and patient safety, transport decisions

PRE-HOSPITAL MANAGEMENT



1. Primary Assessment - Assess airway, breathing and circulation and manage as indicated.
   a. If evidence of immediate danger exists:
      i. Protect yourself and others (leave the scene, if necessary).
      ii. Summon law enforcement.
      iii. Protect the patient from injury. Involuntary restraint should be Considered if indicated by patient behavior and if necessary to render care and protect rescuers.
   b. If no evidence of immediate danger exists.
      i. Remove the patient from stressful environment if possible.
      ii. **ONE EMS** provider should be responsible for Assessing, treating, and communicating with patient.
      iii. The **SAME EMS** provider should remain with patient during transport.
2. History, physical exam, vital signs
   a. Pertinent medical history, if possible including:
      i. Prescription and non-prescription drugs.
      ii. Underlying medical cause, for example hypoxia, hypoglycemia, trauma, metabolic derangement.
      iii. Previous psychiatric problems
3. Consider and treat all possible trauma/medical causes for aberrant behavior per guidelines. Be aware that medical illnesses including hypoglycemia, hypoxia, stroke, head injury, CNS infection, etc. may mimic psychiatric illness. Do not assume the patient's condition is purely psychiatric.
4. If transport capable, transport with patient consent.
   a. Transport the patient in position of comfort, if not contraindicated by injuries.
   b. Keep environment as quiet as possible.
5. If transport capable, transport without consent.
   a. Any person may be transported to an appropriate health care facility by an EMT, under medical direction, when the EMT makes a good faith judgment that the person is incapable of making an informed decision about his own safety or need for medical attention and is reasonably likely to suffer disability or death without the medical intervention available at such a facility. Follow: REFUSAL – Involuntary Restraint and Transport Guidelines.
   b. Law enforcement officers may transport the patient directly to a mental health facility if vital signs are within normal limits and the EMT does not suspect any other underlying traumatic or medical causes.

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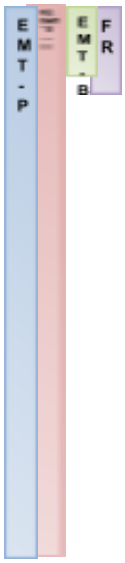
BEHAVIORAL / PSYCHIATRIC EMERGENCIES



6. Verbal de-escalation measures should be attempted first, prior to physical or chemical restraints. Use physical restraints should only be done for protection of EMS providers or the patient.
7. Chemical restraints with benzodiazepines may be Considered if the patient remains a danger to him or herself or to EMS personnel after attempts at verbal de-escalation. This may be done prior to physical restraints if EMS personnel determine that it is safer to attempt medications first. Consider:

MIDAZOLAM

   a. Adult:
      i. [5-10 mg] IN/IM. Max single dose is 10mg. May repeat once after 10 minutes
      ii. [2 to 5 mg] SIVP/IO. Repeat every 5 minutes as needed up to 10mg.
8. All patients who receive physical or chemical restraints must be continuously observed by ALS personnel. The use of sedating medications requires cardiac monitoring, end tidal CO2 monitoring if available, and frequent reassessment of the patient's airway and ventilation status.

BRIEF RESOLVED UNEXPLAINED EVENT (BRUE)

DESCRIPTION OF CONDITION

Brief resolved unexplained event (BRUE) is an event occurring in an infant when the observer reports a sudden, brief (<1 min, typically <20-30secs), and now resolved episode of any of the following:

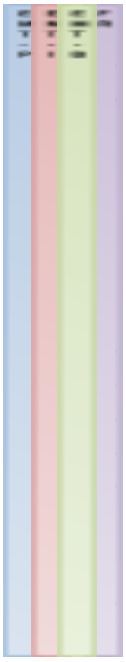
- Cyanosis or pallor
- Marked change in tone (hyper or hypotonia)
- Absent decreased or irregular breathing
- Altered level of responsiveness

BRUE should be suspected when there is no explanation for a qualifying event after conducting an appropriate history and physical exam.

EMPHASIS ON PATIENT CARE

Provider and patient safety, transport decisions

PRE-HOSPITAL MANAGEMENT



1. Primary Assessment - Assess airway, breathing and circulation and manage as indicated.

2. Obtain a complete history including
   a. Severity nature and duration of episode
   b. Any resuscitative measures taken by bystanders
   c. Any recent illness, infection or trauma
   d. Any history of seizures or evidence of seizure activity
   e. Chronic diseases, and medication history

3. Perform a comprehensive physical exam and obtain vital signs.

4. Check blood glucose if hypoglycemia is suspected, and treat as appropriate.

5. All infants < 1 year of age with possible BRUE should be transported for further medical evaluation. If the parent/guardian refuses EMS transport, contact MCEP prior to release.

6. Make every effort to obtain the contact information of who witnessed the event, and provide this information to the receiving hospital upon pt delivery.

DIABETIC EMERGENCIES

DESCRIPTION OF CONDITION

Signs and symptoms may include any or all of the following: Hypoglycemia - altered mental state, seizures, unconscious, drooling, skin is pale and moist, confused, agitated, sudden onset, headache. Hyperglycemia – hot skin, acetone/fruity breath, Kussmaul respirations, polyuria, polydipsia, and polyphagia. There may be a history of recent injury, illness or unusual exertion. Though usually occurring in IDDM, this may also occur in NIDDM. Consider other causes of symptoms.

EMPHASIS ON PATIENT CARE

Maintain adequate perfusion, glucose replacement if hypoglycemic, appropriate hydration for hyperglycemia.

PRE-HOSPITAL MANAGEMENT

EMT-P EMT-I EMT-B FR

1. Primary Assessment - Assess airway, breathing and circulation and manage as indicated.
2. History, physical exam, vital signs
3. Perform glucometry, if available.
   a. If **HYPOGLYCEMIC** (glucose < 60 mg/dl) with related symptoms; administer one of the following to increase blood sugar:
      i. If the patient is conscious, able to swallow and able to self-protect the airway, administer **ORAL GLUCOSE** [12-25 gm]. Pediatric dose is 0.5-1 gm/kg
      ii. If the patient is unconscious
         1) Initiate an IV/IO of an isotonic solution at TKO
         2) Administer
            50% DEXTROSE [12.5-25g], IV/IO into a free-flowing line.
            OR
            10% DEXTROSE SOLUTION [25g in 250mL] IV Drip into a free-flowing line
         3) Pediatric dose is **10% DEXTROSE SOLUTION** [25g in 250mL] 1gm/kg IV Drip.
         4) In neonates (BGL <45 mg/dl), use a **10% DEXTROSE SOLUTION** [25g in 250mL] at 0.5-1.0 gm/kg IV Drip.
         5) Repeat BGL in 5 minutes. Repeat as needed to keep glucose levels > 60 mg/dl.
      iii. If unable to obtain IV/IO access, Consider **GLUCAGON** [0.5-1 mg], IM

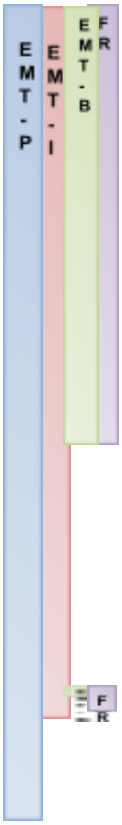
EMT-B FR

Note: After Glucagon administration, it is imperative that the patient receives supplemental glucose, orally (if conscious), or by IV access when obtainable. Glucagon will not work in all patients, especially those with liver disease. Patients receiving Glucagon must be transported to a medical facility.

      iv. Search for causes of hypoglycemia.
      v. If the patient continues to be symptomatic, transport to closest appropriate receiving facility.
      vi. Mandatory MCEP for refusal is required when the patient is not a diabetic, the patient is on oral hypoglycemic medications in the Sulfonylurea drug class or takes intermediate and/or long acting insulin.
      vii. If the patient's symptoms are resolved, consider release without transport if all of the following are true:

1.) Patient displayed an adequate response (normal vital signs, normal mentation, and a BGL within normal limits) to **one** dose of dextrose

DIABETIC EMERGENCIES (cont.)



2.) Patient has no acute co-morbid conditions such as: chest pain, shortness of breath, seizures, intoxication, also received naloxone. liver disease, kidney disease, or febrile illness.

3) Patient is only on a short acting insulin or insulin analog, or on a pre-mixed insulin analog (e.g. NovoLog® 70/30 or Humalog® 70/30)

4) Patient does **NOT** use oral medications to control blood glucose

5) Patient is not actively vomiting.

6) Patient can promptly obtain and will eat a carbohydrate meal

7) Patient or legal guardian refuses transport or patient and EMS providers agree transport not indicated

8) Patient is released to a competent adult for observation for 2-3 hours.

b. If hyperglycemia (glucose > 250 mg/dl) with symptoms of dehydration, vomiting, or altered level of consciousness or registers “HIGH”:

i. Protect the patient’s airway, administer high-flow oxygen and assist ventilations, if indicated.

ii. Initiate an IV/IO of an isotonic solution and bolus at 500-1,000cc for adult patients if associated dehydration or signs of poor perfusion and no signs of volume overload, otherwise TKO.

iii. If transport capable, transport to the closest appropriate medical facility.

4. If thiamine deficiency is suspected (i.e. chronic alcohol consumption, radiation therapy, malnourishment) Consider **THIAMINE** [100 mg] slow IV/IO or IM (adult), [10-25 mg] slow IV/IO or IM (Pediatric).

POISONING / OVERDOSE

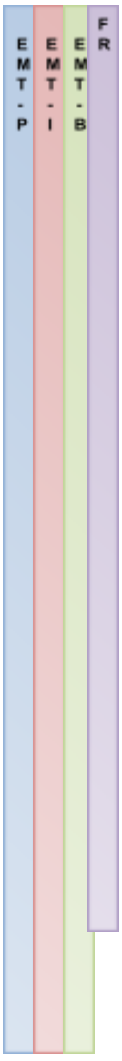
DESCRIPTION OF CONDITION

Evidence of inhalation, ingestion, or injection of a substance causing an untoward effect. Signs and symptoms may include any one or all of the following: respiratory depression, apnea, tachycardia, bradycardia, cardiac arrhythmias, altered mental status, unconsciousness, nausea, vomiting, and cardiac arrest.

EMPHASIS ON PATIENT CARE

Airway management, adequate oxygenation and maintain adequate perfusion. Remove patient from hazardous material environment/decontaminate to remove continued sources of absorption, ingestion, inhalation, or injection.

PRE-HOSPITAL MANAGEMENT



1. Make sure the scene is safe.
2. Consider Body Substance Isolation (BSI) or appropriate personal protective equipment (PPE)
3. Primary Assessment - Assess airway, breathing and circulation and manage as indicated.
4. History, physical exam, vital signs
   a. If medication overdose:
      i. Amount of and type
      ii. Time taken
      iii. Accidental vs. intentional
      iv. Mixed OD
      v. History of underlying illness, if appropriate
      vi. Treatment prior to arrival
   b. If poisoning:
      i. Identify substance and quantity taken
      ii. Method taken
      iii. Underlying conditions
      iv. Has the patient vomited?
5. Poison center should be engaged as early as reasonably possible to add in appropriate therapy and to track patient outcomes to improve knowledge of toxic effects. The national 24-hour toll-free telephone number to poison control centers is (800) 222-1222, and it is a resource for free, confidential expert advice from anywhere in the United States.
6. Gather all drug containers and take them with the patient to the hospital.
7. If transport capable, transport the patient as soon as possible to an appropriate medical facility.
8. Initiate IV/IO access for infusion of lactated ringers or normal saline and obtain blood samples if EMS management might change value (e.g. glucose, lactate, cyanide)
9. Fluid bolus (20 ml/kg) if evidence of hypoperfusion.

(Continued next page)

POISONING / OVERDOSE (Cont.)

10. Ingestion of caustic substances (acids and alkali)
    a. Symptomatic dystonia, extrapyramidal signs or symptoms, or mild allergic reactions Consider administration of **DIPHENHYDRAMINE**
       i. Adult: 25 mg IV/IO or IM
       ii. Pediatric: 1 mg/kg IV/IO or IM (maximum single dose of 25 mg)
11. If narcotic overdose is suspected with serious signs and symptoms:
    a. Administer **NALOXONE**:
       i. Adult: [0.4 mg – 2.0 mg] IM/SQ (2.0 mg total dose). May be repeated at 2 – 3 minutes, if needed. [2mg (1mg per naris)] IN
       ii. Pediatric: [0.1 mg/kg] IM/SQ not to exceed 2.0 mg
       iii. Neonate: [0.1 mg/kg] IM/SQ not to exceed 2.0 mg
       iv. If the patient remains unresponsive, secure definitive airway, (follow Respiratory Arrest/Distress Guidelines) and check BGL.

Note: Much higher doses should be given to patients with suspected propoxyphene (Darvon®), pentazocine (Talwin®), and Fentanyl overdoses. Contact MCEP for higher doses.

12. If carbon monoxide poisoning is suspected:
    a. Remove patient from toxic environment
    b. Apply a cardiac monitor, examine rhythm strip for arrhythmias, and Consider obtaining a 12-lead EKG
    c. Check blood glucose level
    d. Monitor pulse oximetry and ETCO2 for respiratory decompensation
    e. 100% oxygen via non-rebreather mask or bag valve mask
13. If organophosphate poisoning or other chemical nerve agent is suspected, i.e. increased salivation, lactation, urination, defecation, and gastrointestinal cramping and emesis:
    a. Administer **ATROPINE** [2 mg] and **PRALIDOXIME (2PAM)** [600 mg] using an IM auto-injector device.

    (**Paramedic Only:** If auto-injector device is unavailable, administer **ATROPINE** [2.0 mg – until symptoms abate] IV/IO/IM.)
14. If tricyclic anti-depressant (TCA) or salicylate (aspirin) overdose is suspected with serious signs/symptoms,widening of the QRS complexes, PVC's, hypotension, seizures, dysrhythmias, or a combination of any of these, Consider **SODIUM BICARBONATE** [1 mEq/kg] slow IV/IO.
15. If patient presents with a calcium channel blocker overdose:
    a. Adult - administer **CALCIUM CHLORIDE** (CaC12) 10% [10-20 ml] slow IV/IO. Do not exceed 2ml/min.
    b. Pediatric - administer **CALCIUM CHLORIDE** (CaC12) 10% [0.1 – 0.2 ml/kg] slow IV/IO. Do not exceed 2 ml/min.

NAUSEA/VOMITING

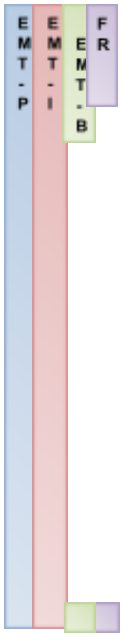
DESCRIPTION OF CONDITION

The patient is experiencing discomfort secondary to nausea and vomiting.

EMPHASIS ON PATIENT CARE

Decrease discomfort secondary to nausea and vomiting

PRE-HOSPITAL MANAGEMENT



1. Primary Assessment - Assess airway, breathing and circulation and manage as indicated.
2. History and physical examination focused on potential causes of nausea and vomiting (e.g. gastrointestinal, cardiovascular, gynecologic)
3. Consider Acupressure
4. Establish IV/IO access for a medication line if needed.
5. Consider an anti-emetic for nausea and/or vomiting:

ONDANSETRON (Zofran®)

   a. Adult: [4mg] IV/IO/PO/IM
   b. Pediatric: [0.05-0.1 mg/kg] IV/IO/PO/IM (Max dose 4mg)

PROMETHAZINE (Phenergan®)

   a. Adult: [12.5-25 mg] PO,IV/IO, IM

6. Consider Normal Saline bolus of 500 ml unless contraindicated (e.g. h/o CHF, renal failure)
   a. May repeat as indicated
   b. Consider 10 – 20 ml/kg IV/IO fluid unless contraindicated
7. If transport capable, transport the patient to an appropriate medical facility

Note: Ondansetron is preferred in children for the treatment of nausea and vomiting.

Note: For dystonia/ akathisia induced by an anti-emetic administer **DIPHENHYDRAMINE**:

   a. Adult: 25-50 mg IV/IO/IM/PO
   b. Pediatric: 1-2 mg/kg IV/IO/IM/PO (maximum 50 mg)

Note: Nausea and vomiting are symptoms of illness – in addition to treating the patient's nausea and vomiting a thorough history and physical are key to identifying what may be a disease in need of emergent treatment (e.g. bowel obstruction, myocardial infarction, pregnancy)

SEIZURE

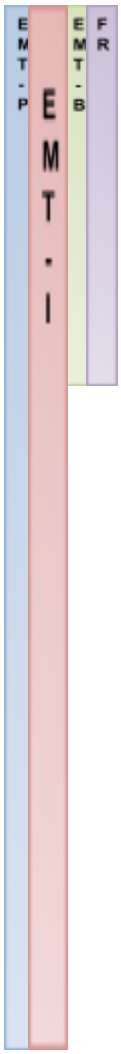
DESCRIPTION OF CONDITION

Most seizures spontaneously end within 5 minutes with a postictal state of varying length, with unconsciousness or altered LOC. These seizures do not require advanced level intervention. Status epilepticus exists when witnessed seizure activity continues for > 10 minutes or multiple seizures recur without a return to full mental capacity. These types of seizures do require paramedic level intervention. Signs and symptoms may include any one or all of the following: may experience an aura, violent spasms of muscles lasting up to 3 - 5 minutes, incontinence, increased salivation, postictal phase, possible history of drug usage for seizures.

EMPHASIS ON PATIENT CARE

Maintain adequate airway, adequate oxygenation, protect patient from harm. Cessation of seizures in the prehospital setting, minimizing adverse events in the treatment of seizures in the prehospital setting and minimizing seizure recurrence during transport.

PRE-HOSPITAL MANAGEMENT



1. Primary Assessment - Assess airway, breathing and circulation and manage as indicated.
2. History, physical exam, vital signs
3. Apply oxygen via face mask or non-rebreather mask. Administer bag-valve mask ventilation if oxygenation/ventilation are compromised.
4. If transport capable, initiate transport to an appropriate medical facility, Consider ILS/ALS intercept.
    a. Determine blood glucose level
        i. Check capillary blood glucose level.
        ii. If < 60 mg/dl, refer to Diabetic Emergencies guideline for treatment recommendations.
5. Initiate a large bore IV/IO of an isotonic solution at a TKO rate if IV medications are needed.
6. Consider administration of an anticonvulsant medication if seizure is prolonged (greater than 5 minutes) or if more than two seizures reoccur without an intervening lucid period.

MIDAZOLAM

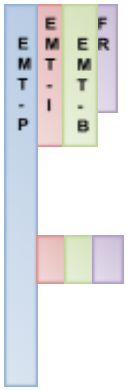
a. Adult:
    i. [5-10 mg] IN/IM. Max single dose is 10mg. May repeat once after 10 minutes
    ii. [2 to 5 mg] SIVP/IO. Repeat every 5 minutes as needed up to 10mg.
b. Pediatric:
    i. [0.2 mg/kg] IN/IM. Max single dose is 5mg. May repeat once after 10 min.
    ii. [0.1 mg/kg] SIVP/IO. Repeat every 5 minutes as needed, up to 10mg.

DIAZEPAM

a. Adults
    i. [2-10 mg] IV/IO/IM, slow with IV running open
b. Pediatric:
    i. [0.05–0.1 mg/kg] IV/IO
    ii. Apnea in children after diazepam administration may occur.

(Continued next page)

SEIZURE (Cont.)



7. If there is a concern for Febrile Seizures, Consider the following interventions after stopping the seizure:
   a. Removal of excess layers of clothing
   b. Administer Acetaminophen [15 mg/KG PO, maximum dose of 650mg, if able to swallow.
8. If the patient is in the third trimester of pregnancy or recently post-partum, Consider magnesium sulfate. Refer to Childbirth Complications Guidelines
9. Cardiac monitoring

Note: Buccal, intranasal, or intramuscular routes for benzodiazepines are preferred as first line for administration of anticonvulsants. Rectal administration of anticonvulsants is not recommended. Intravenous (IV) placement should follow the initial treatment of seizures.

SUSPECTED STROKE / TRANSIENT ISCHEMIC ATTACK

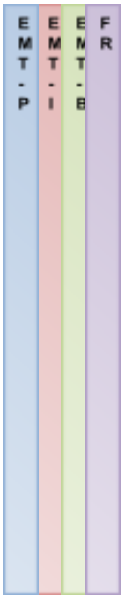
DESCRIPTION OF CONDITION

Signs and symptoms may include: Unilateral facial droop, or any of the following: altered mental status, unilateral weakness or paralysis, difficulty maintaining oral secretions, unequal pupils or visual disturbance, difficulty in speaking, gait or proprioception disturbances, elevated BP, headache, and/or seizures. Patient may have a past history of CVA or TIA.

EMPHASIS ON PATIENT CARE

Maintain adequate perfusion, adequate oxygenation, and transport

PRE-HOSPITAL MANAGEMENT



1. Primary Assessment - Assess airway, breathing and circulation and manage as indicated.
2. Provide oxygen only if O2 saturation < 94%. Titrate to > 94%
3. If seizure activity present, refer to Seizure guideline
4. Perform serial pre-hospital stroke Assessments (Cincinnati, Los Angeles, FAST) and LVO scale (RACE, C-STAT, LAMS)
5. History – In addition to standard past and current medical history, establish timeline of onset of symptoms, patient's last known well or last seen at their baseline, blood glucose level, blood thinner usage (especially if in addition to or other than aspirin or clopidogrel), presence or lack of headache/speech difficulties, weakness in arms or legs, etc.
6. If transport capable, transport the patient to an appropriate medical facility, preferably a Stroke Center. Early notification of the facility is important.
7. Consider ALS intercept or utilization of aeromedical resources if symptomatic, and Consider bypassing a non-stroke capable facility.
8. Enroute, initiate an IV/IO of isotonic solution at a TKO rate. **(EMT-I and Paramedic only).** Avoid multiple IV attempts
9. Acquire 12-lead EKG if possible

Note: Patients presenting with signs/symptoms of stroke should be transported to the nearest stroke center or, if not available, an acute stroke ready hospital.

Note: Do not treat hypertension in the pre-hospital setting.

SYNCOPE (FROM UNKNOWN CAUSE)

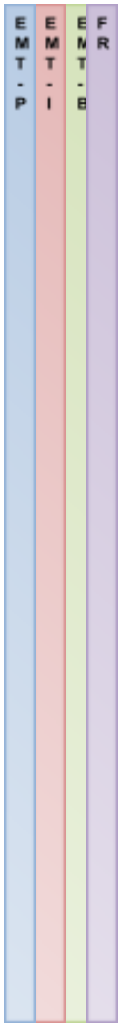
DESCRIPTION OF CONDITION

Syncope, “Fainting”, is indicated by both the loss of consciousness and the loss of postural tone. Syncope typically is abrupt in onset and resolves equally quickly. EMS providers may find the patient awake and alert on initial evaluation.

EMPHASIS ON PATIENT CARE

1. Stabilize and resuscitate when necessary
2. Initiate monitoring and diagnostic procedures
3. Transfer for further evaluation

PRE-HOSPITAL MANAGEMENT



1. Primary Assessment - Assess airway, breathing and circulation and manage as indicated.
2. History, including conditions leading to the event, physical exam, and vital signs
3. Consider and rule out conditions including: (See specific guidelines)
   a. Diabetic Emergency
   b. Poisoning/Overdose
   c. Cardiac Emergency
   d. Stroke/TIA
   e. Head Injury
   f. Bleeding
   g. Dehydration
   h. Seizure
4. Provide oxygen only if O2 saturation < 94%. Titrate to > 94%
5. Evaluate for hemorrhage and treat for shock if indicated
6. Evaluate for trauma and Consider spinal immobilization if indicated.
7. Obtain blood glucose and treat per Hypoglycemia/Hyperglycemia guideline as indicated
8. If transport capable, transport the patient to an appropriate medical facility.
9. Enroute, initiate an IV/IO of an isotonic solution and infuse at a flow rate to maintain adequate vital signs. **(EMT-I and EMT-P only)**
10. Cardiac Monitor and treat arrhythmias (if present refer to appropriate guideline)
11. 12-lead EKG

Note: By being most proximate to the scene and to the patient’s presentation, EMS providers are commonly in a unique position to identify the cause of syncope. Consideration of potential causes, ongoing monitoring of vitals and cardiac rhythm as well as detailed exam and history are essential pieces of information to pass onto hospital providers.

Note: All patients suffering from syncope deserve hospital level evaluation, even if they appear normal with few complaints on scene.

RESPIRATORY ARREST/DISTRESS

GENERAL RESPIRATORY GUIDELINES

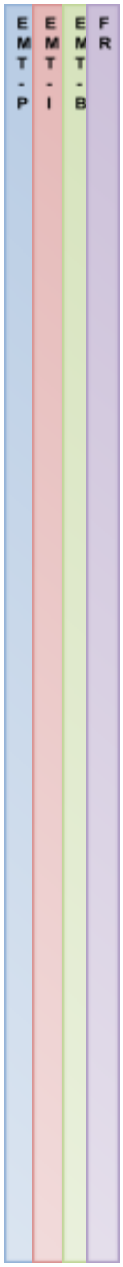
DESCRIPTION OF CONDITION PATIENT PRESENTATION

The patient is not breathing, not breathing adequately, or experiencing agonal respirations with inadequate rate and/or depth.

EMPHASIS ON PATIENT CARE

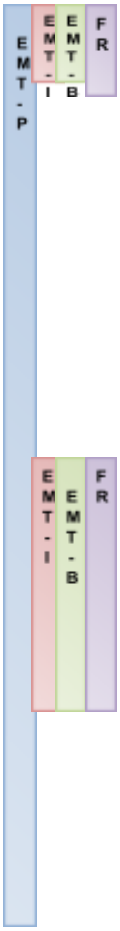
Recognition of respiratory distress, maintenance of a patent airway and provide effective oxygenation and ventilation.

PRE-HOSPITAL MANAGEMENT



1. Primary Assessment - Assess airway, breathing and circulation and manage as indicated.
   a. History: Assess for
      i. Time of onset of symptoms
      ii. Associated symptoms
      iii. History of asthma or other breathing disorders
      iv. Choking or other evidence of upper airway obstruction
      v. History of trauma
   b. Physical Examination: Assess for
      i. Shortness of breath
      ii. Abnormal respiratory rate and/or effort
      iii. Use of accessory muscles
      iv. Quality of air exchange, including depth and equality of breath sounds
      v. Wheezing, rhonchi, rales, or stridor
      vi. Cough
      vii. Abnormal color (cyanosis or pallor)
      viii. Abnormal mental status
      ix. Evidence of hypoxemia
      x. Signs of a difficult airway (short jaw or limited jaw thrust, small thyromental space, upper airway obstruction, large tongue, obesity, large tonsils, large neck, craniofacial abnormalities, excessive facial hair)
2. If respirations are inadequate or absent, maintain or establish airway patency by:
   a. Non-Invasive Ventilation Techniques
      i. Positioning maneuvers as indicated by patient condition
      ii. Use continuous positive airway pressure (CPAP), bi-level positive airway pressure (BiPAP), intermittent positive pressure breathing (IPPB), humidified high-flow nasal cannula (HFNC), and/or bi-level nasal CPAP for severe respiratory distress or impending respiratory failure. (CPAP only at First Responder level)
      iii. Use bag-valve mask (BVM) ventilation with supplemental oxygen in the setting of respiratory failure or arrest.
   b. Oropharyngeal airways (OPA) and nasopharyngeal airways (NPA)
      i. Consider the addition of an NPA and/or OPA to make BVM more effective, especially in patients with altered mental status. (Continued next page)

GENERAL GUIDELINES (Cont.)



c. Supraglottic airways (SGA) or extraglottic devices (EGD)
   i. Consider the use of an SGA or EGD if BVM is not effective in maintaining oxygenation and/or ventilation.

d. Endotracheal Intubation (for patients 13 years of age and older)
   i. When less-invasive methods (BVM, SGA/EGD placement) are ineffective, however, use endotracheal intubation to maintain oxygenation and/or ventilation
   ii. Other indications may include potential airway obstructions, severe burns, multiple traumatic injuries, altered mental status or loss of normal protective airway reflexes
   iii. Monitor clinical signs, pulse oximetry, and capnography for the intubated patient
   iv. Video laryngoscopy enhances intubation success rates and should be used when available. Fiberoptic-assisted endotracheal intubation may be needed if the vocal cords cannot be visualized by other means.

e. Airway adjuncts should be monitored for proper placement.

f. Pulse oximetry (including room air SAO2), end-tidal C02 detectors (ETC02) and capnometry/capnography is recommended.

g. Suction (oropharynx, nasopharynx, trachea or stoma)

h. If transport capable, transport to the closest appropriate hospital for airway stabilization should occur when respiratory failure cannot be successfully managed in the prehospital setting.

i. Gastric decompression may improve oxygenation and ventilation, so it should be Considered when there is obvious gastric distention or when more invasive airway management is required.

j. When patients cannot be oxygenated/ventilated effectively by previously mentioned interventions, the provider should Consider cricothyroidotomy if the risk of death for not escalating airway management seems to outweigh the risk of a procedural complication.

Note: Avoid excessive pressures or volumes during BVM

Note: Once a successful SGA/EGD placement or intubation has been performed, obstruction or displacement of the tube can have further deleterious effects on patient outcome. Tubes should be secured with either a commercial tube holder or tape.

ASTHMA, COPD (EMPHYSEMA, CHRONIC BRONCHITIS)

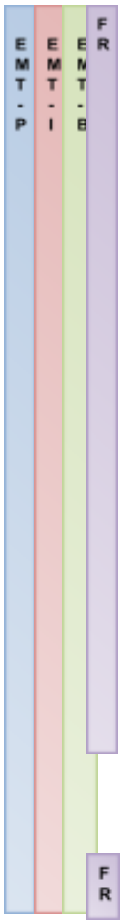
DESCRIPTION OF CONDITION

Any constriction of the small airways of the lungs resulting in broncho-constriction, increased secretions and wheezing. The patient will almost always have a pertinent history and will be suffering from some degree of dyspnea. Wheezing may not be present and lack of wheezing with decreasing breath sounds is often a sign of impending respiratory arrest. Signs and symptoms may include any or all of the following: inspiratory wheezing, rapid and/or shallow respiratory rate, nasal flaring, and use of accessory muscles. Patient may complain of difficulty in breathing, and cyanosis may be present. LOC may be decreased, diminishing or silent bilateral lung sounds, wheezing, stridor, and/or sternal retractions. The patient may be tachycardic, diaphoretic, with tripod positioning. "See Saw" breathing may be present in children.

EMPHASIS ON PATIENT CARE

Airway maintenance, alleviate respiratory distress due to bronchospasm, adequate oxygenation. Promptly identify and intervene for patients who require escalation of therapy. Deliver appropriate therapy by differentiating other causes of respiratory distress.

PRE-HOSPITAL MANAGEMENT



1. Primary Assessment - Assess airway, breathing and circulation and manage as indicated.
2. History, physical exam, vital signs
3. Monitor pulse oximetry and end-tidal CO2 (ETCO2) as an adjunct to other forms of respiratory monitoring.
4. Consider a 12-lead EKG after treating the respiratory distress if there are concerns for cardiac involvement and/or ischemia.
5. Give supplemental oxygen. Escalate from a nasal cannula to a simple face mask to a non-rebreather mask as needed, in order to maintain normal oxygenation.
6. Suction the nose and/or mouth (via bulb, Yankauer, suction catheter) if excessive secretions are present.
7. If patient is in moderate to severe respiratory distress and acute asthma or emphysema is suspected:
   a. Adults - administer **ALBUTEROL** [5.0 mg] ~~or **LEVALBUTEROL** [0.63 – 1.25 mg]~~, diluted in 3 cc of a sterile isotonic solution, over a 5 - 15 minute period. Some patients may need continuous nebulizer treatment during the entire transport. Providers are encouraged to deliver nebulized **ALBUTEROL** via bag valve mask for patients who are unable to provide effective respiratory exchange. Do not delay transportation waiting for the medication to take effect.
   b. Pediatric - administer **ALBUTEROL** [1.25-2.5 mg] or **LEVALBUTEROL** [0.31-.63], diluted in 3 cc of a sterile Isotonic Solution over a 5-15 minute period, repeated as needed.
   c. Consider **IPRATROPRIUM** (Basic, Intermediate & Paramedic only) [250-500 mcg (0.25 - 0.5mg)] in conjunction with Albuterol. Not recommended for Pediatrics.
8. If transport capable, initiate transport to an appropriate medical facility. Consider ILS or ALS intercept.

(Continued next page)

ASTHMA, COPD (EMPHYSEMA, CHRONIC BRONCHITIS) (Cont.)

EMT-P EMT-I

9. Initiate an IV/IO of isotonic solution if there are clinical concerns of dehydration in order to administer fluids, or when administering IV medications.
   a. Consider administering:

METHYLPREDNISOLONE

   i. Adult [2mg/kg, max dose 125mg] IV/IO
   ii. Pediatric [2mg/kg, max dose 125mg] IV/IO

EMT-B FR

10. If no improvement and the patient is refractory to other treatments, administer:

EPINEPHRINE

   a. Adult - 1:1,000 - [0.3mg] IM using:
      i. Auto injector device
      ii. Pre-measured, pre-filled Pediatric device – FR and Basic.
   b. Pediatrics – [0.01 mg/kg to a max dose of 0.3 mg] IM using:
      i. Pedi auto injector device
      ii. Pre-measured, pre-filled Pediatric device – FR and Basic.

11. Consider **MAGNESIUM SULFATE**
   a. Adult: [2.0 gms] SIVP/IO in adults.
   b. Pediatric: Status asthmaticus only – [25-50 mg/kg to a max of 2.0 grams] over 10-20 minutes

EMT-I EMT-B FR

12. Improvement of Oxygenation and/or Respiratory Distress with Non-invasive Airway Adjuncts
   a. Non-invasive positive pressure ventilation via continuous positive airway pressure (CPAP) or biphasic positive airway pressure (BiPAP – Paramedic only) should be administered for severe respiratory distress.
   b. Bag-valve-mask ventilation should be utilized in children with respiratory failure.
13. Supraglottic Devices and Intubation (for patients 13 years of age and older)
   a. Supraglottic devices, and intubation should be utilized only if bag-valve-mask ventilation fails. The airway should be managed in the least invasive way possible.

Note: Do not delay transport while administering Albuterol. You may continue treatment Enroute to hospital. Monitor respiratory rate and depth closely.

Note: Avoid hyper-inflation of the chest and lungs during positive pressure ventilation.

CROUP

DESCRIPTION OF CONDITION

The most common age group affected is 1 to 3 years but this process can develop in any age patient. The onset is slow. Signs and symptoms are: hoarse voice, harsh "seal bark" cough, stridor upon inhalation, and high-pitched squeaking sounds may be present. In addition, other signs of respiratory distress may be present. Always Consider the possibility of foreign body aspiration.

EMPHASIS ON PATIENT CARE

Prevent agitation to the patient, airway management, and adequate oxygenation (humidified)

PRE-HOSPITAL MANAGEMENT

1. Primary Assessment - Assess airway, breathing and circulation and manage as indicated.
2. Rule out other potential causes including:
   a. Anaphylaxis
   b. Asthma
   c. Bronchiolitis (wheezing < 2 years of age)
   d. Foreign body aspiration
   e. Submersion/drowning
3. Monitoring
   a. Pulse oximetry and end-tidal CO2 (ETCO2) should be routinely used as an adjunct to other forms of respiratory monitoring.
   b. Perform EKG only if there are no signs of clinical improvement after treating respiratory distress.
4. Airway
   a. Give supplemental oxygen. Escalate from a nasal cannula to a simple face mask to a non-rebreather mask as needed, in order to maintain normal oxygenation.
   b. Suction the nose and/or mouth (via bulb, Yankauer®, or suction catheter) if excessive secretions are present.
5. Inhaled Medications
   a. **EPINEPHRINE** [Epi 1:1000 5ml] (equivalent to 0.5ml 2.25% racemic epi) nebulized. This should be administered by advanced life support (ALS) providers to all children in respiratory distress with signs of stridor at rest. This medication should be repeated at this dose with unlimited frequency for ongoing distress.
   b. Humidified oxygen or mist therapy is **not** indicated.
6. Utility of IV Placement and Fluids
   a. Defer IV placement unless needed for clinical concerns of shock administering IV medications.

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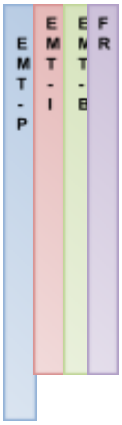
CROUP (Cont.)



7. Improvement of Oxygenation and/or Respiratory Distress with Non-invasive Airway Adjuncts
   a. Continuous positive airway pressure (CPAP) should be administered for severe respiratory distress
   b. Bag-valve-mask ventilation should be utilized in children with respiratory failure
8. Supraglottic Devices and Intubation (for patients 13 years of age and older)
   a. Supraglottic devices and intubation should be utilized only if bag-valve-mask ventilation fails. The airway should be managed in the least invasive way possible.
9. If transport capable, initiate transport to an appropriate medical facility. Consider ALS intercept.
10. History, physical exam, vital signs
11. Do not attempt to intubate adults if there is adequate air exchange.

EPIGLOTTITIS

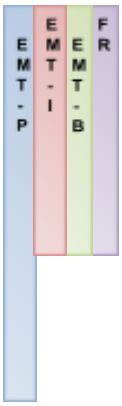
DESCRIPTION OF CONDITION

This process can develop in any age patient. The onset is usually rapid. Signs and symptoms are: Pain on swallowing, high fever (102 to 104) degrees Fahrenheit, drooling, mouth breathing, stridor upon inhalation, changes in voice quality, tripod positioning, chin and neck thrust forward. In addition, other signs of respiratory distress may be present. Since the development of Haemophilus B immunization, the incidence of epiglottitis has been reduced significantly, however it should still be Considered for patients presenting with the usual signs and symptoms.

EMPHASIS ON PATIENT CARE

Prevent agitation to the patient, airway management, and adequate oxygenation (humidified)

PRE-HOSPITAL MANAGEMENT



1. Primary Assessment - Assess airway, breathing and circulation and manage as indicated.
   a. Do not attempt to place anything, including airway adjuncts or fingers, in the patient's mouth. This may lead to complete airway block or bleeding into airway.
   b. Allow the patient to maintain a position of comfort for optimal airway positioning
2. If transport capable, rapidly and carefully transport the patient, allowing the patient to maintain a position of comfort, to the nearest medical facility. Consider ALS intercept.
3. including: History, physical exam, and vital signs
4. Do not attempt to intubate adults if there is adequate air exchange.
5. Intubation may be very difficult due to swelling of the epiglottis and surrounding structures. Well-performed BVM ventilation can often provide adequate oxygenation until arrival at the hospital.

Note: Assisted ventilation of any type can agitate the patient causing complete airway obstruction. Judicious observation and intervention are best, reserving aggressive airway interventions for children who proceed to respiratory arrest.

OBSTRUCTED AIRWAY

DESCRIPTION OF CONDITION

The patient has a complete or partial obstruction of the airway due to a foreign body or as a result of swelling from anaphylaxis, croup, or epiglottitis. The patient may have an unknown illness or injury and cannot be ventilated after the airway has been properly opened.

EMPHASIS ON PATIENT CARE

Rapid recognition of obstruction and the provision of necessary interventions to quickly and safely establish a patent airway, and provide effective oxygenation and ventilation.

PRE-HOSPITAL MANAGEMENT

EMT-P EMT-I EMT-B FR

3. Responsive patients.
   a. Able to talk or cough:
      i. Reassure victim.
      ii. Encourage coughing.
      iii. Oxygen 15 LPM non-rebreather mask.
      iv. Transport immediately
   b. Unable to talk or cough, or weak ineffective cough:
      i. Adults and Children >=1year - deliver repeated abdominal thrusts until obstruction relieved or the victim becomes unconscious. (Follow AHA Guidelines)
      iii. Infants <1 year of age, do alternating 5 back slaps and 5 chest thrusts. (Follow AHA Guidelines)
      iv. Chest thrusts are preferred on advanced pregnancy and marked obesity.
      v. If transport capable, transport immediately and notify Medical Control
4. Unresponsive patients
   a. Adults and Children >=1year
      i. Gently lower patient to the ground if you see that he is becoming unresponsive.
      ii. Begin CPR, starting with chest compressions. Do not check for a pulse.
      iii. Attempt ventilation. Each time you open the airway to give breaths, open the mouth wide and look for the object.
         1) If you see an object, attempt to remove it.
         2) If you do not see an object, continue CPR.
   b. Infants < 1 year of age
      i. Begin CPR, starting with chest compressions. Do not check for a pulse.
      ii. Each time you open the airway to give breaths look for the object in the back of the throat.
         1) If you see an object, attempt to remove it.
         2) If you do not see an object, continue CPR
   c. Do not perform finger sweeps.
   d. After removal of obstruction, provide airway management and circulatory support as indicated. Initiate transport
   e. If still obstructed, visualize with laryngoscope, remove obstruction with Magill forceps.
   f. If unable to clear airway, Consider surgical cricothyrotomy in adults and children >12.

PULMONARY EDEMA

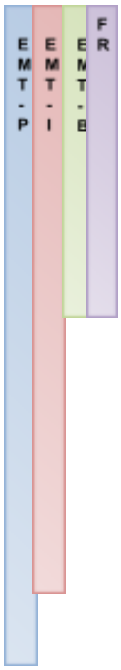
DESCRIPTION OF CONDITION

Patient presenting with signs, symptoms, and history of moderate to severe dyspnea and or poor perfusion secondary to pulmonary edema. Emphasis will be placed on complete Assessment of patient and history with treatment of the underlying cause if possible. Caution should be taken in getting a complete history since many of these patients are taking numerous medications for chronic conditions.

EMPHASIS ON PATIENT CARE

Decrease respiratory distress and work of breathing, maintaining adequate oxygenation and perfusion, and direct supportive efforts towards decreasing afterload and increasing preload.

PRE-HOSPITAL MANAGEMENT



1. Primary Assessment - Assess airway, breathing and circulation and manage as indicated.
2. If transport capable, initiate transport to an appropriate medical facility. Consider ILS or ALS intercept.
3. History, physical exam, vital signs
4. Provide supplemental O2 as needed to maintain O2 saturation > 94%.
5. Consider CPAP
6. Consider BiPAP
7. Obtain 12-lead EKG after initial management of respiratory distress
8. Enroute, initiate an IV/IO of an isotonic solution and infuse at a KVO rate.
9. Closely monitor IV drip rate. **DO NOT OVERHYDRATE** the patient.
10. Evaluate dysrhythmias and treat per appropriate guidelines.
11. Consider **NITROGLYCERIN** [0.4mg] SL every 5 minutes, if patient is in severe distress, and BP > 100 systolic, HR > 60.
    a. If chest pain is present or there is evidence of cardiac ischemia on the EKG, refer to Chest Pain guideline.
12. Consider intubation for patients 13 years of age and older, positive pressure ventilation, and ET suctioning as needed.

SMOKE INHALATION INJURIES

DESCRIPTION OF CONDITION

Patient is exposed to a toxic environment and there is potential of inhalation of a toxic substance.

EMPHASIS ON PATIENT CARE

Removal of patient from the toxic environment and assure adequate ventilation, oxygenation and correction of hypo perfusion.

PRE-HOSPITAL MANAGEMENT

EMT-P EMT-I EMT-B FR

1. Primary Assessment - Assess airway, breathing and circulation and manage as indicate
2. Consider Body Substance Isolation (BSI) or appropriate personal protective equipment (PPE)
3. Remove patient from toxic environment
4. Primary Assessment - Assess airway, breathing and circulation and manage as indicated.

See Respiratory Arrest/Distress Guideline

5. History, physical exam, vital signs
6. 100% oxygen via non-rebreather mask or bag valve mask
7. Airway compromise must be anticipated in patients who have visible signs of smoke inhalation such as soot around the nostrils and mouth, burns to the face or neck or signs of respiratory distress.
8. Apply a cardiac monitor, examine rhythm strip for arrhythmias, and Consider obtaining a 12-lead EKG
9. Check blood glucose level
10. Monitor pulse oximetry and ETCO2 for respiratory decompensation
11. If transport capable, transport the patient as soon as possible to an appropriate medical facility. Consider ALS.
12. Establish IV/IO access.
13. If Carbon Monoxide exposure is suspected, place the patient on high flow oxygen

Note: Do not look for cherry red skin coloration as an indication of carbon monoxide poisoning as this is usually a morgue finding

Note: CO oximeter devices may yield inaccurate low/normal results for patients with CO poisoning. All patients with probable or suspected CO poisoning should be transported to the nearest appropriate hospital, based on their presenting signs and symptoms

SHOCK

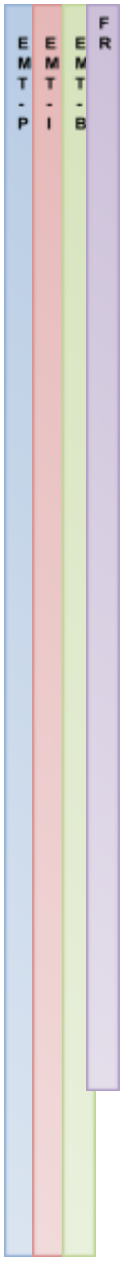
DESCRIPTION OF CONDITION

Signs and symptoms may include any or all of the following: disoriented, weak, tachycardia, systolic < 90, weak or absent radial pulses, cool and clammy skin, diaphoresis, pallor, nausea and vomiting, rapid and shallow respiration, and have a significant injury, mechanism of injury or illness.

EMPHASIS ON PATIENT CARE

Maintain adequate perfusion, oxygenation

PRE-HOSPITAL MANAGEMENT



1. Primary Assessment - Assess airway, breathing and circulation and manage as indicated.
2. History, physical exam, vital signs including patient temperature.
3. Signs of poor perfusion such as one or more of the following:
   a. Altered mental status
   b. Delayed/flash capillary refill
   c. Hypoxia (pulse oximetry < 94%)
   d. ETCO2 < 25 mm Hg
   e. Decreased urine output
   f. Respiratory rate > 20 in adults or elevated in children (see normal vital signs table)
   g. Hypotension for age (lowest acceptable systolic blood pressure in mm Hg):
      i. < 1 year: 60
      ii. 1-10 years: (age in years) (2) +70
      iii. > 10 years: 90
   h. Tachycardia for age
   i. Weak, decreased or bounding pulses
   j. Cool/mottled or flushed/ruddy skin
4. Potential etiologies of shock:
   k. Hypovolemia (poor fluid intake, excessive fluid loss (e.g. bleeding, hyperglycemia excessive diuretics, vomiting, diarrhea)
   l. Sepsis (temperature instability: < 36 C or 96.8 F; > 38.5 C or 101.3 F; and/or tachycardia, warm skin, tachypnea
      i. Hospital Sepsis Alert
   m. Anaphylaxis (urticaria, nausea/vomiting, facial edema, wheezing)
   n. Signs of heart failure (hepatomegaly, rales on pulmonary exam, extremity edema, JVD)
5. Administer oxygen (titrate oxygen to SPO2 ≥ 94%)
6. ETCO2 monitoring
7. If transport capable, transport the patient without delay to an appropriate medical facility.
8. If available, perform point of care testing; BGL and serum lactate (if available).
9. Consider antipyretics for fever if able to tolerate PO.
   a. Acetaminophen (15 mg/kg; max dose of 650 mg)
   c. Ibuprofen (10 mg/kg; max dose of 600 mg) if over 6 months of age.

(Continued next page)

SHOCK (Cont.)

EMT-I

10. Establish IV access; if unable to obtain within 2 attempts or < 90 seconds, place an IO needle.
11. IV fluids (20 ml/kg isotonic fluid; max of 1 liter) over < 15 minutes,
    a. Use a pressure infuser or
    b. Use a push-pull method of drawing up the fluid in a syringe and pushing it through the IV. May repeat up to 3 times
12. If there is a history of adrenal insufficiency, give:

METHYLPREDNISOLONE

i. Adult [2mg/kg, max dose 125mg] IV/IO

iii. Pediatric [2mg/kg, max dose 125mg] IV/IO

13. Consider Vasopressors (shock unresponsive to IV fluids)

DOPAMINE, [5-20 mcg/kg/minute] IV/IO

a. For anaphylactic shock (see Allergic Reaction/Anaphylaxis guidelines).

TRAUMA EMERGENCIES

GENERAL TRAUMA GUIDELINES

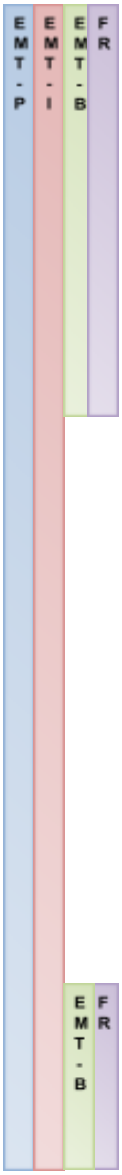
DESCRIPTION OF CONDITION

Variable signs and symptoms in a patient with a history of blunt or penetrating trauma.

EMPHASIS ON PATIENT CARE

Rapid Assessment and management of life-threatening injuries, safe movement of patient to prevent worsening injury severity and rapid and safe transport to the closest, most appropriate facility

PRE-HOSPITAL MANAGEMENT



1. Primary survey – Assess the ABCs and manage as indicated.
   a. Hemorrhage control of life threatening bleeding (See External Hemorrhage/Extremity Hemorrhage Guideline)
   b. Airway Patency
      i. If the patient is unable to maintain their airway, insert an advanced airway (See Respiratory Arrest/Distress Guidelines) and monitor oxygen saturations and ETCO2 if possible. Maintain spine precautions during any airway procedures.
      ii. Do not place a nasopharyngeal airway in a patient with facial trauma
   c. Breathing (See Chest Injuries Guideline)
      i. Place patient on oxygen to maintain O2 saturations over 94%
      ii. Monitor for the development of a tension pneumothorax
      iii. Consider needle decompression **(Paramedic only)**
   d. Circulation
      i. Establish IV/IO access
      ii. If the patient is hypotensive:
         1) ADULTS:
            a) SBP > 90mmHg and normal mental status, no IV fluids required
            b) SBP < 90mmHg, HR > 120 or altered mental status, administer 500ml to 1000ml bolus of normal saline and reassess
            c) If a brain injury is suspected, fluid resuscitate to a SBP > 110
         2) PEDIATRICS:
            a) If a child demonstrates tachycardia for their age with signs of poor perfusion (Low BP, greater than 2-second capillary refill, altered mental status, hypoxia, weak pulses, pallor, or mottled/cool skin), give a 20ml/kg bolus of normal saline and reassess.
   e. Disability
      i. Consider spinal motion restriction (See Spinal Injury Guideline) and Spinal Motion Restriction Procedure.
      ii. Maintain a high index of suspicion for a Traumatic Brain Injury. Any occurrence of hypoxia or hypotension can worsen injury. (See Head Injury Guideline)

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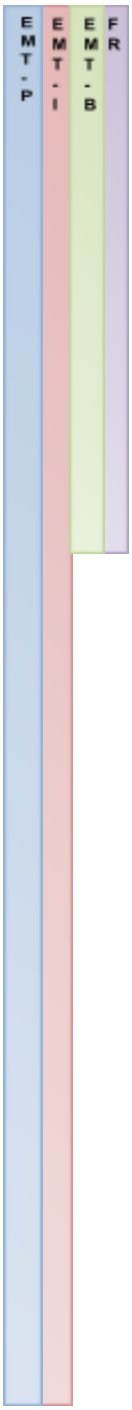
MAJOR TRAUMA (Cont.)



f. Exposure
   i. Rapidly identify sites of penetrating wounds or other blunt injuries. Be sure to roll the patient to examine the back
   ii. Prevent hypothermia

g. Minimize scene time. The goal should be less than 10 minutes for an unstable patient or a patient who needs emergent surgical intervention, with the majority of interventions performed Enroute.

h. Each jurisdiction should develop Trauma Destination Protocols for patients with guidance from your Regional Advisory Committee (RAC), based on local resources. See CDC Guidelines for Field Triage of Injured Patients.

2. Secondary Survey
   a. Obtain patient medical history and medication usage, especially noting blood thinner use.
   b. Head to toe physical exam

i. Splint extremity fractures (See External Hemorrhage/Extremity Hemorrhage Guideline)

3. Consider Pain management in the hemodynamically stable patient.

MORPHINE

a. Adult: [4-10 mg] slow IV/IO titrating 2-4 mg every 10 minutes to effect. (Max of 10 mg without approval from Medical Control). Do not administer if the systolic BP is less than 100.

d. Pediatric: (2-12 yrs. of age) [0.05 mg/kg] IV/IO or IM every 10 min. up to 0.2 mg/kg

FENTANYL

a. Adult: [25-100 mcg] slow IV/IO every 5 minutes to effect. (Maximum single dose of 100mcg and maximum total dose of 300mcg without approval from Medical Control). Do not give if systolic BP is less than 100.

e. Pediatric: (2-12 yrs. of age) [0.5-1 mcg/kg] IV/IO or IM to a maximum of 2.0 mcg/kg slow IV push over 2 minutes.

Note: Do not use NSAIDs in trauma patients.

Note: Fentanyl is shorter acting and often preferred in the initial pain management of multi-system trauma patients.

4. Consider an anti-emetic for nausea and/or vomiting:

ONDANSETRON (Zofran®)

a. Adult: [4mg] IV/IO/PO/IM

b. Pediatric: [0.05-0.1 mg/kg] IV/IO/PO/IM (Max dose 4mg)

PROMETHAZINE (Phenergan®)

a. Adult: [12.5-25 mg] PO/IV/IO/IM

BITES - NON-VENOMOUS ANIMAL, or HUMAN

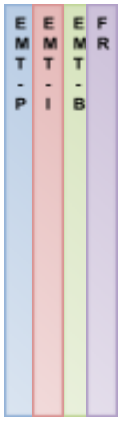
DESCRIPTION OF CONDITION

Signs and symptoms may include any or all of the following: local pain, swelling, puncture wounds and lacerations.

EMPHASIS ON PATIENT CARE

Scene safety, control of bleeding, prevent further contamination

PRE-HOSPITAL MANAGEMENT



1. Assess the scene for safety. Remove patient to a safe area for Assessment and treatment.
2. Primary Assessment - Assess airway, breathing and circulation and manage as indicated.
3. History, physical exam, vital signs
4. Irrigate the wound with sterile solution and bandage as appropriate.
5. If applicable, have someone attempt to find the animal and check vaccination history. If the bite was from a human, if possible, have law enforcement ascertain the identity and medical history of the person.
6. Do not attempt to secure animal, leave it to the Police or Animal Control Officers. All animal bites must be reported.
7. If transport capable, transport the patient to an appropriate medical facility.
8. If patient exhibits signs and symptoms of shock, follow Shock Guidelines.

BITES - VENOMOUS

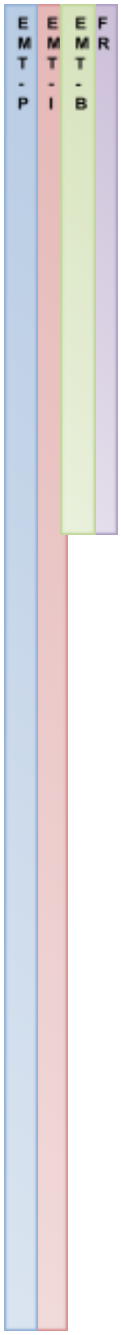
DESCRIPTION OF CONDITION

Signs and symptoms may include any one or all of the following: pain, local swelling, puncture wounds, bleeding at site, tachycardia, tachypnea, vomiting, abdominal pain, numbness at extremities, and headache.

EMPHASIS ON PATIENT CARE

Scene safety, control of bleeding, prevent further contamination

PRE-HOSPITAL MANAGEMENT



1. Assess the scene for safety. Remove patient to a safe area for Assessment and treatment.
2. Primary Assessment - Assess airway, breathing and circulation and manage as indicated.
3. Manage bite wound and extremity
   a. Remove jewelry from affected area.
   b. Stabilize extremity and place at the level of the heart.
   c. Irrigate bite with sterile isotonic solution or sterile water.
4. If transport capable, initiate transport to an appropriate medical facility.
5. History, physical exam, vital signs
   a. Obtain history of bite.
      i. Try to safely identify type of animal.
      ii. Ascertain time of bite and onset of signs and symptoms.
   b. Keep patient calm and still.
6. If anaphylaxis develops, follow Allergic Reaction / Anaphylaxis Guidelines.
7. Enroute, initiate an IV/IO (flow rate determined by patient condition) of an isotonic solution in an unaffected extremity.
8. Consider opiate pain medications for moderate to severe pain. EMT-Is must have MCEP approval for narcotic administration.

MORPHINE

a. Adult: [4-10 mg] slow IV/IO titrating 2-4 mg every 10 minutes to effect. (Max of 10 mg without approval from Medical Control). Do not administer if the systolic BP is less than 100.
b. Pediatric: (2-12 yrs. of age) [0.05-0.1mg/kg] slow IV/IO titrated to effect

FENTANYL

a. Adult: [25-100 mcg] slow IV/IO every 5 minutes to effect. (Maximum single dose of 100mcg and maximum total dose of 300mcg without approval from Medical Control). Do not give if systolic BP is less than 100.
b. Pediatric: (2-12 yrs. of age) [0.5-1 mcg/kg] IV/IO to a maximum of 2.0 mcg/kg slow IV push over 2 minutes.

9. Consider an anti-emetic for nausea and/or vomiting:

ONDANSETRON (Zofran®)

a. Adult: [4mg] IV/IO/PO/IM
b. Pediatric: [0.05-0.1 mg/kg] IV/IO/PO/IM (Max dose 4mg)

PROMETHAZINE (Phenergan®)

a. Adult: [12.5-25 mg] PO/IV/IO/IM

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Bites - Venomous (Cont.)

Notes:

1. Never place a tourniquet around an affected extremity, except in the case of uncontrollable hemorrhage. Follow Hemorrhaging/Bleeding Guidelines
2. Rapid onset of signs and symptoms indicate a major envenomation.
3. Do not cut and attempt to remove poison.
4. Do not use any type of cryotherapy on bite wound.

BURNS - THERMAL

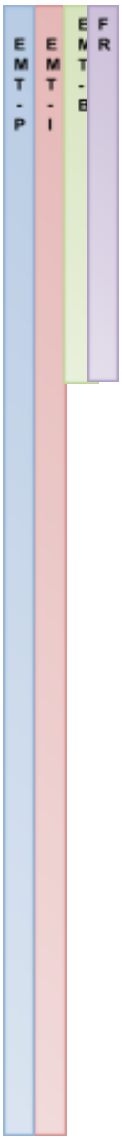
DESCRIPTION OF CONDITION

Signs and symptoms may include any one or all of the following: Partial thickness - burns involving the epidermal and dermal layers characterized by reddening or blistering skin. Full thickness - burns involving all skin layers, muscle fascia, and/or charred black or grayish skin, dry in appearance.

EMPHASIS ON PATIENT CARE

Airway management, pain management, fluid replacement, minimize tissue damage and transport to a burn center after stabilization

PRE-HOSPITAL MANAGEMENT



1. Stop the burning process, and remove patient from source.
2. Primary Assessment - Assess airway, breathing and circulation and manage as indicated.
3. History, physical exam, vital signs
   a. Estimate percentage of body surface area (BSA) affected and estimate partial or full thickness burns.
4. Remove jewelry and clothing unless adhered to skin.
5. Place dry sterile dressings over burns, with no two burned surfaces touching.
6. Maintain body temperature to prevent hypothermia.
7. If transport capable, initiate or arrange transport to appropriate medical facility. Consider air evacuation and Contact Medical Control for destination decisions.
8. Enroute, initiate a large bore IV/IO of an isotonic solution and titrate it to adequate vital signs.
9. Initiate a second IV in an unburned area. If > 20% BSA affected, administer isotonic fluid
10. (LR preferred) based on Parkland Burn Formula: (Initial fluid rate can also be calculated as: body weight (kg) X TBSA = cc of fluid to be given in first 2 hours)
    a. 4cc/kg/ TBSA = CC for 1st 24 hours
    b. ½ to be given in first 8 hours
    c. ½ over the next 16 hours.
11. If no contraindications exist, Consider administration of pain medications.

EMT-I must have approval from direct Medical Control (MCEP) for narcotics.

MORPHINE

a. Adult: [4-10 mg] slow IV/IO titrating 2-4 mg every 10 minutes to effect. (Max of 10 mg without approval from Medical Control). Do not administer if the systolic BP is less than 100.
b. Pediatric: (2-12 yrs. of age) [0.05 mg/kg] IV/IO or IM every 10 min. up to 0.2 mg/kg

FENTANYL

a. Adult: [25-100 mcg] slow IV/IO every 5 minutes to effect. (Maximum single dose of 100mcg and maximum total dose of 300mcg without approval from Medical Control). Do not give if systolic BP is less than 100.
b. Pediatric: (2-12 yrs. of age) [0.5-1 mcg/kg] IV/IO or IM to a maximum of 2.0 mcg/kg slow IV push over 2 minutes.

(Continued next page)

BURNS - THERMAL (Cont.)

12. Consider an anti-emetic for nausea and/or vomiting:

ONDANSETRON (Zofran®)

a. Adult: [4mg] IV/IO/PO/IM
b. Pediatric: [0.05-0.1 mg/kg] IV/IO/PO/IM (Max dose 4mg)

PROMETHAZINE (Phenergan®)

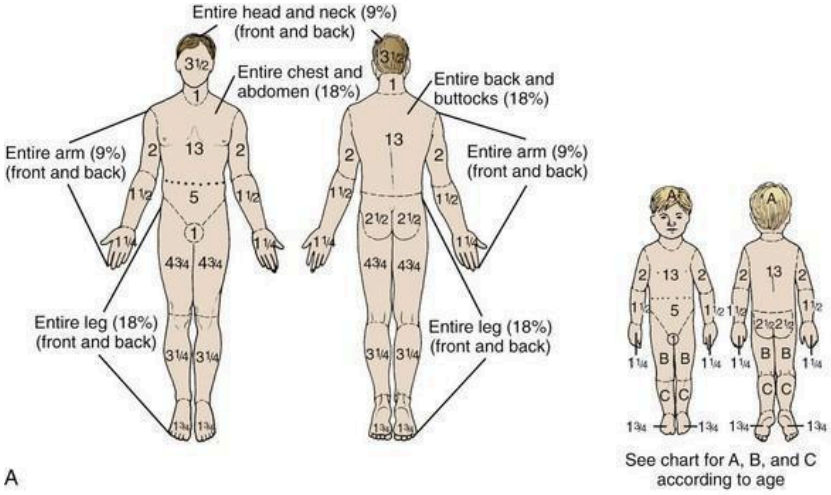
a. Adult: [12.5-25 mg] PO/IV/IO/IM

13. With facial or airway involvement (singed nasal hair, soot inside nares, stridor etc.) early invasive airway management should be Considered. See Respiratory Arrest/Destress-General Guidelines

Note: Do not apply electrodes to burned areas.

Note: A quick method of estimating Total Body Surface Area (TBSA)

The Patient's hand = to 1% TBSA



A

AGE	Birth–1 yr	1–4 yr	5–9 yr	10–14 yr	15 yr	Adult
Head	19	17	13	11	9	7
Neck	2					
Ant trunk	13					
Post trunk	13					
R buttock	2½					
L buttock	2½					
Genitalia	1					
R U arm	4					
L U arm	4					
R L arm	3					
L L arm	3					
R hand	2½	6½	8	8½	9	9½
L hand	2½	6½	8	8½	9	9½
R thigh	5½	5	5½	6	6½	7
L thigh	5½	5	5½	6	6½	7
R leg	5					
L leg	5					
R foot	3½					
L foot	3½					

B BODY AREA

BURNS - CHEMICAL

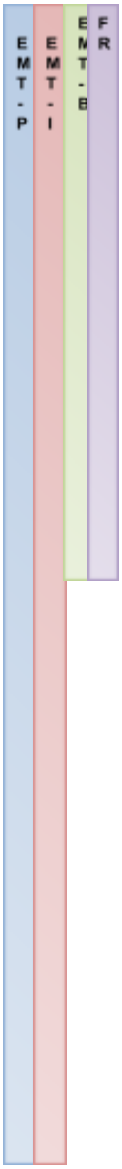
DESCRIPTION OF CONDITION

Signs and symptoms include the following: evidence of dry or liquid chemical contamination, and reddening and/or blistering of the skin.

EMPHASIS ON PATIENT CARE

Decontamination, prevention of further injury and exposure, safety of providers

PRE-HOSPITAL MANAGEMENT



1. Assess the scene for safety. Do not enter area until it has been determined safe for EMS to have immediate Contact with patient.
2. Primary Assessment - Assess airway, breathing and circulation and manage as indicated.
   a. Don the appropriate protective personal equipment (PPE) and decontaminate small areas by irrigating with water.
      i. Remove all contaminated clothing.
      ii. Brush away dry chemical, prior to irrigating.
      iii. Irrigate for minimum of 20 minutes.
   b. Contact HazMat team for full body contamination.
3. Remove jewelry and all clothing prior to transport.
4. History, physical exam, vital signs
   a. Estimate percentage of Body Surface Area (BSA).
   b. Assess for additional associated trauma.
5. If transport capable, initiate or arrange transport to appropriate medical facility. Consider air evacuation and Contact Medical Control for destination decisions.
6. Enroute, initiate IV/IO access (determined by patient condition) of an isotonic solution to maintain adequate vital signs.
7. Maintain body temperature to prevent hypothermia.
8. If no contraindications exist, Consider administration of pain medications.

EMT-I must have approval from direct Medical Control (MCEP) for narcotics.

MORPHINE

a. Adult: [4-10 mg] slow IV/IO titrating 2-4 mg every 10 minutes to effect. (Max of 10 mg without approval from Medical Control). Do not administer if the systolic BP is less than 100.
b. Pediatric: (2-12 yrs. of age) [0.05 mg/kg] IV/IO or IM every 10 min. up to 0.2 mg/kg

FENTANYL

a. Adult: [25-100 mcg] slow IV/IO every 5 minutes to effect. (Maximum single dose of 100mcg and maximum total dose of 300mcg without approval from Medical Control). Do not give if systolic BP is less than 100.
b. Pediatric: (2-12 yrs. of age) [0.5-1 mcg/kg] IV/IO or IM to a maximum of 2.0 mcg/kg slow IV push over 2 minutes.

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BURNS - CHEMICAL (Cont.)

9. Consider an anti-emetic for nausea and/or vomiting:

ONDANSETRON (Zofran®)

a. Adult: [4mg] IV/IO/PO/IM
b. Pediatric: [0.05-0.1 mg/kg] IV/IO/PO/IM (Max dose 4mg)

PROMETHAZINE (Phenergan®)

a. Adult: [12.5-25 mg] PO/IV/IO/IM

10. For all patients in whom a hydrofluoric acid exposure is confirmed or suspected:
    a. Vigorously irrigate all affected areas with water or normal saline
    b. Apply a cardiac monitor for significant HF exposures as hypocalcemia may occur
    c. Apply calcium preparation: (Calcium prevents tissue damage from hydrofluoric acid. Calcium gluconate is preferred over calcium chloride as it is less irritating).
        i. If commercially manufactured calcium gluconate gel is not available, a topical calcium gluconate gel preparation can be made by combining 25 ml of calcium gluconate 10% solution in 75-150 ml of a sterile water-soluble gel (e.g. Surgilube® or KY® jelly)
        ii. If calcium gluconate is not available, 10 ml of calcium chloride 10% solution in 75-150 ml in sterile water-soluble gel (e.g. Surgilube® or KY® jelly).
        iii. Apply generous amounts of calcium gluconate gel to the exposed skin sites to neutralize the cutaneous effects of the hydrofluoric acid and to prevent tissue damage and necrosis.
        iv. If fingers are involved, apply the calcium gel to the hand, squirt additional calcium gel into a surgical glove, and then insert the affected hand into the glove.
        v. For patients who have sustained a significant exposure to hydrofluoric acid and are exhibiting clinically significant signs and symptoms of hypocalcemia, calcium chloride 10% solution should be administered intravenously

Note: Do not apply electrodes to burned skin areas.

EXTERNAL HEMORRHAGE/ EXTREMITY TRAUMA

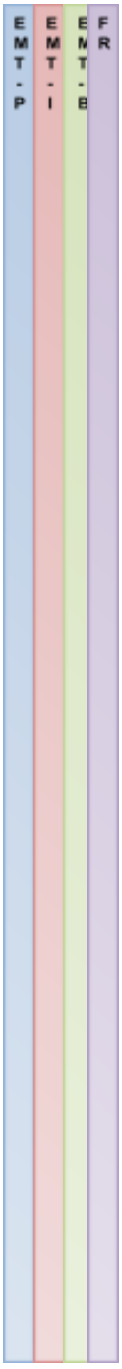
DESCRIPTION OF CONDITION

Signs and symptoms would include traumatic extremity hemorrhage (external hemorrhage) and/or potential extremity fractures or dislocations

EMPHASIS ON PATIENT CARE

Control of hemorrhage, immobilization, maintain adequate perfusion

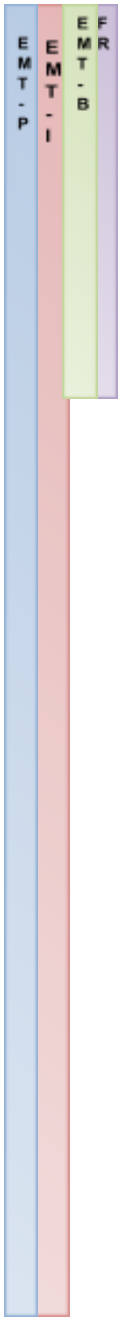
PRE-HOSPITAL MANAGEMENT



1. Primary Assessment - Assess airway, breathing and circulation and manage as indicated.
2. Control bleeding. Address exsanguinating bleeding first, followed by non-life threatening bleeding.
   a. Extremity
      i. Apply direct pressure to bleeding site, followed by pressure dressing.
      ii. If direct pressure/pressure dressing is ineffective or impractical:
         (1.) Apply a tourniquet to the extremity, 1-2 inches proximal to the wound and never below the elbow or knee. **Note: A commercially available TCCC or C-TECC approved tourniquet has been widely tested and has fewer complications than improvised tourniquets.**
         (2.) If bleeding continues, place a second tourniquet next to and proximal to the first.
      iii. For thigh wounds, consider placement of two tourniquets, side-by-side, and tighten sequentially to eliminate distal pulse.
      iv. If the bleeding site is not amenable to tourniquet placement (i.e. junctional injury), apply a topical hemostatic agent with direct pressure.
   b. Groin/axillary injury
      i. Apply direct pressure to wound
      ii. If still bleeding, pack wound tightly with gauze and continue direct pressure
      iii. Consider topical hemostatic agent adjuncts
   c. Amputations or partial amputations
      i. Controlling hemorrhage is the first priority.
      ii. Cover remaining limb with sterile dressings, saturate with saline, cover with dry dressings, and elevate the injured extremity.
      iii. Wrap severed part in sterile gauze, preserving all amputated material. Dampen gauze with sterile saline. Place in a watertight container, place container in ice water, if available. **DO NOT FREEZE OR USE DRY ICE.**
      iv. Partial amputations should be dressed and splinted in alignment with the extremity to assure optimum blood flow.
3. If the patient is hypotensive, transport immediately and complete the remainder of the Assessment and treatment Enroute. **(EMT-I & Paramedic only)** Initiate IV/IO and bolus 20cc/kg of Normal Saline. Repeat until there is a palpable radial pulse or normal mentation of the patient. If there is concern for a Traumatic Brain Injury, then fluid resuscitate until systolic blood pressures are above 110.
4. Evaluate for obvious extremity deformity, shortening, rotation, or instability.
   a. Neurovascular status of extremity

b. Pulses, capillary refill, movement and sensation (Continued next page)

EXTREMITY TRAUMA (Cont.)



5. Stabilize suspected fractures/dislocations
   a. If distal vascular function is compromised, gently attempt to restore normal anatomic position. Strongly Consider pain management before attempting to move a suspected fracture.
   b. Use splints as appropriate to limit movement of suspected fracture
      i. Reassess distal neurovascular status after any manipulation or splinting of fractures/dislocations
   c. Elevate extremity fractures above heart level whenever possible to limit swelling
   d. Apply ice/cool packs to limit swelling in suspected fractures or soft tissue injury. Do not apply ice directly to skin
6. If transport capable, transport the patient to an appropriate medical facility.
7. Consider administration of pain medications.

   EMT I MUST CONTACT MCEP UNLESS (Introduction pg 5-6):
   1. Stable and Normal vital signs (SBP >100, HR < 130)
   2. Awake and alert without significant impairment (eg alcohol or drug intoxication). GCS 14 or 15.
   3. No other sedating medication (ie benzodiazepines) have been administered.
   4. Age >18 and < 65 and weight >50kg.

MORPHINE

a. Adult: [4-10 mg] slow IV/IO titrating 2-4 mg every 10 minutes to effect. (Max of 10 mg without approval from Medical Control). Do not administer if the systolic BP is less than 100.
c. Pediatric: (2-12 yrs. of age) [0.05-0.1 mg/kg] slow IV/IO titrated to effect

FENTANYL

a. Adult: [25-100 mcg] slow IV/IO every 5 minutes to effect. (Maximum single dose of 100mcg and maximum total dose of 300mcg without approval from Medical Control). Do not give if systolic BP is less than 100.
b. Pediatric: (2-12 yrs. of age) [0.5-1 mcg/kg] IV/IO or IM to a maximum of 2.0 mcg/kg slow IV push over 2 minutes.

8. Consider an anti-emetic for nausea and/or vomiting:

ONDANSETRON (Zofran®)

a. Adult: [4mg] IV/IO/PO/IM
b. Pediatric: [0.05-0.1 mg/kg] IV/IO/PO/IM (Max dose 4mg)

PROMETHAZINE (Phenergan®)

a. Adult: [12.5-25 mg] PO/IV/IO/IM

CARDIAC ARREST - TRAUMATIC

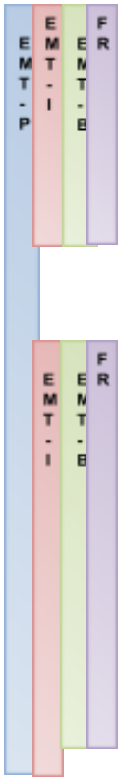
DESCRIPTION OF CONDITION

Signs and symptoms include an unconscious and unresponsive patient with agonal or absent respiratory effort and no palpable pulses with a high suspicion of traumatic origin.

EMPHASIS ON PATIENT CARE

Control bleeding, airway management, chest compressions, fluid replacement, and rapid management of reversible causes

PRE-HOSPITAL MANAGEMENT



1. Verify that the mechanism of injury is consistent with the patient presentation, and cause of arrest.
2. If the patient has injuries incompatible with life, such as torso transection, exposed brain matter, or frank signs of death present, do not initiate resuscitation.
3. The data does not support initiating resuscitation for blunt or penetrating traumatic arrest if you are greater than 15 minutes from a Trauma Center or greater than 15 minutes from ILS/ALS level care.
4. **(Paramedic Only)** Consider bilateral needle decompression. If the patient is in asystole or PEA < 40 after decompression, then termination of resuscitation should be considered.
5. If the decision is made to transport and no ALS is available on scene, initiate immediate transport and, if indicated, call for ALS intercept. Do the following procedures enroute:
   a. Primary Assessment - Assess airway, breathing and circulation and manage as indicated.
   b. Control exsanguinating hemorrhage first. See also External Hemorrhage/Extremity Trauma Guideline.
   c. C- spine precautions if indicated
   d. Attach AED, Initiate CPR, manage airway and ventilate with 100% **OXYGEN**. If VF or VT occur follow VF & VT (without a pulse) Guideline
   e. Insert advanced airway: (follow Respiratory Arrest/Distress Guidelines), and continue ventilation with 100% **OXYGEN**.
   f. Enroute, initiate two large bore IV/IOs with an isotonic solution wide open.

Note: If at any time during this period of resuscitation the patient experiences a return of spontaneous circulation, proceed to the Adult Post-ROSC Care guideline

Note: Patient/Provider Safety Considerations. It is not safe for the patient or providers to perform chest compressions during transport unless a mechanical chest compression device is utilized. Chest compressions during patient movement are less effective in regards to hands on time, depth, recoil and rate and providers performing chest compressions in a moving vehicle are at risk for injury.

McKinley COUNTY EMS GUIDELINES FOR FIELD TRIAGE OF INJURED PATIENTS

Each jurisdiction should develop destination protocols for trauma patients with guidance from your Regional Advisory Committee (RAC).

For McKinley County, please refer to the Trauma Destination Guidelines Intro pg (9-10).

CHEST INJURIES

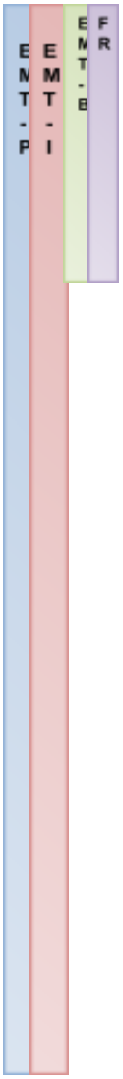
DESCRIPTION OF CONDITION

Chest injuries may result from either a blunt, penetrating, barotraumas, or environment causes. The patient will present with a history, or signs and symptoms associated with one or more of the following conditions: Flail chest, open chest wound, barotrauma event such as an explosion or dive related issue, or exposure to chemical particulate or fumes.

EMPHASIS ON PATIENT CARE

Treatment should be focused at stabilization and ensuring adequate ventilatory and oxygenation status in the patient. All chest trauma patients should be expeditiously transported to the closest available trauma center for management and stabilization. Consider ALS intercept if available.

PRE-HOSPITAL MANAGEMENT



1. Primary Assessment - Assess airway, breathing and circulation and manage as indicated.
2. If transport capable, initiate transport to appropriate medical facility.
3. History, physical exam, vital signs

SPECIFIC CONDITIONS

Flail Chest

1. All patients should initially be placed on 100% oxygen via a non-rebreathing facemask. Maintain oxygen saturation 94% or above if quantitative measurement is available.
2. Intubation and mechanical ventilation are rarely indicated for chest wall injury alone. Where ventilation is necessary it is usually for hypoxia due to underlying pulmonary contusions. Positive pressure ventilation may be required for severe chest wall instability resulting in inadequate ventilatory volume.
3. If no contraindications exist, Consider administration of pain medications.

MORPHINE

a. Adult: [4-10 mg] slow IV/IO titrating 2-4 mg every 10 minutes to effect. (Max of 10 mg without approval from Medical Control). Do not administer if the systolic BP is less than 100.

b. Pediatric: (2-12 yrs. of age) [0.05-0.1 mg/kg] slow IV/IO titrated to effect

FENTANYL

a. Adult: [25-100 mcg] slow IV/IO every 5 minutes to effect. (Maximum single dose of 100mcg and maximum total dose of 300mcg without approval from Medical Control). Do not give if systolic BP is less than 100.

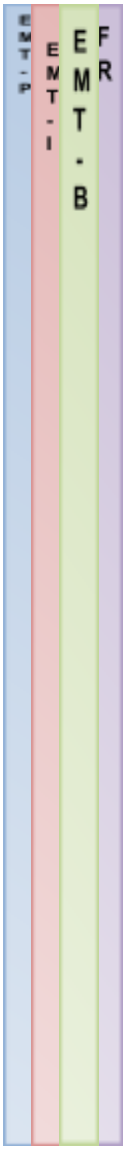
b. Pediatric: (2-12 yrs. of age) [0.5-1 mcg/kg] IV/IO or IM to a maximum of 2.0 mcg/kg slow IV push over 2 minutes.

4. Consider an anti-emetic for nausea and/or vomiting:

ONDANSETRON (Zofran®)

a. Adult: [4mg] IV/IO/PO/IM

b. Pediatric: [0.05-0.1 mg/kg] IV/IO/PO/IM (Max dose 4mg)



Known or Suspected Simple Pneumothorax

1. All patients should initially be placed on 100% oxygen via a non- rebreathing facemask. Maintain oxygen saturation 94% or above if quantitative measurement is available.
2. Observe for progression from simple pneumothorax to tension pneumothorax.

Tension Pneumothorax

1. All patients should initially be placed on 100% oxygen via a non- rebreathing facemask. Maintain oxygen saturation 94% or above if quantitative measurement is available.
2. Consider needle decompression - EMT-P only.

Open Chest Wound

1. All patients should initially be placed on 100% oxygen via a non- rebreathing facemask. Maintain oxygen saturation 94% or above if quantitative measurement is available.
2. Apply a fully occlusive chest seal which are common on the market or an occlusive dressing over the wound and tape on 3 sides. This, in theory, acts as a flutter-valve to allow air to escape from the pneumothorax during expiration, but not to enter during inspiration.
3. Monitor closely for development of a tension pneumothorax.

Barotrauma

Note: Barotrauma may be associated with either diving related incidents, or as a result of a CBRNE (Chemical, Biological, Radiologic, Nuclear, Explosion) event. CBRNE events may also present with associated pulmonary edema due to chemical or heat effects. If a CBRNE event has occurred, provider safety is paramount, and the patient must be adequately decontaminated.

1. All patients should initially be placed on 100% oxygen via a non- rebreathing facemask. Maintain oxygen saturation 94% or above if quantitative measurement is available.
2. Monitor closely for development of simple pneumothorax, or progression of simple pneumothorax to tension pneumothorax.
3. Positive pressure ventilation and CPAP may cause and /or exacerbate underlying pneumothorax. Use with caution.
4. Administer bronchodilators if bronchospasm or wheezing is noted
5. Initiate an IV/IO of an isotonic solution; infused to maintain adequate vital signs.

HEAD INJURY (TRAUMATIC BRAIN INJURY)

DESCRIPTION OF CONDITION

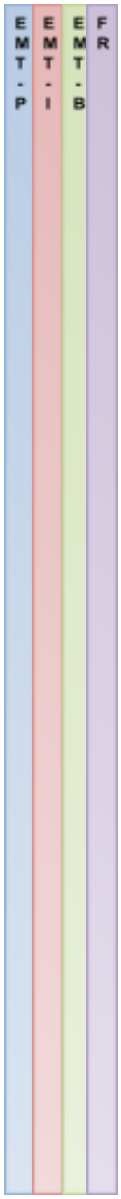
Signs and symptoms may include any or all of the following: slowing pulse rate, increasing blood pressure, increasingly irregular respiratory patterns, altered level of consciousness, unequal pupils, repeating speech patterns, seizures, presence of CSF, with a history of blunt or penetrating head trauma.

EMPHASIS ON PATIENT CARE

Airway management, adequate oxygenation and blood pressure, spinal precautions

Be aware of the potential for spinal, abdominal or chest trauma not apparent due to altered mental status.

PRE-HOSPITAL MANAGEMENT



1. Primary Assessment - Assess airway, breathing and circulation and manage as indicated.
2. Maintain cervical stabilization.
3. Airway
   a. Oxygen: prevent any desaturation < 90%; use supplemental O2 as needed to maintain O2 saturation ≥ 94%.
   b. If patient unable to maintain airway, insert an advanced airway (see Respiratory Arrest/Distress Guidelines), and continue ventilation, 1 breath every 6 seconds.
   c. Consider oral intubation (for patients 13 years of age and older) only if BVM ventilation ineffective in maintaining oxygenation or if airway is compromised. (**Paramedic only**)
   d. Nasal airways or nasal intubation should not be used in patients with severe facial trauma.
4. Breathing:
   a. Moderate / severe head injury: Continuous waveform capnography and EtCO2 measurement if available. Target EtCO2 35-40 mmHg
   b. Severe head injury with signs of herniation: Hyperventilation to target EtCO2 30-35 mmHg. This is a short-term option, and is **ONLY** for severe head injury (GCS ≤ 8 or U (unresponsive) on AVPU scale) with signs of herniation.
   c. Supraglottic airway / intubation **(Paramedic)** only if BVM ventilation inadequate to maintain adequate oxygenation. Target EtCO2 35-40 mmHg
5. Circulation:
   a. Wound care:
      i. Control bleeding with direct pressure if no suspected open skull injury.
      ii. Moist sterile dressing to any potential open skull wound.
   b. Moderate / severe closed head injury:
      i. Blood pressure: avoid hypotension
         1) Adult (age > 10 years): maintain SBP ≥ 110 mmHg
         2) Pediatric: maintain SBP:
            a) < 1 month: > 60 mmHg
            b) 1-12 months: > 70 mmHg
            c) 1-10 years: > 70 + 2x age in years

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HEAD INJURY (TRAUMATIC BRAIN INJURY) (Cont.)

EMT-P EMT-I EMT-B FR

6. Enroute to the hospital, initiate an IV/IO of an isotonic solution at a rate to maintain adequate vital signs as noted above. Consider second IV/IO, if indicated.
7. Use a Buretrol IV set for Pediatrics. Consider intraosseous access, if peripheral venous access is not available and patient conditions warrants.
8. Disability:
   a. Evaluate for other causes of altered mental status:
      i. Evaluate blood glucose if indicated
   b. Spinal stabilization
   c. Perform and trend neurologic status Assessment (moderate / severe: GCS ≤13, P (pain) or U (unresponsive) on AVPU scale)
      i. Early signs of deterioration:
         1) Confusion
         2) Agitation
         3) Drowsiness
         4) Vomiting
         5) Severe headache
      ii. Monitor for signs of herniation
   d. Severe head injury: Elevate head of bed 30 degrees
9. Monitoring:
   a. Continuous pulse oximetry.
   b. Frequent blood pressure measurement.
   c. Initial neurologic status assessment and reassessment with any change in mentation.
   d. Moderate/severe head injury : apply continuous waveform ETCO2 if available.
10. Complete a secondary survey looking for other traumatic injuries.
11. If transport capable, transport the patient as soon as possible to an appropriate medical facility. Consider ALS.
12. History, physical exam, vital signs, and Glascow Coma Scale

GLASGOW COMA SCALE

Eye Opening	Spontaneous To Voice To Pain None	4 3 2 1
Verbal Response	Oriented Confused Inappropriate Words None	5 4 3 2 1
Motor Response	Obeys Commands Localizes (Pain) Withdraw (Pain) Flexion (Pain) Extension (Pain) None	6 5 4 3 2 1
	Glasgow Coma Score Total	

ELECTRICAL INJURY

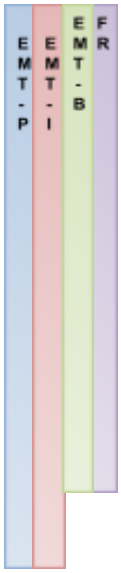
DESCRIPTION OF CONDITION

Signs and symptoms may include any one or all of the following: Partial to full thickness burns with entrance and exit wounds, associated fractures, disorientation, cardiac dysrhythmias, irregular respiration, apnea, unconsciousness or cardiac arrest.

EMPHASIS ON PATIENT CARE

Identify life threatening issues such as dysrhythmias and cardiac arrest, maintain a high index of suspicion for associated trauma

PRE-HOSPITAL MANAGEMENT



1. Assess the scene for safety. Turn the power off, if it can be done safely, otherwise call the electric company. Identify characteristics of electrical source to communicate to receiving facility.
2. Primary Assessment - Assess airway, breathing and circulation and manage as indicated.
3. Apply dry dressing to any wounds
4. Remove constricting clothing and jewelry since additional swelling is possible
5. Immobilize if associated trauma suspected.
6. If transport capable, transport the patient as soon as possible to appropriate medical facility. Electrical injury patients should be taken to a burn center whenever possible since these injuries can involve Considerable tissue damage
7. History, physical exam, vital signs
8. Place on cardiac monitor if available, and record a strip.
9. If cardiac arrest occurs, follow Medical Cardiac Arrest Guidelines.
10. Enroute, initiate a large bore IV/IO of an isotonic solution and infuse at a flow rate to maintain adequate vital signs. Administer fluid resuscitation per Burn Guidelines.

SEXUAL ABUSE / ASSAULT

DESCRIPTION OF CONDITION

The patient has been forcefully exploited by another person(s). The force used may be physical violence, threats, mental manipulation, or other forms of psychological force.

EMPHASIS ON PATIENT CARE

Supportive care, management of associated trauma

PRE-HOSPITAL MANAGEMENT

EMT-P EMT-I EMT-B FR

1. Primary Assessment - Assess airway, breathing and circulation and manage as indicated.
2. History, physical exam, vital signs
   a. Treat all life threats as indicated.
   b. Protect the scene and preserve evidence in cooperation with law enforcement.
   c. Encourage patient not to bathe, douche, or change clothes.
   d. Do not allow more people than necessary for patient care in Contact with the patient or on the scene.
   e. This may be a highly emotional and volatile situation; be sure your physical examination and treatments are clearly documented on the report form.
   f. Obtain only information needed to treat the patient. Do not attempt to investigate the crime.
3. Victims of domestic violence or sexual assault who report being choked or strangled during the assault, and have <u>any</u> of the following S&S, should be transported to the nearest appropriate medical facility, preferably a trauma center.
   a. Loss of consciousness, or any other neurological S&S (seizures, altered mental status, amnesia, visual changes, or stroke-like symptoms).
   b. Visual changes (spots, flashing lights, tunnel vision, or other reported visual disturbances).
   c. Facial or conjunctival petechial hemorrhage
   d. Ligature marks or neck contusions
   e. Soft tissue neck injury or swelling and/or tenderness in the neck.
   f. Incontinence of bladder or bowel
   g. Difficulty in speaking or loss of ability to speak
   h. Shortness of breath due to upper airway swelling/trauma.
   i. Subcutaneous emphysema
4. Transport decisions <u>should</u> be patient dependent. Have a high index of suspicion for internal injuries. Consider spinal immobilization, IV access and fluid resuscitation, and/or pain management as indicated by the clinical situation.
5. For pediatric cases of suspected sexual assault, consent for transport and medical care is 14 years of age and older. Parental notification and consent is not required if the patient is over 14 and consents to transport. Consider Child Protective Services notification as appropriate.

SPINAL INJURY

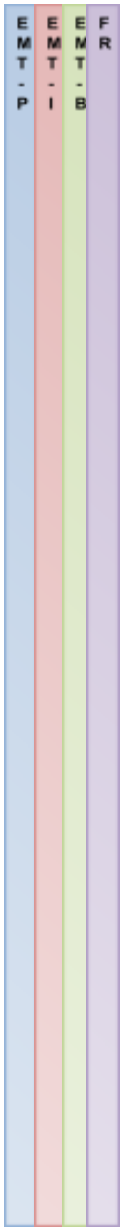
DESCRIPTION OF CONDITION

Signs and symptoms may include of pain in the area of the spinal cord or there is a suspicion of spinal injury based on mechanism of injury or patient complaint.

EMPHASIS ON PATIENT CARE

Minimize secondary injury to spine in patients who have, or may have, an unstable spinal injury and patient morbidity from immobilization procedures

PRE-HOSPITAL MANAGEMENT



1. Primary Assessment - Assess airway, breathing and circulation and manage as indicated. Use humidified O2.
2. Assess the scene, to determine the risk of injury. Mechanism alone should not determine if a patient requires cervical spine immobilization. However, mechanisms that have been associated with higher risk of injury are the following:
   a. Motor vehicle collisions, including automobiles, all-terrain vehicles, and snowmobiles
   b. Axial loading injuries to the spine
   c. Associated, substantial torso injuries
   d. Falls >10 feet
3. Assess the patient in the position he/she was found. Initial Assessment should focus on determining whether or not a cervical collar needs to be applied.
4. Assess for mental status, neurologic deficits, spinal pain or tenderness, any evidence of intoxication, or other severe injuries
5. Apply a cervical collar if there is any of the following:
   a. Age > 65 and traumatic injury (including falls)
   b. Patient complains of midline neck or spine pain
   c. Any midline neck or spinal tenderness with palpation
   d. Any abnormal mental status (including extreme agitation) or neurologic deficit
   e. Any evidence of alcohol or drug intoxication
   f. Another severe or painful distracting injury is present
   g. Torticollis in children
   h. A communication barrier that prevents accurate Assessment
6. If none of the above apply, patients should not have a cervical collar placed
7. Spinal motion restriction without the use of a hard-cervical collar may be required in penetrating injuries to the neck with neurological deficits, especially when there is concern for on-going bleeding and/or airway management needs.
8. If extrication may be required
   a. From a vehicle: After placing a cervical collar, if indicated, children in a booster seat and adults should be allowed to self-extricate. For infants and toddlers already strapped in a car seat with a built-in harness, extricate the child while strapped in his/her car seat
   b. Other situations requiring extrication: A padded long board may be used for extrication, using the lift and slide (rather than a log-roll) technique.

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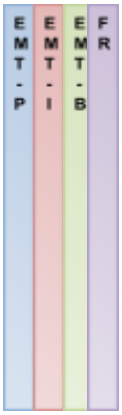
SPINAL INJURY (Cont.)



9. Helmet removal
   a. If a football helmet needs to be removed, it is recommended to remove the face mask followed by manual removal (rather than the use of automated devices) of the helmet while keeping the neck immobilized. Occipital padding should be applied, as needed, with the patient in a supine position, in order to maintain neutral cervical spine positioning

Note: Evidence is lacking to provide guidance about other types of helmet removal

10. Patients should not routinely be transported on long boards, unless the clinical situation warrants long board use. An example of this may be facilitation of immobilization of multiple extremity injuries or an unstable patient where removal of a board will delay transport and/or other treatment priorities. In these rare situations, long boards should be padded or have a vacuum mattress applied to minimize secondary injury to the patient

UNIVERSAL CARE

DETERMINATION OF DEATH / WITHHOLDING RESUSCITATIVE EFFORTS

DESCRIPTION OF CONDITION

Patient is unresponsive, found without respirations and without a palpable carotid pulse.

Resuscitation must be started on all patients who are found apneic and pulseless unless the following conditions exist (does not apply to victims of lightning strikes, drowning or hypothermia):

1. Traumatic injury or body condition clearly indicating biological death (irreversible brain death), limited to:
   a. Decapitation: the complete severing of the head from the remainder of the patient's body.
   b. Decomposition or putrefaction: the skin is bloated or ruptured, with or without soft tissue sloughed off. The presence of at least one of these signs indicated death occurred at least 24 hours previously
   c. Transection of the torso: the body is completely cut across below the shoulders and above the hips through all major organs and vessels. The spinal column may or may not be severed
   d. Incineration: 90% of body surface area with full thickness burns as exhibited by ash rather than clothing and complete absence of body hair with charred skin
   e. Dependent lividity with rigor mortis (when clothing is removed there is a clear demarcation of pooled blood within the body, and the body is generally rigid)
   f. Injuries incompatible with life (such as massive crush injury, complete exsanguination, severe displacement of brain matter)

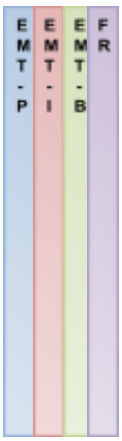
OR

2. A valid DNR order (form, card, bracelet) or other actionable medical order (e.g. MOST form) present, when it:
   a. Conforms to the state specifications for color and construction.
   b. Is intact: it has not been cut, broken or shows signs of being repaired.
   c. Displays the patient's name and the physician's name

EMPHASIS ON PATIENT CARE

Verify that the mechanism of injury is consistent with the patient presentation, and cause of arrest.

PRE-HOSPITAL MANAGEMENT



1. Primary Assessment - Assess airway, breathing and circulation and manage as indicated. Assess for dependent lividity with rigor mortis and/or other inclusion criteria.
2. If all the components above are confirmed, no CPR is required
3. If CPR has been initiated but all the components above have been subsequently confirmed, CPR may be discontinued and direct Medical Control Contacted as needed
4. If there is a DNR bracelet or DNR transfer form and there are signs of life (pulse and respirations), provide standard appropriate treatment under existing protocols matching the patient's condition.
5. If there is documentation of a Do Not Intubate advanced directive, the patient should receive full treatment per protocols with the exception of any intervention specifically prohibited in the patient's advanced directive. If for any reason an intervention that is prohibited by an advanced directive is being Considered, direct Medical Control should be obtained.

DO NOT RESUSCITATE (DNR) Status / Advanced Directives

DESCRIPTION OF CONDITION

There are a variety of ways that patients can express their wishes about cardiopulmonary resuscitation or end of life decision making. The patient must possess a DNR Order or other Advanced Directive or the approved Medic Alert bracelet or neck medallion, and patient identification. If a family member or other caregiver has "Durable Power of Attorney" they should be consulted for instructions on patient care or withholding patient care. These guidelines pertain only to patients with valid and verifiable "Advanced Directives".

EMPHASIS ON PATIENT CARE

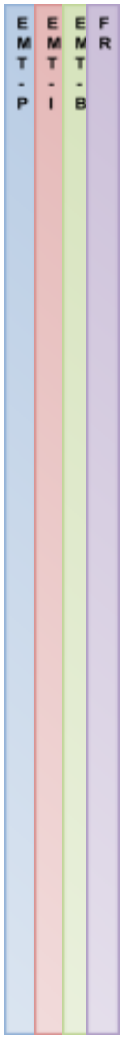
Verification of documents, medical direction involvement

1. Patients must have one of the following documents or a valid alternative (such as identification bracelet indicating wishes) immediately available.
2. Physician Orders for Medical Orders for Life Sustaining Treatment (MOST) – explicitly describes acceptable interventions for the patient in the form of medical orders, must be signed by a physician or other empowered medical provider to be valid.
3. Do Not Resuscitate (DNR) order – identifies that CPR and intubation are not to be initiated if the patient is in arrest or peri-arrest. The interventions covered by this order and the details around when to implement them can vary widely.
4. Advanced directives – document that describes acceptable treatments under a variable number of clinical situations including some or all of the following: what to do for cardiac arrest, whether artificial nutrition is acceptable, organ donation wishes, dialysis, etc. This frequently does not apply to emergent or potentially transient medical conditions.
5. As specified from state to state, in the absence of formal written directions (MOLT, DNR, advanced directives), and in the presence of a person with power of attorney for healthcare, or healthcare proxy, that person may prescribe limits of treatment.
6. One of the documents above is valid when it meets all of the following criteria:
   a. Conforms to the state specifications for color and construction
   b. Is intact: it has not been cut, broken or shows signs of being repaired
   c. Displays the patient's name and the physician's name
7. If there is question about the validity of the form/instrument, the best course of action is to proceed with the resuscitation until additional information can be obtained to clarify the best course of action.
8. If there is any indication of an attempted homicide, initiate resuscitation until such time that the questions have been answered. If possible, Contact Medical Control for consultation.
9. If a patient has a valid version of one of the above documents it will be referred to as a "valid exclusion to resuscitation" for the purposes of this protocol.

PRE-HOSPITAL MANAGEMENT

1. For all persons, the following procedures may be initiated for the comfort of the person if they have not been refused by the person or by the authorized health care decision-maker, by:
   a. Administer oxygen by mask or cannula
   b. Suctioning
   c. Managing airway, except intubation and other advanced airway maneuvers
   d. Administering analgesics, including IV route (**EMT-I, EMT-P**)
   e. Controlling bleeding (Continued next page)

DO NOT RESUSCITATE (DNR) ORDERS - EMS (cont.)



f. Making patient comfortable
g. Comforting family
h. For covered persons in cardiac or respiratory arrest, resuscitative measures to be withheld include:
    i. External chest compression
    ii. Artificial ventilations, intubation or other advanced airway maneuvers
    iii. Defibrillation/external cardiac pacing
    iv. Administration of cardiac medications
    v. Artificial respiration
i. If CPR has been initiated and a valid exclusion to resuscitation has been subsequently verified, CPR may be discontinued and direct Medical Control Contacted as needed.

2. EMS procedures for implementing Durable Powers of Attorney include:
    a. Primary Assessment - Perform initial primary Assessment, i.e., Assess airway, breathing and circulation.
    b. Verify identification by:
        i. Using a driver's license or other signed photo identification; or,
        ii. Identification by a family member; or,
        iii. Positive third-party identification by someone who knows the person
        iv. Verify the identification of the person identified in the Durable Power of Attorney as the authorized health care decision-maker.
    c. Follow that person's instructions as authorized by the Durable Power of Attorney.
    d. If there is any question about the validity of a Durable Power of Attorney, every attempt should be made to validate it. If there is any indication of an attempted homicide, initiate resuscitation until such time that the questions have been answered. If possible, Contact Medical Control for consultation.
3. Where a person has both EMS DNR orders and a Durable Power of Attorney, the most recent document shall prevail for pre hospital treatment only.

INVOLUNTARY RESTRAINT AND TRANSPORT

DESCRIPTION OF CONDITION

Emergency treatment applies to any age patient. Emergency treatment without consent implies that a life threat exists and patient is mentally incapable of making decisions on their own behalf. Reasonable force can be used, but only that force necessary to treat and transport the patient.

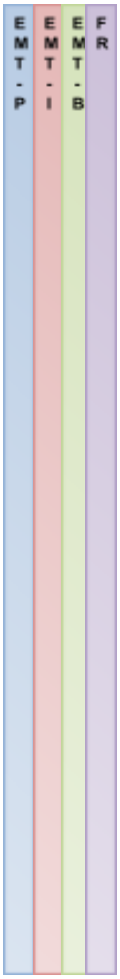
24-10B-9.1. Emergency transportation.

Any person may be transported to an appropriate health care facility by an emergency medical technician, under medical direction, when the emergency medical technician makes a good faith judgment that the person is incapable of making an informed decision about his own safety or need for medical attention and is reasonably likely to suffer disability or death without the medical intervention available at such a facility.

EMPHASIS ON PATIENT CARE

Provider safety, transport decisions

PRE-HOSPITAL MANAGEMENT



1. Several attempts to gain consent for treatment and transport must be made prior to any attempts to subdue the patient.
2. If the patient meets the following criteria, the EMS provider may use reasonable force to treat and transport.
   a. The patient, or legal medical decision maker, words or actions indicate that he/she is mentally incapable of making decisions on their own behalf. Such as:
      i. Displays altered mental status.
      ii. Patient has inappropriate responses to questions.
      iii. Evidence of significant drug, alcohol, or other impairment (e.g. medical condition).
      iv. Disoriented to time, person, place, or event
      v. Suicide attempt or talking about attempting suicide.
   b. A life-threat is suspected of existing or does exist.
3. Use the following guidelines to secure and treat the patient.
   a. Call for law enforcement assistance.
   b. Have enough personnel to safely secure patient and assure that all personnel are informed of plans and are involved.
   c. Adequately restrain the patient to stretcher or other device, as needed.
   d. At least two EMTs should be present at all times, if the patient is, or suspected of being combative.
   e. Keep bystanders and onlookers away from the patient as they may agitate the patient.
   f. All resuscitative measures to sustain life may be executed.
   g. The EMS provider must be in voice Contact with Medical Control.
   h. Transportation is limited to an appropriate health care facility.
4. Document all actions, statements, and responses to your questions that support your decision to treat the patient without consent.

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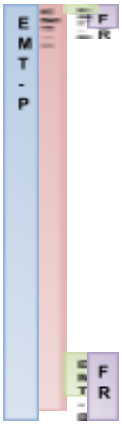
INVOLUNTARY RESTRAINT AND TRANSPORT (Cont.)



5. Use physical restraint only if necessary for protection of EMS providers or the patient
6. Chemical restraint with benzodiazepines may be Considered if the patient remains a danger to him or herself or to EMS personnel after attempts at verbal de-escalation. This may be done prior to physical restraints if EMS personnel determine that it is safer to attempt medications first. Consider:

MIDAZOLAM

   a. Adult:
      i. [5-10 mg] IN/IM. Max single dose is 10mg. May repeat once after 10 minutes
      ii. [2 to 5 mg] SIVP/IO. Repeat every 5 minutes as needed up to 10mg.

7. Prepare to manage the airway and ventilation status of the patient.
8. Monitor for cardiac changes.

REFUSAL - ADULT

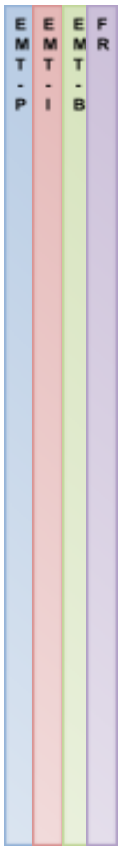
DESCRIPTION OF CONDITION

A competent adult (18 years or older) and/or emancipated minors may refuse any or all treatment or transport at any time. If patient, or legal medical decision maker, is not capable of making rational decisions, follow Involuntary Restraint and Transport Guidelines. All refusal patients must be evaluated, vital signs obtained (if possible), and informed of the situation and the potential life threat or disability.

EMPHASIS ON PATIENT CARE

Provider safety, transport decisions

PRE-HOSPITAL MANAGEMENT



1. Primary Assessment - Assess airway, breathing and circulation and manage as indicated.
2. Perform the following (if patient allows):
   a. Obtain a complete set of vital signs and complete an initial Assessment with particular attention to the individual's neurologic and mental status.
   b. Determine the individual's ability to make a valid judgment concerning the extent of his/her illness or injury. If the EMS provider has doubts about whether the individual has the mental capacity to refuse or if the patient lacks capacity, the EMS provider should Contact direct medical direction.
   c. If patient has capacity, clearly explain to the individual and all responsible parties the possible risks and overall concerns with regards to refusing care. Attempts to inform should be done in the presence of a witness, i.e. family members, bystander, or Police Officer (preferably not a member of the EMS service).
   d. Complete the patient care report clearly documenting the initial Assessment findings and the discussions with all involved individuals regarding the possible consequences of refusing additional prehospital care and/or transportation
   e. Obtain the patient's signature on refusal and information for report.
   f. Have a witness sign below narrative.
   g. Even though you have obtained a signature, take reasonable steps to protect patient by calling a friend or family member to attend to patient.
3. EMS refusal of care represents one of the highest liability exposures that an EMS Provider will ever face. All refusals should be carefully documented. Consider having Medical Control speak directly with the patient by cell phone or radio.
4. If care is requested, perform appropriate medical care with the consent of the individual.

REFUSAL - PEDIATRIC

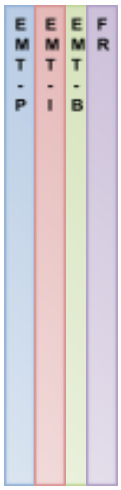
DESCRIPTION OF CONDITION

Children are unable to refuse treatment and transport on their own behalf. A parent, or guardian, may refuse any part of or all treatment and/or transport on behalf of the patient. Remember this guideline is used only if no life threats exist. If a life threat is present, follow Involuntary Restraint and Transport Guideline.

EMPHASIS ON PATIENT CARE

Provider safety, transport decisions

PRE-HOSPITAL MANAGEMENT



1. History, physical exam, vital signs (if patient allows):
   a. Inform parent or legal guardian of patient's medical condition, potential injury or illness, potential ramifications if treatment and transport are refused.
   b. Assure the parent or legal guardian fully understands what you are saying.
   c. Attempts to inform must be done in the presence of a witness, i.e. family members, bystander, or police officer (preferably not a member of the EMS service).
   d. Obtain the parent's or legal guardian's signature on refusal and information for report.
   e. Have a witness sign refusal.
   f. Document all attempts to gain consent for treatment, advisement of potential injury or illnesses, and potential ramifications if treatment is not rendered.
2. If parents are not available, make all reasonable efforts to locate parents or legal guardians and have them come to the scene, otherwise transport the patient to the nearest appropriate facility. Consider Contacting Medical Control.

MCKINLEY COUNTY EMS SYSTEM GUIDELINES Adopted by
GALLUP MEDSTAR AMBULANCE SERVICE
CITY OF GALLUP FIRE DEPARTMENT
MCKINLEY COUNTY FIRE AND EMS

DRUGS

FIRST RESPONDER
EMT - BASIC
EMT - INTERMEDIATE (AEMT)
EMT - PARAMEDIC

REV 8: Updated 2024

TABLE OF CONTENTS

MEDICATION FORMULARY

MEDICATION	FIRST RESPONDER	BASIC	INTERMEDIATE	PARAMEDIC
Albuterol	x	x	x	x
Aspirin	x	x	x	x
Epinephrine 1mg/mL (1:1,000)	x	x	x	x
Naloxone	x	x	x	x
Oral Glucose	x	x	x	x
Oxygen	x	x	x	x
Acetaminophen		x	x	x
Activated Charcoal		x	x	x
Ibuprofen		x	x	x
Ipratropium		x	x	x
Diazepam			x	x
Dextrose (D10W or D50)			x	x
Diphenhydramine			x	x
Epinephrine 0.1mg/mL (1:10,000)			x	x
Fentanyl			x	x
Glucagon			x	x
Lidocaine 2% (for IO Admin)			x	x
Methylprednisolone			x	x
Midazolam			x	x
Morphine			x	x
Nitroglycerin			x	x
Normal Saline			x	x
Ondansetron			x	x
Promethazine			x	x

MEDICATION	FIRST RESPONDER	BASIC	INTERMEDIATE	PARAMEDIC
Adenosine				x
Amiodarone				x
Atropine Sulfate				x
Calcium Chloride				x
Calcium Gluconate				x
Dopamine				x
Furosemide				x
Lactated Ringers				x
Lidocaine				x
Magnesium Sulfate				x
Oxytocin				x
Sodium Bicarbonate				x
Thiamine				x

ACETAMINOPHEN (TYLENOL®)

SCOPE OF PRACTICE

EMT-Basic, EMT-Intermediate and EMT-Paramedic

CLASS OF DRUG

Analgesic, Antipyretic

PHARMACOLOGIC ACTION

May work peripherally to block pain impulse generation; may also inhibit prostaglandin synthesis in CNS.

INDICATIONS

1. Fever in pediatric patients
2. Pain management

CONTRAINDICATIONS

1. Hypersensitivity to the drug
2. Hepatic failure or impairment

DRUG INTERACTION

1. Phenothiazines - may produce hypothermia
2. Phenobarbital - increase hepatic toxicity

ADMINISTRATION

1. Adult: [650-975mg] orally
2. Pediatric: [10-15 mg/kg] orally
3. Not to exceed 50 mg/kg/24 hours

SPECIAL NOTES

1. There are multiple over-the-counter medications, as well as scheduled drugs, that include acetaminophen as an active ingredient.

ACETYLSALICYLIC ACID (ASA, ASPIRIN)

SCOPE OF PRACTICE

First Responder, EMT-Basic, EMT-Intermediate and EMT-Paramedic

CLASS OF DRUG

Antiplatelet agent, non-steroidal anti-inflammatory drug (NSID)

PHARMACOLOGIC ACTION

Inhibits synthesis of prostaglandin by cyclooxygenase; inhibits platelet aggregation; has antipyretic and analgesic activity.

INDICATIONS

1. For adults with suspected cardiac chest pain, including possible AMI patients.

CONTRAINDICATIONS

1. Hypersensitivity to aspirin or NSAIDs
2. Bleeding disorders
3. Aspirin-intolerant Asthma

ADMINISTRATION

1. Adult: [324 mg] orally for AMI (prefer chewable)
2. Pediatric: Should not to be given to pediatric patients.

SPECIAL NOTES

1. All patients with suspected AMI and without contraindications should receive aspirin.
2. Multiple over-the-counter medications, as well as scheduled drugs, include asprin as an \ active ingredient.

ACTIVATED CHARCOAL (ACTIDOSE-AQUA®)

SCOPE OF PRACTICE

EMT-Basic, EMT-Intermediate and EMT-Paramedic

CLASS OF DRUG

Antidotes, other

PHARMACOLOGIC ACTION

Adsorbs a variety of drugs and chemicals (e.g. physical binding of a molecule to the surface of charcoal particles) desorption of bound particles may occur unless the ration of charcoal to toxin is extremely high.

INDICATIONS

Activated charcoal is used in the treatment of certain cases of poisoning and over-doses in the alert patient. Most commonly given in the hospital after gastric lavage, but it is appropriate to give in the pre-hospital setting before lavage if a long transport time is anticipated.

CONTRAINDICATIONS

1. Acids or alkali ingestion unless other drugs have ingested.
2. GI obstruction
3. Unprotected airway (beware of aspiration)

DRUG INTERACTION

1. Contact MCEP before giving in acetaminophen OD's. Charcoal interferes with the function of N-Acetylcysteine, an antidote for acetaminophen.
2. Milk products-decreases effectiveness.

ADMINISTRATION

1. Adult: [1 gm/kg] PO.
2. Pediatric: Same as adult

SPECIAL NOTES

1. The patient must be capable of protecting their airway over time.

ADENOSINE (ADENOCARD®)

SCOPE OF PRACTICE

EMT-Paramedic

CLASS OF DRUG

Endogenous nucleoside; antidysrhythmic

PHARMACOLOGIC ACTION

Slows conduction through AV node and interrupts AV reentry pathways, which restore normal sinus symptoms.

INDICATIONS

Conversion of regular, narrow complex tachycardia, stable supraventricular tachycardia (SVT) or regular, monomorphic wide complex tachycardia

CONTRAINDICATIONS

1. Hypersensitivity
2. Second or third degree A-V block (except those on pacemakers) and sick sinus syndrome, unless a pacemaker is in place, atrial flutter or fibrillation, ventricular tachycardia.

DRUG INTERACTION

1. Carbamazepine - increased likelihood of progressive heart blocks.
2. Dipyridamole - potentiates the effect of adenosine (reduce the dosage).
3. Xanthines - reduces effectiveness (a larger dosage may be required).
4. Nicotine - may increase risk of tachycardia.

ADMINISTRATION

1. Adult [6 mg] rapid IV/IO (1-2 seconds) followed with a 20 cc flush. May be repeated in 1-2 minutes, a second dose of [12 mg] rapid IV/IO followed by a 20 cc flush. Single doses of greater than 12 mg should not be given. May be given up to three times and always follow each bolus with a 20 cc flush.
2. Pediatric: Initial: [0.1 mg/kg (max dose 6 mg)] rapid IV/IO. Repeat in 2-3 minutes if no change at [0.2 mg/kg (max dose 12 mg)] rapid IV/IO.

SPECIAL NOTES

1. Use on patients with asthma, may induce bronchospasms.
2. Safety in pregnancy is unknown.
3. Transient dysrhythmias, such as periods of asystole, are common and self-limiting, requiring no treatment unless they persist.
4. Side effects may include: facial flushing, headache, chest pain, dyspnea, lightheadedness, and nausea.
5. Must be given in the IV port most proximal to the patient.
6. Be aware that ADENOSINE may not be effective in WPW with atrial fibrillation/flutter.

ALBUTEROL (PROVENTIL®, VENTOLIN®, PROAIR®, ACCUNEB®)

SCOPE OF PRACTICE

First Responder, EMT-Basic, EMT-Intermediate and EMT-Paramedic

CLASS OF DRUG

Beta 2 agonist

PHARMACOLOGIC ACTION

Beta 2 receptor agonist with some beta-1 activity; relaxes bronchial smooth muscle with little effect on heart rate.

INDICATIONS

1. Albuterol is used to treat reversible airway obstruction caused by:
    i. Wheezing associated with asthma
    ii. COPD (emphysema)
    iii. Chronic bronchitis

CONTRAINDICATIONS

1. Hypersensitivity
2. Tachycardia secondary to heart condition.

DRUG INTERACTION

1. Beta adrenergic agents - potentiates the effects
2. MAO inhibitors - may lead to hypertensive crisis
3. Beta adrenergic blockers - decreases the effectiveness

ADMINISTRATION

1. Adult: [2.5-5.0 mg] (up to 10 mg) in 3 ml of sterile NS given as nebulized inhalation therapy over 5-15 minutes, may be repeated as necessary.
2. Pediatric: [1.25-2.5 mg] (up to 5 mg) in 3 ml of sterile NS given as nebulized inhalation therapy over 5-15 minutes, may be repeated as necessary.

SPECIAL NOTES

1. Most side effects are dosage related.
2. May decrease arterial oxygen tension acutely by causing bronchodilation in areas of lung with poor blood perfusion
3. Care should be taken if patient is already using an inhalant due to possible development of severe paradoxical airway resistance with repeated excessive use.

AMIODARONE (CORDARONE®, PACERONE®, NEXTERONE®)

SCOPE OF PRACTICE

EMT-Paramedic

CLASS OF DRUG

Antiarrhythmic

PHARMACOLOGIC ACTION

Class III antidysrhythmic agent, which inhibits adrenergic stimulation; affects sodium, potassium, and calcium channels; markedly prolongs action potential and repolarization; decreases AV conduction and sinus node function.

INDICATIONS

1. Management of regular wide complex tachycardia in stable patients
2. Irregular wide complex tachycardia in stable patients
3. Antidysrhythmic for the management of ventricular fibrillation (VF) and pulseless ventricular tachycardia (VT)

CONTRAINDICATIONS

1. Hypersensitivity
2. High degree AV blocks or sinus node dysfunction with marked bradycardia unless a functional pacemaker is in place.
3. Congestive heart failure
4. Cardiogenic Shock

DRUG INTERACTION

Enhanced bradycardia and hypotension when given with other beta-blockers or calcium channel blockers.

ADMINISTRATION

1. Adult:
    i. Pulseless VT/VF:[300 mg] initial bolus IV/IO after epinephrine. May re-bolus with [150mg] once.
    ii. Sustained VT: [150 mg] over 10 minutes. May re-bolus every 10 minutes as needed up to a maximum dose of 15 mg/kg/day.
    iii. Maintenance infusion:[1.0 mg/min] over first 6 hours; [0.5 mg/min], 540 mg IV/IO over 18 hours.
2. Pediatric:
    i. Pulseless VT/VF [5mg/kg] IV/IO. May re-bolus every 3-5 minutes to a maximum of 15 mg/kg/24 hours
    ii. Sustained VT [5 mg/kg] IV/IO over 20-60 minutes. May repeat twice, up to 15 mg/kg /24 hours; maximum single dose 150mg.

SPECIAL NOTES

1. Must be drawn up slowly to avoid 'bubbles" do not shake the ampule for the same reason.
2. Cannot be administered via ET tube.

ANTI-EMETIC AGENTS

Promethazine (Phenergan®)

SCOPE OF PRACTICE

EMT-Intermediate, EMT-Paramedic

CLASS OF DRUG

Antiemetic

PHARMACOLOGIC ACTION

Mechanism not fully characterized; selective 5-HT3 receptor antagonist; binds to 5-HT3 receptors both in periphery and in CNS, with primary effects in GI tract. Has no effect on dopamine receptors and therefore does not cause extrapyramidal symptoms

INDICATIONS

1. Treatment and prevention of nausea and vomiting.

CONTRAINDICATIONS

1. Hypersensitivity to phenothiazines
2. Comatose patients
3. CNS depression due to drugs
4. Children < 2yrs old, or critically ill or dehydrated.
5. Lactation

DRUG INTERACTION

1. CNS depressants -may increase, prolong or intensify the sedative action.
2. Anticholinergics - use caution
3. MAO inhibitors - use caution

ADMINISTRATION

1. Adult: [12.5-25 mg] PO,IV/IO, IM

SPECIAL NOTES

1. This is a second-line choice for the treatment of nausea and vomiting. Consider using Zofran as a first-line drug.
2. Use caution in geriatric or debilitated patients; consider using lower doses.
3. Use cautiously in patients with hypertension, epilepsy, sleep apnea, cardiovascular disease, impairment of the liver, and pregnancy.
4. Be prepared to treat dystonic reactions (as presenting with muscle spasms) with Diphenhydramine (Benadryl).
5. May caused marked drowsiness
6. Do not use in patients with known Long QT Syndrome

(Continued next page)

ANTI-EMETIC AGENTS (cont)

Ondansetron (Zofran®)

SCOPE OF PRACTICE

EMT-Intermediate, EMT-Paramedic

CLASS OF DRUG

Anti-emetic

PHARMACOLOGIC ACTION

Mechanism not fully characterized; selective 5-HT3 receptor antagonist; binds to 5-HT3 receptors both in periphery and in CNS, with primary effects in GI tract. Has no effect on dopamine receptors and therefore does not cause extrapyramidal symptoms

INDICATIONS

Treatment and prevention of nausea and vomiting.

CONTRAINDICATIONS

1. Known hypersensitivity to Ondansetron or related agents.

DRUG INTERACTION

1. Co-administration with apomorphine; combination reported to cause profound hypotension and loss of consciousness

ADMINISTRATION

1. Adult [4mg] IV/IO/PO/IM. May repeat in 30 minutes.

*[8mg] Oral Dissolving Tablets (ODT). Place ODT in patient's mouth and instruct the patient to allow it to dissolve. The tablet dissolves in seconds and any residue may then be swallowed.

2. Pediatric: [0.05-0.1 mg/kg] IV/IO/PO/IM (Max dose 4mg)

*[4mg] ODT (12-17 years of age)

*** Note**: Providers may not administer a second dose of Zofran. ODT, or exceed the adult or pediatric doses listed above. Lower dosing in the elderly is not necessary

SPECIAL NOTES

1. Reduce dosages (2-4mg) IV/IO or IM for elderly or debilitated patients, e.g. hepatic dysfunction or know prolonged QT syndrome.

WARNING: May cause dose-dependent QT prolongation, avoid in patients with congenital long QT syndrome

ATROPINE SULFATE

SCOPE OF PRACTICE

[1]First Responder, [1]EMT-Basic, [1]EMT-Intermediate and EMT-Paramedic

CLASS OF DRUG

Anticholinergic, toxicity antidote

PHARMACOLOGIC ACTION

Competitively inhibits action of acetylcholinesterase on autonomic effectors innervated by postganglionic nerves.

INDICATIONS

1. Symptomatic sinus bradycardia or A-V Blocks
2. Anticholinesterase poisonings - organophosphate, mushrooms (certain types), and nerve gases
3. Adjunct in the treatment of bronchial asthma

CONTRAINDICATIONS

1. No absolute contraindications for ACLS, documented hypersensitivity in non-ACLS/nerve agent/organophosphate scenarios

DRUG INTERACTION

Antihistamines, tricyclic antidepressants - additive affect

ADMINISTRATION

1. Cardiac Indications:
    i. Adult: [1 mg] IV/IO, every 3-5 minutes: Max dose 3 mg. (0.04 mg/kg) for bradycardia.
    ii. Pediatric: [0.02 mg/kg] IV/IO for 1 dose. Minimum of 0.1 mg and maximum of 0.5 mg. [0.03 mg/kg] ET.
2. Anticholinesterase poisoning:
    i. Adult: [2.0 mg] IV, ET, or IO repeated until symptoms abate
    ii. Pediatric: [0.05 mg/kg] IV, ET, or IO, repeated until symptoms abate
3. Mushroom Poisoning:
    i. Adult: [2 mg] IV, repeated to doses sufficient enough to control parasympathomimetic signs

SPECIAL NOTES

1. Available evidence suggests that the routine use of Atropine during asystole is unlikely to have a therapeutic benefit. Atropine is no longer recommended for use in asystole or PEA.
2. May be not be effective with high degree A-V block (2nd degree type II, 3rd degree) - do not delay pacing.
3. Bradycardia in the setting of an acute MI is common and probably beneficial. Don't treat the rate unless there are signs of poor perfusion (i.e. low blood pressure, mental confusion). Chest pain could be due to an AMI or to poor perfusion caused by the bradycardia itself.
4. Atropine increases the workload and myocardial 02 consumption of heart. Beware of patients who have an ischemic myocardium. Administer supplemental oxygen.
5. Ineffective in hypothermic bradycardia

6. [1]IM injection for treatment of chemical and/or nerve agent exposure, via auto injector only

BENZODIAZEPINES

Diazepam – (Valium®, Diastat®, AcuDial®)

SCOPE OF PRACTICE

EMT-Paramedic, EMT-Intermediate via special skill

CLASS OF DRUG

Benzodiazepine, anticonvulsants, skeletal muscle relaxants, anxiolytic

PHARMACOLOGIC ACTION

Modulates postsynaptic effects of GABA-A transmission, resulting in an increase in presynaptic inhibition. Appears to act on part of the limbic system, as well as on the thalamus and hypothalamus, to induce a calming effect

INDICATIONS

1. Control of seizures
2. Reduction of anxiety in agitated or violent patients

CONTRAINDICATIONS

1. Hypersensitivity
2. Severe respiratory depression

DRUG INTERACTION

1. Additive effect to other CNS depressants such as alcohol, narcotics, etc

ADMINISTRATION

1. Adults
   i. [2-10 mg] IV/IO/IM, slow with IV running open
2. Pediatric:
   i. [0.05 – 0.1 mg/kg] IV/IO

   Note: Apnea in children after diazepam administration may occur

SPECIAL NOTES

1. Should not be mixed with other agents, or diluted with intravenous solutions. Give through the proximal end of IV tubing, then flush well.
2. Most likely to produce respiratory depression in patients who have taken other depressant drugs, especially alcohol and barbiturates.
3. It can cause local venous irritation. Use relatively large veins.
4. Utilization of pharmacological agents for the primary purpose of sedation, induction, or muscle relaxation to facilitate placement of an advanced airway requires Medical Direction Committee Special Skills approval.

WARNING: May cause respiratory depression, arrest, or apnea

BENZODIAZEPINES (cont.)

Midazolam – (Versed®)

SCOPE OF PRACTICE

EMT-Paramedic, EMT-Intermediate via special skill

CLASS OF DRUG

Anticonvulsants, other; antianxiety agent; anxiolytics; benzodiazepines

PHARMACOLOGIC ACTION

Binds receptors at several sites within the CNS, including the limbic system and reticular formation; effects may be mediated through gabba-aminobutyric acid (GABA) receptor system; increase in neuronal membrane permeability to chloride ions enhances the inhibitory effects of GABA; the shift in chloride ions causes hyperpolarization (less excitability) and stabilization of the neuronal membrane

INDICATIONS

1. Control of seizures
2. Uncontrolled shivering in hypothermia
3. Reduction of anxiety in agitated or violent patients suffering behavioral emergencies

CONTRAINDICATIONS

1. Hypersensitivity
2. Severe respiratory depression
3. Sleep apnea

ADMINISTRATION

1. Adult:
   i. [5-10 mg] IN/IM. Max single dose is 10mg. May repeat once after 10 minutes
   ii. [2 to 5 mg] SIVP/IO. Repeat every 5 minutes as needed up to 10mg.
2. Pediatric:
   i. [0.2 mg/kg] IN/IM. Max single dose is 5mg. May repeat once after 10 min.
   ii. [0.1 mg/kg] SIVP/IO. Repeat every 5 minutes as needed, up to 10mg.

SPECIAL NOTES

1. Should not be mixed with other agents, or diluted with intravenous solutions. Give through the proximal end of IV tubing, then flush well.
2. Most likely to produce respiratory depression in patients who have taken other depressant drugs, especially alcohol and barbiturates.
3. It can cause local venous irritation. Use relatively large veins.
4. Versed has short half- life. Additional doses may be necessary.
5. Utilization of pharmacological agents for the primary purpose of sedation, induction, or muscle relaxation to facilitate placement of an advanced airway requires Medical Direction Committee Special Skills approval.

WARNING: May cause respiratory depression, arrest, or apnea

BLOOD (PACKED RED CELLS, FRESH PLASMA, WHOLE BLOOD)

SCOPE OF PRACTICE

EMT-Paramedic

No pump required.

CLASS OF DRUG

Naturally occurring colloid

PHARMACOLOGIC ACTION

RBCs are used to restore oxygen-carrying capacity to the blood of a patient that is suffering from an anemia due to trauma or other (perhaps chronic) medical problems, and are by far the most common blood component used in transfusion medicine.

Plasma serves as the protein reserve of the human body. It plays a vital role in an intravascular osmotic effect that keeps electrolytes in balanced form and protects the body from infection and other blood disorders.[

Whole blood, if available, may be indicated for large volume hemorrhaging, such as seen with major trauma, requiring massive transfusion and rapid correction of anemia, coagulopathy, acidosis, and hypothermia.

INDICATIONS

1. To maintain blood volume or replenish blood loss

CONTRAINDICATIONS

1. Non-compatible blood

ADMINISTRATION

1. [10 ml/kg] or based on H/H

SPECIAL NOTES

1. Double check blood ID # and patient ID.
2. Save bags after administration.
3. Save all bags and tubing if there is a reaction, after stopping transfusion.
4. Close monitoring of body temperature is mandatory during infusion.

CALCIUM PREPARATIONS

CALCIUM GLUCONATE, CALCIUM CHLORIDE

SCOPE OF PRACTICE

EMT-Paramedic

CLASS OF DRUG

Antidotes, other; calcium salts

PHARMACOLOGIC ACTION

Bone mineral component; cofactor in enzymatic reactions, essential for neurotransmission, muscle contraction, and many signal transduction pathways

INDICATIONS

1. Used as antidote for calcium channel blocker overdoses
2. Topical Burns (hydrofluoric acid)
3. Magnesium sulfate overdoses

CONTRAINDICATIONS

1. Hypercalcemia
2. Documented hypersensitivity
3. Life-threatening cardiac arrhythmias may occur in known or suspected severe hypokalemia

DRUG INTERACTION

1. Increase toxicity of cardiac glycoside
2. Calcium should be given in a dedicated IV line
3. DO NOT mix with Sodium Bicarbonate

ADMINISTRATION

1. Calcium Gluconate
   i. Adult: [5 - 10 ml] SLOW IVP (Do Not Exceed 2 ml/minute) repeat if necessary after 5 - 10 min.
   ii. Pediatric: [0.6 ml/kg] SLOW IVP of 10% solution
2. Calcium Chloride:
   i. Adult: [5-10ml] by SLOW IVP. Repeat every 10 minutes as needed (1 ml of 10% = 100 mg of calcium chloride).
   ii. Pediatric: [0.2 ml/kg] (10% solution) by SLOW IVP. Repeat once in 10 minutes if needed.

NOTE: **RAPID INJECTION CAN CAUSE HYPOTENSION, BRADYCARDIA AND DEATH.**

SPECIAL NOTES

1. It is best to warm the drug to body temperature prior to administration.
2. If heart is beating, rapid administration of calcium salts can produce bradycardia and/or arrest.
3. May increase cardiac irritability, i.e., PVC's, particularly in the presence of digitalis.
4. Local infiltration will cause significant tissue necrosis at injection site

CORTICOSTEROIDS (cont)

Methylprednisolone (Solu-Medrol®)

Medrol®, Medrol Dosepak®, DepoMedrol®

SCOPE OF PRACTICE

[1]EMT-Intermediate and EMT-Paramedic

[1] For reactive airway disease/acute asthma exacerbation

CLASS OF DRUG

Corticosteroid, Anti-Inflammatory; immunosuppressant

PHARMACOLOGIC ACTION

Potent glucocorticoid with minimal to no mineralocorticoid activity. Modulates carbohydrate, protein, and lipid metabolism and maintenance of fluid and electrolyte homeostasis. Controls or prevents inflammation by controlling rate of protein synthesis, suppressing migration of polymorphonuclear leukocytes (PMNs) and fibroblasts, reversing capillary permeability, and stabilizing lysosomes at cellular level

INDICATIONS

1. Reactive airway disease with no response to Albuterol and other treatments
2. Allergic reactions

CONTRAINDICATIONS

1. Hypersensitivity
2. Immunocompromised state; serious infections; psychotic disorders

DRUG INTERACTION

None

ADMINISTRATION

1. Adults – [125mg] IV/IO (Max dose 125mg)
2. Pediatrics – [1-2mg/kg] IV/IO (Max dose 125mg)

SPECIAL NOTES

1. Adverse effects – hyperglycemia; psychosis
2. High dose methylprednisolone is no longer given routinely for spinal cord injury but may occasionally be ordered by a neurosurgeon.

DEXTROSE (ORAL/IV/IO – 10%, 25% AND 50%)

SCOPE OF PRACTICE

[1]First Responder, [1]EMT-Basic, EMT-Intermediate and EMT-Paramedic

[1] Oral Glucose Preparations only

CLASS OF DRUG

Glucose-elevating agents; metabolic and endocrine, other

PHARMACOLOGIC ACTION

Parenteral dextrose is oxidized to carbon dioxide and water, and provides 3.4 kilocalories/gram of d-glucose

INDICATIONS

1. Symptomatic hypoglycemia
2. Unconsciousness with suspected hypoglycemia
3. Seizures (associated with decreased BGL) of:
    i. Unknown etiology
    ii. New onset of seizures
    iii. Known diabetic actively seizing

CONTRAINDICATIONS

1. Hyperglycemia
2. Diabetic coma
3. Intra-cranial or intraspinal hemorrhage
4. Anuria
5. Dehydrated patients with delirium tremens
6. Unconscious (for oral dextrose)

DRUG INTERACTION

1. None

ADMINISTRATION

1. Oral:[12-25 gm] of paste, may be spread with a tongue depressor
2. IV:
    i. Adult: [12.5 to 25 gm] slow IV/IO push into patent line, if patient is unable to protect airway or tolerate oral fluids. May be repeated as needed. Be prepared to restrain. May be given rectally (paramedic only). May give as 10% Dextrose solution (25gm in 250mL water) via IV drip.
    ii. Pediatric: Dilute 1:1 with sterile saline to make 25% solution (0.25 mg/ml) Give [0.5 - 1.0 g/kg] slow IV push. May be given rectally (paramedic only)
    iii. Neonates: Use a 10% Dextrose solution (dilute 50ml D50 in 500ml bag of D5W) at [0.2 gm/kg].

(Continued next page)

DEXTROSE (cont.)

SPECIAL NOTES

1. Attempts at documenting hypoglycemia via automatic glucometry should be made before administration
2. Must insure patent IV line, and recheck patency during administration
3. Do not administer through the same infusion set as blood.

DIPHENHYDRAMINE HCL (BENADRYL®)

SCOPE OF PRACTICE

EMT-Intermediate and EMT-Paramedic

CLASS OF DRUG

Antihistamine, H1 blocker

PHARMACOLOGIC ACTION

Histamine H1-receptor antagonist of effector cells in respiratory tract, blood vessels, and GI smooth muscle

INDICATIONS

1. Allergic reactions
2. Anaphylaxis
3. Dystonic reaction to phenothiazines

CONTRAINDICATIONS

1. Documented hypersensitivity
2. Use controversial in lower respiratory tract disease (such as acute asthma), premature infants and neonates

DRUG INTERACTION

1. Additive CNS depression with alcohol, sedatives, narcotics

ADMINISTRATION

1. Adults: [25-50 mg], slow IV/IO at a rate of 1ml/min or deep IM injection
2. Pediatric: [1 mg/kg], slow IV/IO; deep IM injection with a maximum dose of 50 mg

SPECIAL NOTES

1. May have an immediate effect in dystonic reactions.
2. No early benefit in allergic reactions

EPINEPHRINE (ADRENALINE®) (1:1,000 AND 1:10,000 SOLUTIONS)

EpiPen®, TwinJect®, Adrenaclick®, Auvi-Q, Adrenalin®, AsthmaNefrin®, Vaponefrin®

SCOPE OF PRACTICE

[1]First Responder, [1]EMT-Basic, EMT-Intermediate and EMT-Paramedic

[1]1:1000, no single dose greater than 0.3 ml, subcutaneous or intramuscular injection with a pre-measured syringe (including autoinjector) or 0.3 ml TB syringe for anaphylaxis or status asthmaticus refractory to other treatments.

CLASS OF DRUG

Sympathomimetic, Alpha/beta adrenergic agonist

PHARMACOLOGIC ACTION

Strong alpha-adrenergic effects, which cause an increase in cardiac output and heart rate, a decrease in renal perfusion and peripheral vascular resistance, and a variable effect on BP, resulting in systemic vasoconstriction and increased vascular permeability. Strong beta-1- and moderate beta-2-adrenergic effects, resulting in bronchial smooth muscle relaxation

Secondary relaxation effect on smooth muscle of stomach, intestine, uterus, and urinary bladder

INDICATIONS

1. Severe Bronchospasm
2. In the nebulized form for croup/bronchiolitis and IM form for refractory acute asthma
3. Anaphylaxis
4. Cardiac Arrest
5. Symptomatic bradycardia refractory to other treatments
6. Shock

CONTRAINDICATIONS

1. Hypersensitivity
2. Cardiac dilatation
3. Coronary insufficiency

DRUG INTERACTION

1. Reduced effects with Beta-adrenergic blocker

(Continued next page)

EPINEPHRINE (cont.)

ADMINISTRATION

1. Cardiac Arrest
    i. Adult: [1 mg](1:10,000) every 3 - 5 minutes IV/IO preferred, may be given ET (2 - 2 1/2 times IV dose)
    ii. Pediatric: IV/IO 0.01 mg/kg (1:10,000) every 3-5 minutes. ET 0.1 mg/kg (1:1000)
2. Bradycardia
    i. Adult: [1 mg/ 1:1,000] in 250 cc NS or D5W administered at 2 - 10 mcg/min
    ii. Pediatric: [0.01 mg/kg] IV/IO every 3-5 minutes or; [0.1-0.2 mcg/kg/minute] (0.6 x body weight (kg) equals milligrams to add to D5W to create a total volume of 100 m). Infuse at 1mL/h
3. Bronchospasm/Anaphylaxis
    i. Adult: [0.3 mg] (1:1,000) IM using a 0.3 ml syringe or pre-filled device.
    ii. Adult: [0.1 mg] (1:10,000) IV/IO over 5 minutes. Infusion of [1-4 mcg/min] (**Paramedic only**).
    iii. Pediatric: [0.01 mg/kg (1:1000)], IM to a maximum dose of 0.3 mg/dose
4. Croup
    i. Pediatric: Epi 1:1000 5ml (equivalent to 0.5ml 2.25% racemic epi) nebulized.

SPECIAL NOTES

1. When used for allergic reactions, increased cardiac workload can precipitate angina and/or AMI in susceptible individuals.
2. Due to peripheral vasoconstriction, it should be used with caution on patients with peripheral vascular insufficiency.
3. Consider pulmonary edema or pulmonary embolus in wheezing patients with a history of RAD.
4. EMT-Intermediates and Paramedics are not required to use a pre-filled device or 0.3 cc syringes.

FUROSEMIDE (LASIX®)

SCOPE OF PRACTICE

EMT-Paramedic

CLASS OF DRUG

Potent loop diuretic

PHARMACOLOGIC ACTION

Furosemide, like other loop diuretics, acts by inhibiting NKCC2, the luminal Na-K-2Cl symporter in the thick ascending limb of the loop of Henle. The action on the distal tubules is independent of any inhibitory effect on carbonic anhydrase or aldosterone; it also abolishes the corticomedullary osmotic gradient and blocks negative, as well as positive, free water clearance.

Additionally, furosemide is a noncompetitive subtype-specific blocker of GABA-A receptors.[9][10][11] Furosemide has been reported to reversibly antagonize GABA-evoked currents of α6β2γ2 receptors at μM concentrations, but not α1β2γ2 receptors.[9][11] During development, the α6β2γ2 receptor increases in expression in cerebellar granule neurons, corresponding to increased sensitivity to furosemide.

INDICATIONS

1. Hypertensive emergencies (AMI, APE, or encephalopathy)

CONTRAINDICATIONS

1. Hypovolemia
2. Hypokalemia
3. Hypotension

DRUG INTERACTION

1. Severe hypotension with antihypertensives and nitrates

ADMINISTRATION

1. Adult: For patients not currently taking furosemide, [20 - 40 mg] slow IVP or [0.5 - 1.0 mg/kg] slow IV/IO. If the patient is currently taking furosemide, double their current dose and administer IV/IO. You may repeat one dose in 2 hours.
2. Pediatric: [1.0 mg/kg] slow IVP. It may be repeated in 6 - 8 hours.

SPECIAL NOTES

1. There is controversy regarding the use of Lasix in acute pulmonary edema in the prehospital setting, and use is not recommended by the NASEMSO Medical Directors Council at this time. Since pulmonary edema is more commonly a problem of volume distribution than overload, administration of furosemide provides no immediate benefit for most patients.

GLUCAGON

GlucaGen®, Glucagon Emergency Kit®, GlucaGen HypoKit®

SCOPE OF PRACTICE

EMT-Intermediate, EMT-Paramedic

CLASS OF DRUG

Hypoglycemia antidotes, glucose-elevating agents, other antidotes (e.g. beta-blocker or calcium channel blocker overdose)

PHARMACOLOGIC ACTION

Insulin antagonist. Stimulates cAMP synthesis to accelerate hepatic glycogenolysis and gluconeogenesis. Glucagon also relaxes smooth muscles of GI tract

INDICATIONS

1. For the management of hypoglycemic patients
2. Beta blocker overdose with serious signs and symptoms (Paramedic Only)
3. Calcium channel blocker overdose with serious signs and symptoms (Paramedic Only)
4. Anaphylaxis refractory to epinephrine, or in patients who have history of serious coronary arterial disease and cannot receive epinephrine. (Paramedic Only)

CONTRAINDICATIONS

1. Patients who will be unable to receive supplemental glucose, orally, IV or rectally after administration of glucagon.
2. Hypersensitivity to pork and/or beef
3. Use with caution on patients with pheochromocytoma.

DRUG INTERACTION

1. Hyperglycemic effects intensified and prolong by epinephrine.
2. Will precipitate when mix with calcium preparation.

ADMINISTRATION

Note: 1 mg = 1 unit

1. Hypoglycemia
   i. Adult: [0.5 - 1 mg] IM, may repeat in 10 - 20 minutes if no response
   ii. Pediatric: [0.1 mg/kg] IM may repeat in 10 - 20 minutes if no response.

(Continued next page)

GLUCAGON (cont.)

2. Beta Blocker Overdose
   i. Adult: [3 to 10 mg] IV/IO over 1 minute. It. may be followed by an infusion of 2 - 5 mg/hr.
   ii. Pediatric:[0.1 mg/kg] IV/IO over 1 minute, repeat in 5 minutes, if needed.
3. Anaphylaxis
   i. Adult: [1 to 2 mg] slow IV/IO, may be repeated every 5 to 10 minutes.
   ii. Pediatric:[0.1 mg/kg up to 1 mg]. IV/IO, may be repeated every 5 to 10 minutes. Rarely indicated

SPECIAL NOTES

1. The patient must be given supplemental glucose ASAP; PO, IV, or Rectal. If this is not possible, the patient may be better off without glucagon. Glucagon will release all of the patient's available glycogen. If the patient is not provided with glucose, the subsequent hypoglycemia will be greater than before glucagon.
2. Glucagon is supplied in a powder and must be reconstituted with sterile water or saline, 1 ml of normal saline for each 1 mg of powder and shaken well.

IPRATROPRIUM (ATROVENT®)

SCOPE OF PRACTICE

EMT-Basic, EMT-Intermediate and EMT-Paramedic

CLASS OF DRUG

Anticholinergic, respiratory

PHARMACOLOGIC ACTION

Anticholinergic (parasympatholytic) agent; inhibits vagally mediated reflexes by antagonizing acetylcholine action; prevents increase in intracellular calcium concentration that is caused by interaction of acetylcholine with muscarinic receptors on bronchial smooth muscle.

INDICATIONS

1. Bronchial asthma
2. Reversible bronchospasm associated with chronic bronchitis and emphysema.

CONTRAINDICATIONS

1. Hypersensitivity to the drug, especially with Atropine products, soy and peanuts

DRUG INTERACTION

1. Oxivent and Spiriva

ADMINISTRATION

1. Should be administered in conjunction with beta agonist therapy.
   i. Adult: [1 – 2 inhalations] via metered dose inhaler
   [250 – 500mcg] (.25 - .5 mg)] via nebulization
   ii. Not recommended for pediatrics

SPECIAL NOTES

1. The vital signs must be monitored during therapy.
2. Caution should be used when administering it to elderly patients and those with cardiovascular disease or hypertension.

LIDOCAINE HYDROCHLORIDE (XYLOCAINE®)

SCOPE OF PRACTICE

[1]EMT-Intermediate, EMT-Paramedic

[1]Lidocaine (2%, preservative and epinephrine free for IV use) for administration into the intraosseous space on pain responsive patients prior to receiving intraosseous fluids or medications.

CLASS OF DRUG:

Antidysrhythmic, local anesthetic

PHARMACOLOGIC ACTION

Class IIb antidysrhythmic; combines with fast sodium channels and thereby inhibits recovery after repolarization, resulting in decreasing myocardial excitability and conduction velocity

INDICATIONS

1. Stable monomorphic Ventricular Tachycardia
2. Refractory or recurrent Ventricular fibrillation/pulseless ventricular tachycardia
3. Local anesthetic for nasal intubation
4. Local anesthetic for IO cannulation

CONTRAINDICATIONS

1. Hypersensitivity
2. SA/AV/intraventricular heart block in the absence of artificial pacemaker
3. Adams-Stokes syndrome.
4. CHF
5. Cardiogenic shock
6. Second and third degree heart block (if no pacemaker is present)
7. Wolff-Parkinson-White Syndrome

DRUG INTERACTION

1. Additive cardiac depression with phenytoin, quinidine, procainamide, and propranolol

ADMINISTRATION

1. IV/IO Bolus technique
    1. Adult:

        i. Ventricular tachycardia: [1 -1.5 mg/kg] IV/IO. If VT persists, [0.5-0.75 mg/kg] every 3 to 5 minutes, up to 3.0 mg/kg total. Start lidocaine infusion if VT converts (see below).

        ii. Ventricular fibrillation and pulseless VT: [1-1.5 mg/kg] IV/IO (2-2 1/2 times normal dose, ET) followed by defibrillation. If VF or VT persists - repeat [0.5-0.75mg/kg] (up to 3.0 mg/kg total) followed by defibrillation. Start lidocaine infusion if VF converts (see below).

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LIDOCAINE HYDROCHLORIDE (cont.)

2. Pediatric: [1 mg/kg] IV/IO

2. IV Drip technique
   1. Adult:
      i. Mix 1gm of lidocaine in 250 ml D5W or NS for a concentration of 4 mg/ml.
         a). If up to 2 mg/kg has been administered Set drip at 2 mg/min
         b). If 2 mg/kg has been administered Set drip at 3 mg/min
         c). If 3 mg/kg has been administered Set drip at 4 mg/min
      ii . A second bolus after 10 minutes may be given per physician order.
   2. Pediatric:
      i. Mix 120 mg of lidocaine in 100 ml D5W
      a). Set drip at 20-50 µg/kg per min. (1-2.5 cc/kg/hr at above dilution)
3. ET: 2 - 2 /12 times the bolus dose
4. IO Anesthetic
   i. 40 mg infused over 2 minutes. Allow to remain in place for 60 seconds. Connect tubing to IO and begin infusion.
   ii. Pediatric - 0.5 mg / kg not to exceed 40 mg over 2 minutes.
   iii. May repeat at ½ initial dose PRN.

SPECIAL NOTES

1. For patients over 70 years of age, or with hepatic or renal failure, the loading dose remains the same, but maintenance infusion is run at half the normal rate.

MAGNESIUM SULFATE

SCOPE OF PRACTICE

EMT-Paramedic

CLASS OF DRUG

CNS depressant; Class V antidysrhythmic; electrolyte; smooth muscle relaxant

PHARMACOLOGIC ACTION

Depresses CNS, blocks peripheral neuromuscular transmission, produces anticonvulsant effects; decreases amount of acetylcholine released at end-plate by motor nerve impulse. Slows rate of sino-atrial (SA) node impulse formation in myocardium and prolongs conduction time. Promotes movement of calcium, potassium, and sodium in and out of cells and stabilizes excitable membranes

INDICATIONS

1. Initial treatment of seizures associated with eclampsia, and seizures, refractory to benzodiazepines.
2. First-line antidysrhythmic in the treatment of Torsades de Pointes.
3. Acute asthma refractory to other more conventional treatment, or when the effects of beta-adrenergic medications contraindicate their use.

CONTRAINDICATIONS

1. Hypermagnesemia
2. Hypocalcemia
3. Anuria
4. Heart blocks
5. Diabetic Coma
6. Myocardial damage

DRUG INTERACTION

1. Potentiates neuromuscular blocking agents

ADMINISTRATION

1. Treatment of pre-eclampsia and/or seizures associated with eclampsia: [2 - 4 gm] slow IVP or IO followed by maintenance infusion of 1- 2 gm per hour
2. Torsades de Pointes: [1 - 2 gm] diluted in 10ml of D5W IV/IO push
3. Acute asthma: [1 - 2 gm] slow IVP or IO, or IV/IO infusion over 10 minutes

SPECIAL NOTES

1. Monitor deep tendon reflexes often, especially those patients receiving a maintenance infusion.
4. Calcium gluconate should be used to reverse the toxic effects of magnesium sulfate.
5. Monitor for hypotension.

NALOXONE (NARCAN®)

SCOPE OF PRACTICE

[1]First Responder, EMT-Basic, EMT-Intermediate and EMT-Paramedic

[1]Via nasal mucosal atomizer, or [IM delivery system (if patient's own medication)]

CLASS OF DRUG

Opioid reversal agent

PHARMACOLOGIC ACTION

Competitive opioid antagonist; synthetic congener of oxymorphone

INDICATIONS

1. Reversal of narcotic effects, particularly respiratory depression, due to narcotic drugs, whether ingested, injected, or administered in the course of treatment. Narcotic drugs include agents such as morphine, Demerol®, heroin, Dilaudid®, Percodan®, codeine, Lomotil®, propoxyphene (Darvon®), pentazocine (Talwin®).

CONTRAINDICATIONS

1. Hypersensitivity
2. Absences of indication

DRUG INTERACTION

1. Administration of naloxone can result in the sudden onset of opiate withdrawal (agitation, tachycardia, pulmonary edema, nausea, vomiting, and, in neonates, seizures)

ADMINISTRATION

1. Adult: [2mg (1mg per naris)] IN, [0.4 mg – 2.0 mg] IV/IO (2.0 mg total dose) - [0.4 – 2.0 mg] if IM, SQ, ET. Titrate to respiratory effort/rate. May be repeated at 2 - 3 minutes, if needed.
2. Pediatric: [0.1 mg/kg]< 5 yrs or ≤ 20 kg, [2 mg] ≥5 yr or > 20kg IV, ET, IM, SQ, IO,

May be repeated at 0.1 mg/kg if no response.

3. Neonate: [0.1 mg/kg] slow IVP, ET, IM, SQ, IO; repeat in 2-3 minutes, if needed

(mix 1 ml of naloxone, 0.4 mg in 9 ml of D5W, which gives 0.04 mg/ml)

Note: Much higher doses should be given to patients with suspected propoxyphene (Darvon®), pentazocine (Talwin®), and fentanyl overdoses.

SPECIAL NOTES

1. The patient may quickly become conscious and combative.

NARCOTIC ANALGESICS

Fentanyl (Sublimaze®)

SCOPE OF PRACTICE

[1]EMT-Intermediate and EMT-Paramedic

[1] Without online medical control in select circumstances, refer to Pain Management Guidelines.

CLASS OF DRUG

Synthetic opioid, Opiate analgesic

PHARMACOLOGIC ACTION

Narcotic agonist-analgesic of opiate receptors; inhibits ascending pain pathways, thus altering response to pain; increases pain threshold; produces analgesia, respiratory depression, and sedation

INDICATIONS

1. Analgesia for patients with moderate to severe pain

CONTRAINDICATIONS

1. Hypersensitivity/known intolerance
2. Patients particularly sensitive to respiratory depression
3. Myasthenia gravis
4. Pregnancy

WARNING: Should be used with caution in the elderly and in patients with hypotension, suspected gastrointestinal obstruction, head injury, and concomitant CNS depressants

DRUG INTERACTION

1. Benzodiazepines Diazepam - increased risk of CV depression
2. Sedatives/Hypnotics, other opioids, CNS depressants and alcohol - increased risk of hypotension.
3. Avoid use in patients who have received MAO inhibitors within the previous 14 days - may produce unpredictable, potentially fatal reactions.

ADMINISTRATION

1. Adult: [25-100 mcg] slow IV/IO every 5 minutes to effect. (Maximum single dose of 100mcg and maximum total dose of 300mcg without approval from medical control). Do not give if systolic BP is less than 100.
2. Pediatric: (2-12 yrs. of age) [0.5 - 1 mcg/kg] IV/IO to a maximum of 2.0 mcg/kg slow IV push over 2 minutes.

SPECIAL NOTES

1. Use cautiously in geriatric or debilitated patient (use lower doses), diabetics, patients with pulmonary or hepatic disease, head trauma, increased ICP, undiagnosed abdominal pain and cardiac disease.
2. Abdominal distension, muscle rigidity, and/or urinary retention may be seen at high doses.

NARCOTIC ANALGESICS (cont.)

Morphine Sulfate

MS Contin®, Avinza®, Depodur®, Duramorph®, Infumorph®, Astramorph®, Kadian®, MSO4

SCOPE OF PRACTICE

[1]EMT-Intermediate and EMT-Paramedic

[1] Without online medical control in select circumstances, refer to Pain Management Guidelines.

CLASS OF DRUG

Opiate analgesic

PHARMACOLOGIC ACTION

Narcotic agonist-analgesic of opiate receptors; inhibits ascending pain pathways, thus altering response to pain; produces analgesia, respiratory depression, and sedation; suppresses cough by acting centrally in medulla

INDICATIONS

1. Analgesia for patients with moderate to severe pain
2. Treatment of acute pulmonary edema (Paramedic only)
3. Sedation for procedures (Paramedic only)

CONTRAINDICATIONS

1. Hypersensitivity
2. Hypotension
3. Respiratory depression, acute or severe bronchial asthma, upper airway obstruction
4. In the presence of major blood loss, the body's compensatory mechanisms may be suppressed by the use of morphine, and the hypotensive effect will become very prominent. Do not use it in these circumstances.
5. Heart failure due to chronic lung disease
6. Delirium tremens, seizure disorders
7. During labor when premature birth anticipated

DRUG INTERACTION

1. Additive effects with other CNS depressants
2. MAO inhibitors can cause unpredictable and severe reactions, reduce dose to 25% of a usual dose.

ADMINISTRATION

1. Adult: [4-10 mg] slow IV/IO titrating 2-4 mg every 10 minutes to effect. (Max of 10 mg without approval from medical control) Do not administer if the systolic BP is less than 100.
2. Pediatric: (2-12 yrs of age) [0.05 - 0.1 mg/kg] slow IV/IO titrated to effect

SPECIAL NOTES

1. Take vital signs before and 2 minutes after administration.
2. IV/IO only (unless you cannot start an IV/IO and/or are directly ordered to administer IM)
3. Often causes vomiting; administer slowly.

NITROGLYCERIN

Nitrostat®, Nitrolingual Pumpspray®, NitroQuick®

SCOPE OF PRACTICE

[1]EMT-Basic, [2]EMT-Intermediate and EMT-Paramedic

[1]Patients own medication with on line medical control only.

[2] Must have intravenous access established prior to administration or approval of online medical control if IV/IO access is unavailable.

CLASS OF DRUG

Nitrates, anti-anginal agent/vascular dilating agent

PHARMACOLOGIC ACTION

Organic nitrate which causes systemic venodilation, decreasing preload. Cellular mechanism: nitrate enters vascular smooth muscle and converted to nitric oxide (NO) leading to activation of cyclic guanosine monophosphate (cGMP) and vasodilation. Relaxes smooth muscle via dose-dependent dilation of arterial and venous beds to reduce both preload and afterload, and myocardial O2 demand. Also improves coronary collateral circulation. Lower BP, increases heart rate, occasional paradoxical bradycardia.

INDICATIONS

1. Chest pain, anginal pain
2. Congestive heart failure with severe pulmonary edema

CONTRAINDICATIONS

1. Hypersensitivity
2. Hypotension (SBP < 100 mm Hg or ≥30 mm Hg below baseline)
3. Increased intra-cranial pressure
4. Severe anemia
5. Extreme bradycardia (< 50 bpm)
6. Tachycardia in the absence of heart failure (> 120 bpm)
7. Confirmed right ventricular infarction

DRUG INTERACTION

1. Additive hypotension with beta-adrenergic blockers, antihypertensives, calcium channel blockers, and phenothiazines.
2. Tricyclic antidepressants and antihistamines may interfere with buccal absorption.
3. Can cause a lethal drop in blood pressure in patients taking Sildenafil citrate (Viagra) within 24 hours of ingestion, tadalafil (Cialis®) within last 48 hours, vardenafil (Levitra®) within last 48 hours, or other phopsphodiesterase-5 inhibitors.

ADMINISTRATION

1. Adult:
   i. Sublingual: [0.3 - 0.4 mg] tablet. Repeat at 3 - 5 minutes as needed to a total of three tabs (or more by MCEP order). **(Continued next page)**

NITROGLYCERIN (cont.)

ii. Lingual Spray: [0.4 mg] metered dose, sprayed directly under the tongue; additional one or two sprays every 3 - 5 minutes for a total of three sprays (or more by MCEP order).

iii. Infusion: [5 - 20 mcg/min] the infusion may be increased by 5 mcg/min every 3 - 5 minutes to 50 - 200 mcg/min. The infusion dose is leveled off when desired effect is reached or a decrease in blood pressure of more than 10 mm Hg over baseline or less than 90 mm Hg systolic is observed. **(Infusions may be initiated or monitored by Paramedics Only)**

Note: The most common method for mixing Nitroglycerin is 50 mg nitroglycerin in 250 ml of normal saline. This yields a concentration of 200 mcg/ml (0.2 mg/ml) in glass or non-absorbable container and non-PVC tubing.

2. Pediatric: Not recommended for pre-hospital use.

SPECIAL NOTES

1. Common side effects may include: throbbing headache, flushing, dizziness, and burning under the tongue (if these side effects are noted, the pills may be assumed potent, not outdated).
2. Less common effect: marked hypotension, particularly orthostatic.
3. Paramedics should use their supply of nitroglycerin, not the patient's.
4. Use with caution with patient not previously receiving nitroglycerin.
5. Generalized vasodilation may cause profound hypotension and reflex tachycardia.
6. NTG tablets loose potency easily, should be stored in a dark glass container with a tight lid, and not exposed to heat. NTG spray does not have this problem.
7. Use only with Medical Control on patients with systolic BP below 100 mm Hg.

NONSTEROIDAL ANTI-INFLAMMATORY (NSAIDS)

Ketorlac (Toradol®)

SCOPE OF PRACTICE

EMT- Intermediate, EMT-Paramedic

CLASS OF DRUG

Non steroidal anti-infammatory

PHARMACOLOGIC ACTION

Ketorlac works by reducing hormones that cause inflammation and pain in the body. It is not a narcotic and is not habit-forming. It is 30 times the strength of asprin. It will not cause physical or mental dependence, as narcotics can. However, ketorolac is sometimes used together with a narcotic to provide better pain relief than either medicine used alone.

INDICATIONS

1. For the acute management of moderately severe pain for children > 1 year and adults.

CONTRAINDICATIONS

1. Allergy to aspirin, ketorolac, or other NSAIDS
2. Asthma (relative)
3. Women who are in active labor or are breastfeeding
4. Significant renal impairment particularly when associated with volume depletion
5. Previous or current GI bleeding, intracranial bleeding, coagulation defects, patients with a high risk of bleeding

DRUG INTERACTION

1. Coumadin
2. Plavix
3. ASA
4. Other NSAIDs or anticoagulants

ADMINISTRATION

1. Adult: [10-30mg] IV [30-60mg] IM
2. Pediatric: > 1yr. [0.5 mg/kg] IM/IV

SPECIAL NOTES:

1. This medication is best reserved for patients with a history concerning for kidney stones and should not be used in anyone who has suspected bleeding (for example – trauma, abdominal aortic aneurysm rupture, gastrointestinal bleeding). This medication should not be used in patients with known or suspected kidney dysfunction.
2. Consult MCEP if patient has a history of any liver disease, kidney disease, blood disorders, ulcers, heart disease, alcohol use, high blood pressure, eye disease, asthma, nasal polyps, any allergies - especially aspirin/NSAID allergy (e.g., ibuprofen, celecoxib).

NONSTEROIDAL ANTI-INFLAMMATORY (NSAIDS) (Cont.)

Ibuprofen (Advil®, Motrin®)

SCOPE OF PRACTICE

[1]EMT-Basic, [2]EMT-Intermediate and EMT-Paramedic

[1] ibuprofen PO in pediatric or adults to treat fever or pain

[2]ibuprofen PO to pediatrics and adults for pain or fever; IV or IM

CLASS OF DRUG

Non-steroidal anti-inflammatory drug (NSAID)

PHARMACOLOGIC ACTION

Inhibits synthesis of prostaglandins in body tissues

INDICATIONS

For the acute management of pain or as an antipyretic for children>6months and adults.

CONTRAINDICATIONS

1. Allergy to aspirin, ketorolac, or other NSAIDS
2. Perioperative pain in setting of coronary artery bypass graft (CABG) surgery
3. Preterm infants with untreated proven or suspected infection
4. Bleeding with active intracranial hemorrhage or GI bleed
5. Thrombocytopenia
6. Coagulation defects
7. Proven or necrotizing enterocolitis
8. Significant renal impairment

DRUG INTERACTION

1. Coumadin
3. Plavix
4. ASA
5. Other NSAIDs or anticoagulants

ADMINISTRATION

1. Adult: [10mg/kg] up to 800mg PO ~~[400-800mg] IV over 30 minutes~~
2. Pediatrics: [10mg/kg] PO, not to exceed 800 mg. Dosing must be six (6) hours apart.

[10mg/kg] IV over 30 minutes

SPECIAL NOTES:

1. Febrile seizures occur in normal children between 6months and 6 years. Such seizures are usually short, lasting less than 5 minutes, generalized, and usually do not require anti-seizure drug therapy.
2. Oncology patients should not receive Ibuprofen or other NSAIDS due to the risk of increased bleeding associated with these medications.
3. Fever may be the result of a toxic ingestion such as Benadryl and other anticholinergics. Risk of toxic ingestion should be considered in all febrile pediatric patients.
4. Ibuprofen should not be utilized to facilitate treat and release situations. Administration

should only be performed if transport is initiated.

OVER THE COUNTER MEDICATIONS (OTC)

SCOPE OF PRACTICE

First Responder, EMT-Basic, EMT-Intermediate, & EMT-Paramedic

CLASS OF DRUG

Drugs not classified as controlled or dangerous substances

PHARMACOLOGIC ACTION

Drug and dose dependent

INDICATIONS

Dependent on patient needs and condition

CONTRAINDICATIONS

Dependent on patient needs and condition

DRUG INTERACTION

Drug and dose dependent

ADMINISTRATION

Dependent on patient needs and condition and physician orders

SPECIAL NOTES

1. A physician medical director may approve a list of over the counter (OTC) medications and products (i.e. NSAID's, antihistamines, anti-diarrheal**,** laxatives, antacids, vitamin supplements, hygiene products and other products) for distribution by an EMS caregiver working under medical direction to a requesting individual during scheduled stand-by situations.
2. Examples include:
    3. Long term wildfire responses
    4. Public events (concerts, rodeos, etc), various industry situations such as movie production
    5. Ski Patrol
    6. Long term construction & manufacturing projects
    7. Long term search and rescue or tactical operations
    8. Other situations where scheduled stand-by EMS is provided.
3. The OTC medication/product must be properly labeled in individual dose packaging when distributed to the patient. Distribution from a bulk or multi-dose container is not permitted by this scope of practice as well as other state and federal laws and regulations; medications will be distributed per manufacturer recommendations and labeling directions.
4. The agency/EMS caregiver will maintain a written guideline that contains the list of physician approved OTC medications/products and the conditions for which they may be distributed. Specific dosing information and indications for pediatric patients must be included.
5. The EMS agency/EMS caregiver must develop a method of documentation for the appropriate distribution of the OTC medications/products. This documentation shall include the OTC medication documentation and appropriate patient care report, per 7.27.10.12 (Records and Data Collection, NMAC) and 7.27.11.11 (NMAC). PRC certified ambulance agencies shall complete patient care documentation per 18.3.14.24 (NMAC).

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OVER THE COUNTER MEDICATIONS (OTC) (Cont.)

6. OTC medications/products are distributed for the patient's self-administration and use.
7. EMS caregivers will not administer OTC medications/products, unless approved elsewhere in the scope of practice for specific EMS patient care situations.

OXYGEN

SCOPE OF PRACTICE

First Responder, EMT-Basic, EMT-Intermediate and EMT-Paramedic

CLASS OF DRUG

Class III Gas, Oxidizer

PHARMACOLOGIC ACTION

Appropriate levels of oxygen are vital to support cell respiration. Oxygen plays an important role in the energy metabolism of living organisms.

INDICATIONS

1. Suspected hypoxia or respiratory distress from any cause
2. Acute chest pain in which myocardial infarction is suspected
3. Shock (decreased oxygenation of tissue) from any cause
4. Trauma
5. Carbon monoxide poisoning

CONTRAINDICATIONS

1. None

DRUG INTERACTION

1. None

ADMINISTRATION

1. Adult & Pediatric:

Dosage	Indications
Low Flow (NC 1 -2 L/Min	Patients with chronic lung disease with unusual dyspnea or other problems
Moderate Flow (NC 4 6 L/Min)	Precautionary use for trauma, chest pain, etc.
High Flow (NRB 10 – 15 L/Min)	Severe respiratory distress, either medical or traumatic, shock, or at providers discretion.

SPECIAL NOTES

1. If the patient is not breathing adequately on their own, the treatment of choice is assisted ventilation, not just supplemental 02.
2. A very small percentage of patients with chronic lung disease lack sensitivity to carbon dioxide levels and breathe only because of their hypoxic drive. Administration of 02 MAY depress their respiratory drive. DO NOT WITHHOLD OXYGEN IN CRITICALLY ILL PATIENTS BECAUSE OF THIS POSSIBILITY. BE PREPARED TO ASSIST VENTILATION, IF NEEDED.
3. Oxygen toxicity (overdose) is not a hazard from acute administration.
4. Nasal prongs work equally well on nose and mouth breathers.
5. Giving 100 % oxygen to all patients is unnecessary. If the patient has 96% O2 saturation and is in no acute distress, a NRB is not necessary.

OXYTOCIN (PITOCIN®)

SCOPE OF PRACTICE

EMT-Paramedic

CLASS OF DRUG

Pituitary hormone - uterine vasoconstrictor

PHARMACOLOGIC ACTION

Oxytocin stimulates the upper segment of the myometrium to contract rhythmically, which constricts spiral arteries and decreases blood flow through the uterus.

INDICATIONS

1. Control of post-partum hemorrhage, when other methods fail

CONTRAINDICATIONS

1. Potential of a remaining fetus

DRUG INTERACTION

1. Hypertension with vasopressors

ADMINISTRATION

Note: Injectable oxytocin (PITOCIN®) contains 10 USP units (20 mg) per ml

1. Adult
   i. Intravenous dose: [10 - 20 USP units] in 500 ml volume expander (NS or LR). Flow rate of [10 - 15 drops/min] titrated to severity of hemorrhage and uterine response.
   ii. Intramuscular dose: [10 USP units] (1 ml) IM only if unable to start IV/IO

SPECIAL NOTES

1. None

PHENYLEPHRINE (NEO-SYNEPHRINE®) NASAL SPRAY

SCOPE OF PRACTICE

EMT-Paramedic

CLASS OF DRUG

Alpha-adrenergic agent

Vasoconstrictor (nasal)

PHARMACOLOGIC ACTION

Phenylephrine is primarily a direct-acting sympathomimetic amine, which stimulates alpha-adrenergic receptors.

INDICATIONS

Used as an agent to reduce bleeding during nasal intubation.

CONTRAINDICATIONS

1. Known hypersensitivity
2. Severe hypertension
3. Ventricular tachycardia

DRUG INTERACTION

1. May decrease effectiveness of insulin, and oral hypoglycemic agents.
2. Use with beta blockers may result in initial hypertension followed by bradycardia.
3. MAO inhibitors - hypertension

ADMINISTRATION

1. Adults: [2 "squirts"] intranasal, in the selected nostril, prior to insertion of nasal tube.

SPECIAL NOTES

1. Use with extreme caution in geriatric patients, severe arteriosclerosis, bradycardia, partial heart block, pregnancy and lactation.

SODIUM BICARBONATE

SCOPE OF PRACTICE

EMT-Paramedic

CLASS OF DRUG

Alkalinizing agent

PHARMACOLOGIC ACTION

Increases blood and urinary pH by releasing a bicarbonate ion, which in turn neutralizes hydrogen ion concentrations

INDICATIONS

1. To correct metabolic acidosis found during prolonged cardiac arrest, after initial interventions.
2. May be used as an adjunct in other causes of metabolic acidosis
3. Known pre-existing hyperkalemia
4. Overdoses of tricyclic antidepressants or phenobarbital.

CONTRAINDICATIONS

1. Documented hypersensitivity
2. Severe pulmonary edema

DRUG INTERACTION

1. Inactivates most drugs, and must not given in the same IV at same time.
2. Causes calcium preparations to precipitate

ADMINISTRATION

1. Cardiac Arrest
    i. Adult & Pediatric: [1 mEq/kg] IV/IO initially, then [0.5 mEq/kg] no more than 50 mEq every 10 minutes until a pulse is restored or as indicated by ABGs.
2. Other special circumstances, such as tricyclic antidepressant overdose
    i. Adult & Pediatric [1 mEq/kg] IV/IO single dose per physician order

SPECIAL NOTES

1. The routine use of Sodium Bicarbonate is not recommended for patients in cardiac arrest.
2. Each amp of bicarbonate contains 44 or 50 mEq of Na++. In persons with cardiac disease this will increase intra-vascular volume and further stress the heart.
3. Hyperosmolarity of the blood can occur because the NaHCO3 is concentrated. This results in cerebral impairment.
4. These dosages are a very rough guide. Blood gasses should be obtained as soon as possible to direct further therapy.
5. Correct CPR, hyperventilation, defibrillation and drug therapy are more important than bicarbonate.

SPECIAL CIRCUMSTANCES

Situations may arise involving patients with uncommon conditions requiring specific out of hospital administered medications or procedures; family members or the designated caregiver trained and knowledgeable of the special needs of the patient should be recognized as the expert regarding the care of the patient; EMS can offer assistance in airway management appropriate to their level of licensure, and administer the patient's prescribed medications where appropriate only if the medication is in the EMS provider's scope of practice; EMS services are not expected to provide the prescribed medications for these special needs patient.

THIAMINE

SCOPE OF PRACTICE

EMT-Paramedic

CLASS OF DRUG

Vitamin (B1)

PHARMACOLOGIC ACTION

Thiamine combines with adenosine triphosphate (ATP) to form a coenzyme, thiamine pyrophosphate (thiamine diphosphate, cocarboxylase), which is necessary for carbohydrate metabolism.

INDICATIONS

1. Coma of unknown origin, delirium tremens, chronic alcoholism, signs of malnourishment.

CONTRAINDICATIONS

1. None in the emergency setting.

DRUG INTERACTION

1. There are no significant drug interactions with other emergency medications.

ADMINISTRATION

1. Adult: [100 mg] slow IV/IO or IM.
2. Pediatric: [10-25 mg] slow IV/IO or IM.

SPECIAL NOTES

1. Large IV doses may cause respiratory difficulties.

TOPICAL OPHTHALMIC ANESTHETIC

(PROPARACAINE® - OPHTHAINE®, ALACAINE ®)

SCOPE OF PRACTICE

EMT-Paramedic

CLASS OF DRUG

Topical/local ophthalmic anesthetic

PHARMACOLOGIC ACTION

After topical application to the eye, local anesthetics penetrate to sensory nerve endings in the corneal tissue. These medications block both the initiation and conduction of nerve impulses by decreasing the neuronal membrane's permeability to sodium ions. This reversibly stabilizes the membrane and inhibits depolarization, resulting in the failure of a propagated action potential and subsequent conduction blockade.

INDICATIONS

1. Ocular pain relief prior to irrigation of the eyes

CONTRAINDICATIONS

1. Hypersensitivity
2. Known or suspected trauma that may have produced intraocular injury.

DRUG INTERACTION

1. None

ADMINISTRATION

1. [1 - 2 drops] of 0.5% solution in each eye. May repeat one time at 15 minutes

SPECIAL NOTES

1. Assess visual acuity as soon as possible.

TRANEXAMIC ACID (TXA)

SCOPE OF PRACTICE

EMT-Paramedic

CLASS OF DRUG

Plasminogen inhibitor

PHARMACOLOGIC ACTION

Tranexamic acid is an antifibrinolytic that competitively inhibits the activation of plasminogen to plasmin. Tranexamic acid is a competitive inhibitor of plasminogen activation, and at much higher concentrations, a noncompetitive inhibitor of plasmin, i.e., actions similar to aminocaproic acid.

INDICATIONS

1. Traumatic hemorrhage in patients > 15 years of age who are candidates for massive blood intransfusion

CONTRAINDICATIONS

1. Hypersensitivity
2. Subarachnoid hemorrhage
3. Thrombosis or thromboembolism

DRUG INTERACTION

1. None

ADMINISTRATION

1. Follow physician's orders
2. 1st Dose - 1 gm infused over 10 minutes (IV infusion rates faster than this have shown to cause hypotension).
3. 2nd Dose – 1 gm administered over 8 hours

SPECIAL NOTES

1. The bolus of TXA must be administered within the first 3 hours **after the trauma**. Past this 3 hour mark, not only has TXA been shown to be of no value, it has also been shown to cause significant issues post-resuscitation.
2. TXA for trauma has not been approved for administration in patients<18 YOA.
3. At this time, TXA has been approved by the FDA for IV administration only.

VACCINES

COVID

DPT (Diptheria, Tetanus (Acellular), Pertussis),

TT (Tetanus Toxoid), DT (Diptheria, Tetanus)

DTP/DTaP

Hepatitis B Vaccine (RECOMBIVAX HB®, ENGERIX-B®)

Hepatitis A Vaccine (HAVRIX®, VAQTA®)

Measles, Mumps, Rubella (MMR)

Poliovirus Vaccine - live, Orimune (OPV)

Poliomyelitis Vaccine, Inactivated, IPV, Salk

Pneumococcal Vaccine (PNEUMOVAX®)

Varicella (chicken pox) vaccine

SCOPE OF PRACTICE

[1]EMT-Basic, [2]EMT-Intermediate and [2]EMT-Paramedic

[1]Administration of Immunizations, Vaccines, Biologicals,

and TB skin testing is authorized under the following circumstances:

1. In the event of a disaster or emergency, the State EMS Medical Director or Chief

Medical Officer of the Department of Health may temporarily authorize the administration of pharmaceuticals or tests.

[2]Administration of Immunizations, Vaccines, Biologicals, and TB skin testing is authorized under the following circumstances:

1. To the general public as part of a Department of Health initiative or emergency response, utilizing Department of Health protocols. The administration of immunizations is to be under the supervision of a physician, nurse, or other authorized health provider.
2. Administer vaccines to EMS and public safety personnel
3. TB skin tests may be applied and interpreted if the licensed provider has successfully completed required Department of Health training.
4. In the event of a disaster or emergency, the State EMS Medical Director or Chief Medical Officer of the Department of Health may temporarily authorize the administration of pharmaceuticals or tests not listed above

ADMINISTRATION

1. Follow physician's orders

VASOPRESSOR AGENTS

Dopamine Hydrochloride (Dopastat®, Intropin®)

SCOPE OF PRACTICE

EMT-Paramedic

CLASS OF DRUG

Inotropic agent; catecholamine; pressor

PHARMACOLOGIC ACTION

Endogenous catecholamine, acting on both dopaminergic and adrenergic neurons. Low dose stimulates mainly dopaminergic receptors, producing renal and mesenteric vasodilation; higher dose stimulates both beta-1-adrenergic and dopaminergic receptors, producing cardiac stimulation and renal vasodilation; large dose stimulates alpha-adrenergic receptors

INDICATIONS

1. As a pressor agent used in the management of shock
2. May be useful, at low doses, in renal failure
3. Used for refractory bradycardia unresponsive to atropine, and when pacing is unavailable.

CONTRAINDICATIONS

1. Hypersensitivity to dopamine
2. Pheochromocytoma
3. Ventricular Fibrillation
4. Uncorrected tachydysrhythmias

DRUG INTERACTION

1. Hypotension and/or bradycardia with phenytoin
2. Reduced effects with Beta-adrenergic blocker

ADMINISTRATION

1. Adult: IV infusion ONLY – Standard mix 400 mg in 250 ml D5W or NS to produce a concentration of 1600 mcg/ml. Infusion rates [5.0-20.0 mcg/kg/min] titrated to desired effect. (Other concentrations are used, so know what you are using). Use microdrip chamber or an infusion pump.
2. Pediatric: [1.0 mcg/kg per minute] (6 x body weight (kg) equals milligrams to add to D5W to create a total volume of 100ml). Infuse at 1mL/h.

SPECIAL NOTES

1. Higher doses can cause central vasoconstriction limiting renal blood flow.
2. Doses less than 5mcg/kg can lower B/P.

VASOPRESSOR AGENTS (cont.)

Norepinephrine (Levophed®)

SCOPE OF PRACTICE

EMT-Paramedic

CLASS OF DRUG

Alpha/beta adrenergic agonist

PHARMACOLOGIC ACTION

Strong beta-1 and alpha-adrenergic effects and moderate beta-2 effects, which increase cardiac output and heart rate, decrease renal perfusion and peripheral vascular resistance, and cause variable BP effects.

INDICATIONS

1. Pressor agent for the management of shock

CONTRAINDICATIONS:

1. Hypersensitivity
2. Hypotension due to blood volume deficit,
3. Peripheral vascular thrombosis (except for lifesaving procedures)

DRUG INTERACTION

1. Cyclopropane or halothane anesthesia, cardiac glycosides, doxapram and cocaine may increase myocardial irritability.
2. MAO inhibitors, methyldopa, doxapram, and tricyclic antidepressant may produce severe hypertension.
3. Alpha-adrenergic blockers may negate effects.
4. Beta-adrenergic blockers may exaggerate hypertension, and block cardiac simulation.
5. Ergot alkaloids or oxytocin may result in enhanced vasoconstriction.

WARNING: Norepinephrine is a vesicant and can cause severe tissue damage if extravasation occurs. Do not use in the same IV line as alkaline solutions as these may deactivate it.

ADMINISTRATION

1. [4 mcg/min] IV/IO infusion, may increase by 2 mcg/min q 5 mins up to a max dose of 10 mcg/min.

SPECIAL NOTES

1. Use with an infusion pump only.
2. Incompatible with alkaline solutions, aminophylline, barbiturates, phenytoin

MCKINLEY COUNTY EMS SYSTEM GUIDELINES Adopted by
GALLUP MEDSTAR AMBULANCE SERVICE
CITY OF GALLUP FIRE DEPARTMENT
MCKINLEY COUNTY FIRE AND EMS

PROCEDURES

FIRST RESPONDER
EMT- BASIC
EMT- INTERMEDIATE (EMT-I)
EMT-PARAMEDIC

Updated August 10, 2021

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ACUPRESSURE

LEVEL OF AUTHORIZATION

EMT-Basic, EMT-Intermediate & EMT-Paramedic

RATIONALE

Traditional Chinese medicine suggests that acupressure therapy may reduce nausea and vomiting in certain ailments.

DESIRED EFFECT

Temporary relief of nausea

INDICATIONS

1. Mild nausea

CONTRAINDICATIONS

1. None

PROCEDURE

1. Using the middle and index fingers, firmly press down on the groove between the two large tendons on the wrist.

AIRWAY MANAGEMENT

GENERAL GUIDELINES

LEVEL OF AUTHORIZATION

First Responder, EMT-Basic, EMT-Intermediate & EMT-Paramedic

RATIONALE

An adequate patent airway is the ***HIGHEST PRIORITY WITH EVERY PATIENT***. All First Responder and EMTs must be skilled and practiced in all approved airway management techniques at their level, and use careful judgment in the selection of a technique.

DESIRED EFFECT

When properly performed the patient will have a patent airway and be able to receive adequate oxygen by breathing on-their-own or by assisted ventilations.

INDICATIONS

1. All patients

CONTRAINDICATIONS

1. None

PROCEDURES

1. Approved airway management for all levels
   a. Jaw thrust and chin lift
   b. Visual inspection, auscultation, and feeling for air exchange
   c. Oropharyngeal suction
   d. Nasopharyngeal “trumpet”
   e. Oropharyngeal airway
   f. Laryngeal & supraglottic airway devices (LMA, King Airway)
2. Additional adjuncts for EMT-Basic, EMT-Intermediate & EMT-Paramedic only
   a. Multi-lumen airway (i.e. Combitube, PTL)
3. Additional adjuncts for EMT-Paramedic only
   a. Adult endotracheal intubation (Patients 13 years of age or older)
   b. Nasotracheal intubation
   c. Surgical cricothyrotomy
4. Continually assess the patency and adequacy of a patient’s airway.
5. Document the method used to maintain the airway on the EMS report.
6. Traumatic airway management
   a. Manually stabilize the cervical spine prior to airway maneuvers.
   b. Protection of the cervical spine and recognition of possible mid-face trauma are of major concern but do not preclude the use of any airway adjunct when indicated in critical patients.

AIRWAY MANAGEMENT

OROPHARYNGEAL SUCTIONING

LEVEL OF AUTHORIZATION

First Responder, EMT-Basic, EMT-Intermediate & EMT-Paramedic

RATIONALE

The use of suction with appropriate devices clears fluid and debris, thus preventing airway compromise.

DESIRED EFFECT

Properly performed, suctioning should remove all visible secretions and debris without causing trauma to the oral cavity. Suctioning should prevent aspiration of foreign materials into the lungs during inspiration or ventilatory attempts.

INDICATIONS

1. The patient is unable to eliminate accumulated secretions or debris without assistance.

CONTRAINDICATIONS

1. None

PROCEDURE

1. Consider placing patient in the recovery position (on their side) to allow for drainage if spinal precautions are not a consideration.
2. Select a suction catheter (Yankauer, Whistle-tip, rigid, etc.) that will work best in removing the substance accumulated.
3. Use universal precautions (eye protection, mask, gloves, etc.).
4. Insert the suction catheter no deeper than the rescuer can visualize.
5. Apply suction while removing catheter.
6. Continue suctioning until the substance is removed and the airway is clear.
7. Repeat as necessary.
8. Maintain ventilatory support with supplemental oxygen.

SPECIAL CONSIDERATION

1. Suctioning can stimulate the vagus nerve causing bradycardia and hypotension.
2. Lengthy suctioning attempts can lead to hypoxia, which can cause serious cardiac dysrhythmias due to decreases in myocardial oxygen supply.
3. Suction may stimulate coughing which may increase intracranial pressure.
4. Maintaining suction while removing the catheter will prevent suctioned fluids and debris from dropping back into the mouth.
5. Attempting to ventilate the patient before the airway is clear may lead to aspiration.

AIRWAY MANAGEMENT

ENDOTRACHEAL SUCTIONING

LEVEL OF AUTHORIZATION

EMT-Paramedic

RATIONALE

The use of endotracheal suction, with appropriate devices, clears pulmonary secretions and debris, preventing or alleviating airway compromise.

DESIRED EFFECT

Properly performed, endotracheal suctioning should remove pulmonary secretions, resulting in improvement of lung sounds. The clearing of secretions would decrease airway resistance and increase tidal volume delivery during positive pressure ventilation.

INDICATIONS

1. There is a need to remove accumulated pulmonary secretions as evidenced by one or more of the following:
   a. Course lung sounds or "noisy" respirations.
   b. Visible secretions are noted in the endotracheal tube.
   c. Suspected aspiration of gastric or upper airway secretions.
   d. Inability of the patient to produce an effective cough.
2. The need to maintain the patency and integrity of the endotracheal tube.

CONTRAINDICATIONS

1. When indicated, there are no absolute contraindications to endotracheal suctioning. Failure to suction in order to avoid a possible adverse reaction may result in patient death.

PROCEDURE

1. Cleanse hands.
2. Assemble required equipment.
   a. Commercial suction kit or
      i. Sterile catheter
      ii. Sterile gloves
      iii. Sterile basin
      iv. Eye protection
   b. Manual resuscitator
   c. Sterile water
   d. Water soluble lubricant
   e. Vacuum gauge or pump and trap
3. Position the patient
4. Pre-oxygenate the patient, if appropriate, and the airway is clear of material.
5. Instill normal saline if required to loosen mucus.
6. Apply sterile gloves using sterile technique.
7. Insert the appropriate size suction catheter with suction off until resistance is met.

(Continued next page)

AIRWAY MANAGEMENT

ENDOTRACHEAL SUCTIONING (Cont.)

8. Suction the airway while removing the catheter.
   a. Application of vacuum limited to no more than 15 seconds.
   b. Sterile technique must be maintained
9. Oxygenate the patient after suctioning.
10. Repeat as necessary

SPECIAL CONSIDERATION

1. Prolonged suctioning may lead to hypoxia /hypoxemia which can cause serious cardiac dysrhythmias due to decreases in myocardial oxygen supply.
2. Failure to use sterile technique may lead to infection.
3. Suctioning may stimulate the vagus nerve causing bradycardia and hypotension
4. Suctioning may stimulate coughing which may increase intracranial pressure

AIRWAY MANAGEMENT

OROPHARYNGEAL AIRWAY

LEVEL OF AUTHORIZATION

First Responder, EMT-Basic, EMT-Intermediate & EMT-Paramedic

RATIONALE

The oropharyngeal airway (OPA) should be used as an adjunct to maintain an open airway for patients that are unable to protect their airway due to a decreased level of consciousness.

DESIRED EFFECT

When properly placed, this device should conform to the curvature of the palate and hold the base of the tongue away from the posterior oropharynx. Air should pass around and through the device, and adequate ventilations should be observed.

INDICATIONS

1. This device should be used in a patient who is semi-conscious or unconscious with no gag reflex and is unable to protect their airway, and in need of ventilatory assistance.

CONTRAINDICATIONS

1. The device should not be used on patients with an intact gag reflex, because its insertion may stimulate vomiting or laryngospasm. It should be used with caution if oral trauma is present.

PROCEDURE

1. The correctly sized airway should be selected by measuring from the corner of the patient's mouth to the bottom of their ear (angle of the jaw). If you do not have the correct size, DO NOT insert the next biggest or next smallest size.
2. Use universal precautions (eye protection, mask, gloves, etc.).
3. Taking cervical spine precautions, bring the tongue forward.
4. Insert the oral airway into the patient's mouth with the tip pointing upward (toward the palate) or to the side and rotate while inserting.
5. If a tongue depressor is used, it is not necessary to rotate the airway. (This is the recommended procedure for pediatric patients)
6. The device will be correctly inserted if the curvature of the airway conforms to the patient's tongue and the flange will rest just above the teeth.

SPECIAL CONSIDERATION

1. Oral airways do not isolate the trachea from the esophagus. Therefore, vomiting may result in aspiration of stomach contents.
2. Manual maneuvers must still be used to maintain an adequate airway.
3. OPAs may be easily dislodged, and require monitoring to assure and maintain correct placement.
4. If improperly inserted, OPA’s may actually cause obstruction of the airway.
5. If the airway cannot be properly inserted because the teeth are clenched, a nasopharyngeal airway should be considered.

AIRWAY MANAGEMENT

NASOPHARANGEAL AIRWAY

LEVEL OF AUTHORIZATION

First Responder, EMT-Basic, EMT-Intermediate & EMT-Paramedic

RATIONALE

The nasopharyngeal airway (NPA) should be used as an adjunct to maintain an open airway on patients who are unable to protect their airway due to a depressed level of consciousness.

DESIRED EFFECT

When properly placed, this device should relieve soft tissue obstruction in the upper airway, providing an opening for ventilation without stimulating the patient to vomit.

INDICATIONS

1. This device is used to assist in the maintenance of an open airway in a conscious or unconscious patient, with or without a gag reflex, who is unable to protect their airway, and in need of ventilatory assistance.

CONTRAINDICATIONS

1. Suspected basilar skull fractures
2. Active nosebleeds
3. Suspected maxillofacial fractures

PROCEDURE

1. The correctly sized airway should be selected by measuring from the tip of the patient's nose to the bottom of their ear (angle of the jaw) and the diameter should be slightly smaller than the patient's nostril.
2. Use universal precautions (eye protection, mask, gloves, etc.).
3. Check for obstructions or fractures to the nose.
4. Lubricate the device with a water-soluble gel, being careful not to block the tip.
5. With the bevel tip directed toward the nasal septum, insert the airway. If resistance is felt, remove the airway and attempt in the other nostril.
6. Insert until the flange is resting against the nostril opening.

SPECIAL CONSIDERATION

1. NPAs do not isolate the trachea from the esophagus, therefore vomiting may result in aspiration of stomach contents.
2. NPAs may cause severe nosebleeds of forcefully inserted.
3. NPAs may kink or clog, causing obstruction of the airway.
4. A tube too long may pass into the esophagus and result in hypoventilation and gastric distention.
5. NPAs should never be used in the presence of a suspected basilar skull fracture, as the tube can unintentionally enter into the brain.

AIRWAY MANAGEMENT

COMBITUBE®

LEVEL OF AUTHORIZATION

EMT-Basic, EMT-Intermediate and EMT-Paramedic

RATIONALE

The Combitube® multilumen airway (MLA) should be used as an adjunct to maintain an open airway, while isolating the gastrointestinal tract from the respiratory tract in patients that are unable to protect their own airway due to a depressed level of consciousness.

DESIRED EFFECT

When properly placed, this device should prevent aspiration of stomach contents, prevent gastric distention and provide a seal in the oropharynx to allow for adequate ventilations. The tube is intended for esophageal placement, however it will also function if inadvertently inserted into the trachea. It is imperative that the correct ventilation port be used and that adequate lung sounds are present and epigastric sounds are absent.

INDICATIONS

1. The patient is semi-conscious or unconscious with an absent gag reflex who is unable to protect their airway, and in need of ventilatory assistance.
2. Endotracheal intubation cannot be performed
3. Endotracheal intubation has been unsuccessful or unavailable.
4. Direct visualization of the larynx is not possible due to secretions, vomit or profuse bleeding.

CONTRAINDICATIONS

1. Patients with an intact gag reflex
2. Patients under 5 feet tall (adult size)
3. Patients under 4 feet tall (small adult size)
4. Known or suspected (alcoholics) esophageal disease. (Relative contraindication)
5. Patients suspected of ingesting a corrosive substance. (Relative contraindication)

PROCEDURE

1. Pre-oxygenate the patient, if possible, with a ventilatory device using 100% oxygen.
2. Check the patient's mouth for sharp objects, braces, or foreign bodies.
3. Select the correct size device (adult, small adult)
4. Both cuffs of the Combitube® should be checked for leakage. Syringes should be removed after checking.
5. Use universal precautions (eye protection, mask, gloves, etc.).
6. Lubricate the tube, if necessary, with a water-soluble gel, being careful not to block the tip.
7. Assess patient for gag reflex (eyelash test is not always reliable)
8. If C-spine injuries are **NOT** suspected:
   a. The patient’s head should be placed in a neutral or sniffing position with the tongue pulled forward.
   b. Blindly insert Combitube® until the teeth lie between the two black lines.
9. If C-spine injuries **ARE** suspected:
   a. Manually stabilize the patient’s head in a neutral position to minimize C-spine

movement.

b. Blindly insert Combitube® until the teeth lie between the two black lines.

(Continued next page)

AIRWAY MANAGEMENT

COMBITUBE® (cont.)

10. Inflate proximal cuff and distal cuffs per manufacturer's recommendations. (Additional air may be added to proximal cuff and distal cuffs if the seals are inadequate).
11. Ventilate the patient with a BVM through the blue (#1) colored tube.
12. Listen for lung and epigastric sounds and watch for chest rise to verify tube placement. Pulse oximetry, capnography, and/or any end tidal CO2 detector is highly recommended to confirm adequate tube placement and oxygenation.
13. After assessing tube placement, do one of the following:
    a. If you are 100% confident you're ventilating the lungs, continue ventilations.
    b. If you are in doubt and suspect you are not ventilating lungs, then move ventilatory device to the clear (#2) tube and ventilate. Repeat step 12 and if 100% confident you're ventilating lungs, then continue ventilating.
14. Occasionally check pilot balloons to assure cuff remains inflated.
15. Rapidly transport the patient to the nearest medical facility and continuously monitor the patient's vital signs enroute.
16. If removal is necessary due to the patient's inability to tolerate the device or to facilitate endotracheal intubation:
    a. Decompress the stomach (esophageal placement only) with the catheter included with the Combitube® through the white tube.
    b. Deflate the proximal cuff (colored tube) completely.
    c. Turn the patient on their side.
    d. Deflate the distal cuff (white tube) completely.
    e. Suction while removing to prevent aspiration.

SPECIAL CONSIDERATION

1. Sharp dental work or debris may puncture the proximal cuff.
2. The MLA should not be removed prior to endotracheal intubation unless visualization of the cords is not possible.
3. Failure to recognize proper tube placement may result in patient death.
4. If patient is adequately ventilated with a MLA, ET intubation may not be necessary.
5. If epigastric sounds are noted after confirming proper tube placement, add air to the distal cuff.
6. Patient movement may dislodge the tube. Every time the patient is moved, re-verification of tube placement is necessary.
7. If resistance is met, remove tube, reposition patient and reattempt insertion. Never force tube into position.

AIRWAY MANAGEMENT

LARYNGEAL and SUPRAGLOTTIC AIRWAY DEVICES

Due to the improved first-pass success and improved neuro-intact survival in cardiac arrest, the use of I-Gel supraglottic airways are preferred over the King Airway.

KING AIRWAY

LEVEL OF AUTHORIZATION

First Responder, EMT-Basic, EMT-Intermediate & EMT-Paramedic

RATIONALE

Laryngeal and Supraglottic Airway Devices are used as an adjuncts to maintain an open airway in patients who are unable to protect their airway due to a decreased level of consciousness, edema or restrictive airway conditions.

DESIRED EFFECT

When properly placed, this device seals the larynx, leaving the distal opening of the tube just above the glottis, providing a clear, secure airway. The King Airway does not ensure absolute protection against aspiration. Studies have shown that regurgitation is less likely and that aspiration is uncommon.

INDICATIONS

1. The patient is experiencing, or is likely to experience, upper airway compromise.
2. The patient is in respiratory or cardiac arrest.
3. The patient has edema, which may result in complete obstruction.
4. The patient has inadequate rate or depth of respiration.
5. The patient is unconscious and unable to self-protect their own airway.
6. Endotracheal intubation has been unsuccessful or blind insertion is necessary.

CONTRAINDICATIONS (relative)

1. Patients greater than 14 weeks pregnant
2. Patients with multiple or massive injury
3. Massive thoracic injury
4. Massive maxillofacial trauma
5. Patients at risk of aspiration

PROCEDURE

1. Pre-oxygenate the patient, if possible, with 100% oxygen while assembling equipment.
2. Use universal precautions (eye protection, mask, gloves, etc.).
3. Using the information provided, in the package insert, choose the correct KING LTS-D size, based on patient height.
4. Test cuff inflation system by injecting the maximum volume of air into the cuffs. Remove all air from both cuffs prior to insertion.
5. Apply a water-based lubricant to the beveled distal tip and posterior aspect of the tube, taking care to avoid introduction of lubricant in or near the ventilatory openings.
6. Re-oxygenate patient with 100% oxygen for at least 1 minute.
7. Position the head. The ideal head position for insertion of the KING LTS-D is the "sniffing position". However, the angle and shortness of the tube also allows it to be inserted with the

head in a neutral position.

LARYNGEAL and SUPRAGLOTTIC AIRWAY DEVICES

KING AIRWAY (cont.)

8. Hold the KING LTS-D at the connector with dominant hand. With non-dominant hand, hold mouth open and apply chin lift.
9. With the KING LTS-D rotated laterally 45-90º such that the blue orientation line is touching the corner of the mouth, introduce tip into mouth and advance behind base of tongue. Never force the tube into position.
10. As tube tip passes under tongue, rotate tube back to midline (blue orientation line faces chin).
11. Without exerting excessive force, advance KING LTS-D until proximal opening of gastric access lumen is aligned with teeth or gums.
12. With a syringe inflate the KING LTS-D, inflate cuffs with the minimum volume necessary to seal the airway at the peak ventilatory pressure employed (just seal volume).
13. Attach the BVM to the 15 mm connector of the KING LTS-D. While gently bagging the patient to assess ventilation, simultaneously withdraw the airway until ventilation is easy and free flowing (large tidal volume with minimal airway pressure).
14. Depth markings are provided at the proximal end of the KING LTS-D which refer to the distance from the distal ventilatory openings. When properly placed with the distal tip and cuff in the upper esophagus and the ventilator openings aligned with the opening to the larynx, the depth markings give an indication of the distance, in cm, from the vocal cords to the upper teeth.
15. Attach ETCO2 monitoring device to adaptor and follow guidelines for its use.
16. Confirm proper position by auscultation, chest movement and verification of CO2 by capnography.
17. Secure KING LTS-D to patient using tape or an approved commercial device. **DO NOT COVER THE PROXIMAL OPENING OF THE GASTRIC ACCESS LUMEN**. The gastric access lumen allows the insertion of up to a 18 Fr diameter gastric tube into the esophagus and stomach.

AIRWAY MANAGEMENT

LARYNGEAL and SUPRAGLOTTIC AIRWAY DEVICES

LMA®

Due to the improved first-pass success and improved neuro-intact survival in cardiac arrest, the use of I-Gel supraglottic airways are preferred over the King Airway.

LEVEL OF AUTHORIZATION

First Responder, EMT-Basic, EMT-Intermediate & EMT-Paramedic

RATIONALE

Laryngeal Mask Airways (LMA) is used as an adjunct to maintain an open airway in patients who are unable to protect their airway due to a decreased level of consciousness, edema or restrictive airway conditions.

DESIRED EFFECT

When properly placed, this device seals the larynx, leaving the distal opening of the tube just above the glottis, providing a clear, secure airway. The LMA does not ensure absolute protection against aspiration. Studies have shown that regurgitation is less likely and that aspiration is uncommon.

INDICATIONS

1. The patient is experiencing, or is likely to experience, upper airway compromise.
2. The patient is in respiratory or cardiac arrest.
3. The patient has edema, which may result in complete obstruction.
4. The patient has inadequate rate or depth of respiration.
5. The patient is unconscious and unable to self-protect their own airway.
6. Endotracheal intubation has been unsuccessful or blind insertion is necessary.

CONTRAINDICATIONS (relative)

1. Patients greater than 14 weeks pregnant
2. Patients with multiple or massive injury
3. Massive thoracic injury
4. Massive maxillofacial trauma
5. Patients at risk of aspiration

PROCEDURE

1. Pre-oxygenate the patient, if possible, with 100% oxygen while assembling equipment.
2. Use universal precautions (eye protection, mask, gloves, etc.).
3. Select the appropriate size airway:

AIRWAY SIZE	PATIENT	MAXIMUM INFLATION VOLUME
1	Neonates/Infants up to 5kg	4 ml
1.5	Infants 5 to 10 kg	7 ml
2	Infants/Children 10 to 20 kg	10 ml
2.5	Children 20 to 30kg	14ml
3	Children 30kg to 50 kg	20 ml
4	Adults 50-70 kg	30 ml
5	Adults 70-100 kg	40ml
6	Adults > 100 kg	50ml

AIRWAY MANAGEMENT

LARYNGEAL MASK AIRWAY -LMA (cont.)

4. Assemble and inspect all equipment.
   a. Visually inspect the LMA cuff for tears or other abnormalities.
   b. Inspect the tube to ensure that it is free of blockage or loose particles.
   c. Deflate the cuff to ensure that it will maintain a vacuum.
   d. Inflate the cuff to ensure that it does not leak.
   e. Completely deflate cuff prior to insertion
5. Lubricate the LMA just prior to insertion.
   a. Use a water-soluble lubricant.
   b. Lubricate the back of the mask thoroughly, avoiding excessive amounts.

Note: Inhalation of the lubricant following placement may result in coughing or obstruction.

6. If C-spine injuries are NOT suspected:
   a. Extend the patient's head and flex the neck.
   b. Avoid LMA fold over by:
      i. Use an assistant to pull the lower jaw downwards.
      ii. Visualize the posterior oral airway
      iii. Ensure that the LMA is not folding over in the oral cavity as it is inserted.
   c. Suction as needed.
7. Grasp the LMA by the tube, holding it like a pen as near as possible to the mask end.
8. Place the tip of the LMA against the hard palate to flatten it out.
9. Using the index finger, keep pressing upwards as you advance the mask into the pharynx to ensure the tip remains flattened and avoids the tongue.
10. Press the mask into the posterior pharyngeal wall using the index finger.
11. Guide the mask downward into position.
12. Grasp the tube firmly with the other hand and withdraw you index finger from the pharynx.
13. Gently press downward with your other hand to ensure the mask is fully inserted.
14. Inflate the mask with the recommended volume of air avoiding over-inflation.
15. Avoid touching the LMA tube while it is being inflated unless the position is obviously unstable.
16. Connect the LMA to a ventilatory device and ventilate the patient. Listen for lung and epigastric sounds and observe for bilateral chest rise. Pulse oximetry, capnography, and/or any end tidal CO_2 detector is highly recommended to confirm adequate tube placement and oxygenation.
17. Insert a bite-block to prevent occlusion of the tube if the patient bites down.
18. Secure the tube.
19. Check periodically to ensure proper tube placement and cuff inflation.

SPECIAL CONSIDERATION

1. Time is lost when equipment malfunctions. All equipment should be inspected at the beginning of every work shift.
2. Inadvertent delays in oxygenation can result from lengthy intubation efforts or failure to

provide ventilatory support between attempts.

3. Patient movement may dislodge the tube. Every time the patient is moved, re-verification of tube placement is necessary.

AIRWAY MANAGEMENT

INTUBATION – ENDOTRACHEAL (for patients 13 years of age and older)

LEVEL OF AUTHORIZATION

EMT-Paramedic

RATIONALE

Endotracheal intubation should be used as an adjunct to maintain an open airway, while isolating the gastrointestinal tract from the respiratory tract in patients that are unable to protect their own airway due to a decreased level of consciousness, edema or restrictive airway conditions.

DESIRED EFFECT

When properly placed, this device should prevent aspiration of stomach contents, prevent gastric distention and provide a definitive airway for adequate ventilations.

INDICATIONS

1. The Patient is 13 years of age or older.
2. The patient is experiencing, or is likely to experience, upper airway compromise.
3. The patient is in respiratory or cardiac arrest.
4. The patient has edema, which may result in complete obstruction.
5. The patient has inadequate rate or depth of respiration.
6. The patient is unconscious and unable to self-protect their own airway.

CONTRAINDICATIONS

When indicated, there are no absolute contraindications to endotracheal intubation.

PROCEDURE

1. Pre-oxygenate the patient, if possible, with 100% oxygen while assembling equipment.
2. Use universal precautions (eye protection, mask, gloves, etc.).
3. If C-spine injuries are NOT suspected:
   a. Position the patient’s head and neck by placing the head into a "sniffing position". Flexing the neck forward and the head backward can accomplish this.
   b. Insert the laryngoscope blade into the right side of the patient's mouth and with a sweeping action displace the tongue to the left. Manipulate the blade to expose the vocal cords.
   c. Insert the endotracheal tube once vocal cords have been visualized to a depth that allows for good ventilation of both lungs.
   d. Suction as needed.
   e. Apply Sellick maneuver as needed.

   Note: If C-spine injuries are suspected, manually stabilize the patient’s head to minimize C-spine movement.
4. Inflate the cuff and ventilate the patient with a BVM. Listen for lung and epigastric sounds and observe for bilateral chest rise. The tube must be inserted into the trachea, therefore it is imperative that correct placement is verified by visualization of the tube passing through the vocal cords, assessment of adequate lung sounds and absence of epigastric sounds. Pulse oximetry, capnography, and/or any end tidal CO2 detector is highly recommended to confirm adequate tube placement and oxygenation.

(Continued next page)

AIRWAY MANAGEMENT

INTUBATION - ENDOTRACHEAL (cont.)

5. After assessing tube placement, do one of the following:
   a. If you are confident the tube is in the trachea, inflate cuff with 5-10 cc's of air. Ventilate again repeating step 4. If still confident, continue ventilating with 100% oxygen. Secure the tube.
   b. If you are in doubt and suspect esophageal placement, remove tube, oxygenate the patient and consider another attempt at intubation, or insert another airway device.
6. Check periodically to ensure proper tube placement and cuff inflation.

SPECIAL CONSIDERATION

1. Time is lost when equipment malfunctions. All equipment should be inspected at the beginning of every work shift.
2. Endotracheal intubation requires direct visualization of the vocal cords, which requires practice to eliminate improper placement and oral trauma.
3. Significant decrease in oxygenation can result from lengthy intubation efforts or failure to provide ventilatory support between attempts.
4. Patient movement may dislodge the tube. Every time the patient is moved, re-verification of tube placement is necessary.
5. Failure to recognize proper tube placement may result in patient death.

AIRWAY MANAGEMENT

INTUBATION - NASOTRACHEAL (for patients 13 years of age and older)

LEVEL OF AUTHORIZATION

EMT-Paramedic

RATIONALE

Nasotracheal intubation should be used as an adjunct to maintain an open airway, while isolating the gastrointestinal tract from the respiratory tract in patients that are unable to protect their own airway due to a decreased level of consciousness, edema or constrictive airway conditions.

DESIRED EFFECT

When properly placed, this device should prevent aspiration of stomach contents, prevent gastric distention and provide a definitive airway for adequate ventilations.

INDICATIONS

1. The patient is 13 years of age or older.
2. The patient is not apneic or in cardiac arrest, but is experiencing, or is likely to experience, upper airway compromise.
3. The patient has edema, which may result in complete obstruction.
4. The patient's mouth cannot be opened.
5. The patient has oral or maxillofacial.
6. The patient is conscious or unconscious, but unable to protect their airway.

CONTRAINDICATIONS

1. Apnea
2. Nasal fractures
3. Basilar skull fractures
4. Nasal obstruction
5. Deviated nasal septum

PROCEDURE

1. Pre-oxygenate the patient, if possible, with 100% oxygen while assembling equipment.
2. Use universal precautions (eye protection, mask, gloves, etc.).
3. Administer **PHENYLEPHRINE** (IN) [1-2 "squirts"] in the nostril used for insertion.
4. Lubricate the ET tube with a water-soluble solution. (Pre-insertion of a nasopharyngeal airway into the selected nostril may be considered and removed prior to insertion of the ET tube).
5. Place the patient's head and neck into a relaxed position. If spinal injury is possible, use "C" spine precautions.
6. Insert the ET tube into the selected nostril along the floor of the nostril or facing the nasal septum to avoid damage to the turbinates. Have suction ready. Vomiting and bleeding in the posterior pharynx may occur, secondary to trauma from insertion of the tube.
7. As the tube passes into the posterior pharynx, auscultate for respiratory sounds with a stethoscope or other device. With the next inhaled breath, advance the tube into the glottic opening until the distal cuff is just past the vocal cords. At this point, the patient may cough, or strain. Esophageal placement may cause gagging.

(Continued next page)

AIRWAY MANAGEMENT

INTUBATION - NASOTRACHEAL (cont.)

8. Ventilate the patient prior to inflating the cuff, listen for lung and epigastric sounds, and observe for bilateral chest rise. The tube must be inserted into the trachea, therefore it is imperative that correct placement is verified assessment of adequate lung sounds and absence of epigastric sounds. Pulse oximetry, capnography, and/or any end tidal CO2 detector is highly recommended to confirm adequate tube placement and oxygenation.
9. After assessing tube placement, do one of the following:
   a. If you are confident the tube is in the trachea, inflate cuff with 5- 10 cc's of air. Ventilate again repeating step 8. If still confident, continue ventilating with 100% oxygen. Secure the tube.
   b. If you are in doubt and suspect esophageal placement, remove tube, oxygenate the patient and consider another attempt at intubation, or insert another airway device.
10. Check periodically to ensure proper tube placement.

SPECIAL CONSIDERATION

1. Nasotracheal intubation is more time consuming than orotracheal intubation. The patient should be breathing adequately enough to hear air exchange during insertion.
2. It is potentially more traumatic for patients.
3. "Blind" nasotracheal intubation requires that the patient be breathing.
4. Significant decrease in oxygenation can result from lengthy intubation efforts or failure to provide ventilatory support between attempts.
5. Patient movement may dislodge the tube. Every time the patient is moved, re-verification of tube placement is necessary.
6. Failure to recognize proper tube placement may result in patient death.

AIRWAY MANAGEMENT

CRICOTHYROTOMY

LEVEL OF AUTHORIZATION

EMT-Paramedic

RATIONALE

Cricothyroidotomy is a surgical procedure that allows a rapid entrance to the trachea for ventilatory purposes for patients who cannot be intubated, orally or nasally, but are in need of airway management. See Indications.

DESIRED EFFECT

When properly performed, this procedure should prevent aspiration of stomach contents, prevent gastric distention and provide a definitive airway for adequate ventilations.

INDICATIONS

1. Severe facial or nasal injuries that make oral or nasal intubation impossible
2. The patient's airway cannot be adequately managed by any conventional means.
3. Foreign body obstruction of the upper airway that cannot be removed by conventional means
4. Laryngeal edema resulting in occlusion of the upper airway.
5. Crushing injuries to the neck resulting in obstruction.

CONTRAINDICATIONS

1. Inability to identify anatomical landmarks due to disease or trauma.
2. Children under 12 years of age.

PROCEDURE

1. Assemble equipment:
   a. Scalpel and blade
   b. Large curved hemostats or extra scalpel handle
   c. Use Bougie, if available
   d. Small ET tube (up to 6.0 in adults) or tracheotomy tube, if available
   e. Antiseptic solution, 4X4 dressings
   f. Ventilatory device with oxygen source
2. Expose the neck and identify the trachea. Palpate the prominent thyroid notch superior and the cricoid cartilage inferior. In the space between the two lies the cricothyroid membrane.
3. Make a vertical incision and expose the anatomy. When cricothyroid membrane has been exposed, make horizontal incision (approximately ½ inch) through the cricothyroid membrane. Incise as close to the cricoid cartilage as possible until opening is sufficient enough to allow passage of ET tube.
4. Maintain the opening with the scalpel handle, hemostats or gloved finger.
5. If available, insert a bougie through the incision in the membrane towards the feet and feel for the tracheal rings. Then insert the ET tube over the bougie into the trachea and remove the bougie once the ET tube is in the trachea.
6. If no Bougie is available, then insert the ET tube about 1-1/2 inches into the trachea.

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CRICOTHYROTOMY (cont.)

7. Check breath sounds, inflate cuff if present, and ventilate patient with high flow oxygen and ventilatory device. The tube must be inserted into the trachea, therefore it is imperative that correct placement is verified by assessment of adequate lung sounds and absence of epigastric sounds. If lung sounds present, secure tube. Pulse oximetry, capnography, and/or any end tidal CO2 detector is highly recommended to confirm adequate tube placement and oxygenation.
8. Control bleeding and dress wound.

AEROMEDICAL REQUEST

For McKinley County, please refer to "4. Air Ambulance Bypass Guidelines" for specific indications for Air Ambulance Bypass instructions. Those take precedence over the instructions below.

LEVEL OF AUTHORIZATION

First Responder, EMT-Basic, EMT-Intermediate & EMT-Paramedic

RATIONALE

Aeromedical transport is an option that should be considered when a patient's illness or injury requires immediate hospital intervention. It may also be applicable in cases where ground transport may not be feasible or available. Aeromedical response to many areas of the state would exceed the time necessary to transport by ground ambulance to a medical facility. However, under some circumstances this service should be considered such as in multiple casualty incidents, prolonged extrication, poor road conditions, and heavy traffic conditions. In some situations, it may be preferable to begin transport and have the aeromedical service meet the ambulance at a pre-determined location.

DESIRED EFFECT

Aeromedical transport services should be notified early to standby for anticipated use during an EMS response to a potentially life threatening incident. This early notification combined with a rapid request for actual aeromedical response when it is determined that the situation dictates its use, should decrease the time from the onset of injury or illness until definitive patient care can be provided in an appropriate medical facility.

INDICATIONS

1. Multiple casualty incidents involving critical patients.
2. Prolonged extrication of critical patients.
3. Poor road conditions that would make it difficult to respond an ambulance to or from the scene.
4. Heavy traffic conditions that would increase response and transport times considerably.
5. Patients whose condition warrants immediate medical attention available only at a distant medical facility.

CONTRAINDICATIONS

1. None when necessary. However unsafe flying conditions and landing areas must be considered for the safety of the flight crews and aircraft.

PROCEDURE

1. Requests for aeromedical transport may be made by:
   a. Law enforcement
   b. Fire or EMS personnel
   c. Hospital staff
   d. Search and rescue field coordinators
   e. Private citizens with prior approval

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AEROMEDICAL REQUEST (cont.)

2. Cancellation of aeromedical transport services shall only be made by:
   a. Highest level of EMS provider on scene, after assessment of patient
   b. If transport by ground ambulance is appropriate after assessment of patient
   c. Incident Commander after consulting with the highest EMS provider on scene
3. Diverting of aeromedical transport aircraft:
   a. When aeromedical response exceeds ground transport time
   b. When requested only by highest on scene EMS provider after patients have been transported or to be intercepted with when ground and air units are in direct radio contact.
4. Safety concerns should be discussed and addressed prior to arrival of the aircraft:
   a. Landing zone should be blocked off for bystander safety.
   b. Approach the aircraft only when signaled by a member of the flight crew.
   c. Only essential personnel should approach the aircraft.
   d. Do not approach from the rear of the aircraft.
   e. Use extreme caution in windy conditions, may cause overhead blades to dip.
   f. Wear ear and eye protection, and secure hats or head cover.
   g. On sloping landing zone, approach from the downhill slope.
5. Requirements for establishing a landing zone:
   a. 100’ X 100’ fairly flat area.
   b. Area should be clear of overhead obstacles such as wires.
   c. Protection for patient from noise and wind
   d. Remove debris from landing area
6. Never approach the aircraft until signaled to do so by the flight crew.

CAPNOGRAPHY

LEVELS OF AUTHORIZATION

First Responder, EMT-Basic, EMT-Intermediate & EMT-Paramedic

RATIONALE

End-tidal carbon dioxide (ETCO2) is the measurement of carbon dioxide in the airway at the end of each breath. Capnography provides a numeric reading (amount) and graphic display (waveform) of the ETCO2 throughout the respiratory cycle. ETCO2 is very useful in both the intubated and non-intubated patient for determining ventilation adequacy and perfusion. In order for there to be measurable CO2, there must be cardiac output (even compressions), lungs that are being ventilated and perfused, and a way for the CO2 to be excreted (airway).

INDICATIONS

1. All patients with a potential, or actual, change in metabolism, circulatory, and/or respiratory function
2. Hypoventilation states
3. Shock states
4. Bronchospastic disease
5. Chest pain with respiratory distress
6. Congestive Heart Failure
7. All patients with advanced airways or receiving CPR
8. Patients experiencing altered mental status
9. Any patient having received narcotic or benzodiazepine medications

CONTRAINDICATIONS

1. None

NOTES/PRECAUTIONS

1. A patient with normal cardiac and pulmonary function will have an ETCO2 level between 35-45 mmHg. When no CO2 is detected, 3 factors must be quickly evaluated for cause:
   a. Loss of airway function- Improper tube placement, apnea
   b. Loss of circulatory function- Massive PE, cardiac arrest, exsanguination
   c. Equipment malfunction- Tube dislodgement or obstruction
2. All intubated patients will have capnography (when available) applied and a printed copy of the post

PROCEDURE

1. Turn on monitor and adjust contrast as needed
2. Verify ETCO2 display is on and functioning.
3. Open tubing connector door and connect ETCO2 filterline tubing by turning clockwise
   a. Tubing should be connected to monitor before being connected to patient's airway
4. Connect tubing to patient airway
5. Record waveform and ETCO2 level.

CAPNOMETRY

LEVELS OF AUTHORIZATION

First Responder, EMT-Basic, EMT-Intermediate & EMT-Paramedic

RATIONALE

End-tidal carbon dioxide (ETCO2) detectors measure the concentration of exhaled carbon dioxide and are extremely useful in assessing proper placement of an endotracheal tube. An absence of measured carbon dioxide in the patient's exhaled air may indicate tube placement in the esophagus, while the presence of carbon dioxide after six full breaths usually indicates proper tracheal placement. Proper tube placement is confirmed by a color change in the colorimetric device by a reaction of CO2 with the litmus paper inside the detector. As with pulse oximetry, an ETC02 detector is an addition to other methods (direct visualization, bilateral breath sounds, etc.) for confirmation of proper endotracheal tube placement.

INDICATIONS

1. As an adjunct to confirm proper tube placement on all Advanced Airway Devices
2. On intubated patients to detect approximate ranges of end-tidal CO2 when measurement may be clinically significant.

CONTRAINDICATIONS

1. Not used to detect main-stem bronchial intubation
2. Not for use during mouth-to-tube ventilation

NOTES/PRECAUTIONS

1. Due to potential increased airway resistance, do not use Pedi-Cap on patients weighing >15 kg.
2. Reflux of gastric contents, mucous, edema fluid, endotracheal medication administration, or nebulization can discolor detector. Contamination of this type may increase resistance, alter color changes, and affect ventilation. If this occurs, discard the device.

PROCEDURE

1. Select appropriate detector according to patient size and weight. Remove detector from packaging
   a. Patients >15 kg - Easy-Cap
   b. Patients <15 kg - Pedi –Cap
2. Match initial color of indicator to the PURPLE color labeled CHECK around the detector window
   a. If the purple color of the indicator is not the same color, or darker, than the area marked CHECK, do not use the detector
   b. If the indicator color appears pink, the separate color chart for fluorescent light must be used for accurate color matching
3. Deliver six ventilations of moderate tidal volume
   a. Interpreting results before confirming 6 breath cycles can yield false results
4. After six breaths, attach detector to endotracheal tube; then attach BVM to the detector
5. Compare indicator color in the window on full-end expiration. If C02 is detected, the PURPLE CHECK color will change to GOLD (Range C).
6. If the results are not conclusive, and correct anatomic location cannot be confirmed with certainty by other means, the endotracheal tube should be immediately removed and reinserted.

CARDIAC MONITORING

LEVEL OF AUTHORIZATION

First Responder, EMT-Basic, EMT-Intermediate & EMT-Paramedic

RATIONALE

Cardiac monitoring should be used at any time there is a possible cardiac problem such as chest pain, irregular pulse, decreased LOC, abnormal blood pressure, or a history of cardiac problems. It can also be considered as an adjunct for patients with severe trauma, but should not precede emergency procedures.

DESIRED EFFECT

Cardiac monitoring, when performed correctly, should provide a mechanism for monitoring and documenting cardiac activity in the pre-hospital environment. This may be accomplished several ways, including printed EKG rhythm strips, internal recordings, or telemetry.

INDICATIONS

1. Possible cardiac problems with associated chest pain, or signs and symptoms associated with a silent AMI
2. Suspected drug overdose
3. Hypertension/CVA/TIA
4. Head injury
5. Chest trauma
6. Respiratory problems
7. Metabolic problems (dehydration, DKA, acidosis, etc.)
8. Abdominal pain

CONTRAINDICATIONS

1. None when indicated.
2. Caution should be used when placing electrodes on skin damaged from trauma, burns, or chemicals.
3. Cardiac monitoring, if indicated, should not delay emergency treatment or delay transport.

PROCEDURE

1. Make sure the skin is free of debris that will interfere with electrode contact (sweat, body hair, dirt, etc.)
2. Attach electrodes to skin surface and attach leads to the monitor and patient.
3. Turn on monitor; adjust the gain or sensitivity to the proper level.
4. Record and report rate, regularity, origin of electrical activity and note any ectopy.
5. If possible, tracings should be printed before, during, and after delivery of procedures or medication.
6. Tracings should be printed to document a change in rhythm, rate, or any significant irregularity.
7. Label strip with time, patient name.

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CARDIAC MONITORING (cont.)

12-LEAD EKG

1. With the advent of thrombolytic therapy, early diagnosis of acute myocardial infarction has become more important. American Heart Association guidelines recommend a "door-to-drug time" of 30 minutes for thrombolytic administration. A pre-hospital 12-lead could speed diagnosis and shorten time until thrombolysis.
2. A 12-lead EKG is not a treatment and should be considered only if time and personnel are available. Do not attempt to obtain a 12-lead unless all other appropriate assessment and treatment guidelines have been met. For example, a 12-lead is of no value in cardiac arrest unless there is a return of a spontaneous pulse.

PROCEDURE

1. Placement of limb leads:
   a. Follow manufacturers recommendations
   b. Left deltoid
   c. Left side anterior below waistline
   d. Right side anterior below waistline
2. Placement of precordial leads:
   a. V1 fourth intercostal space to right of sternum
   b. V2 fourth intercostal space to left of sternum
   c. V3 between V2 and V4
   d. V4 fifth intercostal space mid-clavicular
   e. V5 between V4 and V6
   f. V6 fifth intercostal space midaxillary

CARDIAC PACING-TRANSCUTANEOUS

LEVEL OF AUTHORIZATION

EMT-Paramedic

RATIONALE

Transcutaneous (external) pacing provides a safe method of increasing the heart rate on patients with symptomatic bradycardias, including high degree AV blocks.

DESIRED EFFECT

During transcutaneous pacing, the heart is stimulated with externally applied cutaneous electrodes that deliver an electrical impulse at a controlled rate. When performed correctly, the external pacemaker should control the patient's heart rate, and mechanical activity until definitive treatment is available. This should cause an increase in both pulse rate and blood pressure, along with increased LOC.

INDICATIONS

1. Hemodynamically significant bradycardias that have not responded pharmacologic therapy.
2. "Overdrive" pacing (limited by the maximum pacing rate of the device) to terminate malignant supraventricular and ventricular tachycardias.
3. Metabolic disturbances causing symptomatic bradycardias.

CONTRAINDICATIONS

1. Severe hypothermia
2. Cardiac arrest
3. Bradycardia in children unless hypoxia or hypoventilation has been ruled out.

PROCEDURE

1. Initiate IV, oxygen, and EKG monitoring
2. Run an initial strip as soon as monitor is attached to the patient. Use multiple leads in viewing cardiac electrical activity.
3. If the patient is conscious, explain the procedure.
4. Obtain vital signs.
5. Apply the transcutaneous pacing electrodes, insuring sufficient contact with patient's skin to allow complete electrical flow.
6. Turn pacer ON and set ***PACING RATE*** at 60 - 70 per minute.
7. Increase ***CURRENT*** until electrical capture is achieved.
8. Electrical capture is verified by noting whether or not a QRS complex follows every pacemaker spike. Use the minimal energy level required to get capture. Check for mechanical capture by palpating for a pulse that corresponds with the cardiac monitor.
9. Monitor the patient's condition, maintaining a close watch on pulse rate and blood pressure.
10. In the hemodynamically stable patient that is conscious and exhibits signs of discomfort, consider analgesia and/or sedation.

SPECIAL CONSIDERATION

1. Re-verify mechanical and electrical capture after any patient movement.

CARDIOVERSION

LEVEL OF AUTHORIZATION

EMT-Paramedic

RATIONALE

Cardioversion (synchronized electrical shock) is used to terminate tachycardias, other than pulseless ventricular tachycardia and ventricular fibrillation, in patients who are hemodynamically unstable or do not respond to pharmacological intervention. Synchronization reduces the chances that a shock will induce VF.

DESIRED EFFECT

Successful cardioversion should immediately terminate the tachycardia and decrease the potential for development of secondary complicating dysrhythmias.

INDICATIONS

1. Patient is hemodynamically unstable and in tachycardia (atrial fibrillation, atrial flutter, atrial tachycardia, ventricular tachycardia with a pulse and supraventricular tachycardias).
2. If medications fail in the stable patient with the before mentioned arrhythmias, synchronized cardioversion will most likely be indicated.

CONTRAINDICATIONS

1. Ventricular tachycardia without a pulse.
2. Contraindicated (relative) when digitalis toxicity is suspected as the cause of the rhythm. When patient is decompensated and you suspect digitalis toxicity, give bolus of Lidocaine 1mg/kg before cardioverting and start at 50 joules.
3. Immediate cardioversion is usually not needed for rates <150. Consider other causes.

PROCEDURE

1. Consider sedation with Midazolam or Diazepam (follow Drug Guidelines).
2. Turn on synchronizer switch. Set the energy level to 50-100 joules mono-phasic and follow manufacturers recommendations for bi-phasic monitors for adults; 1-2 joules/kg for children.
3. Make sure the synch mode is capturing. The gain may have to be adjusted to increase the "size" of the QRS to allow for synchronization.
4. If using paddles, use electrode gel or other conductive material. Apply paddles to chest with firm pressure (approximately 25 pounds).
5. If using defibrillation pads, position pads appropriately.
6. Call clear, and ensure that the patient area is clear.
7. Depress the discharge button and continue to hold until the energy is discharged (there may be a short delay).
8. If rhythm is unchanged, repeat cardioversion at higher energy level.
9. If rhythm changes, follow appropriate guidelines.
10. If the device is unable to synchronize due to irregularity of the rhythm (polymorphic ventricular tachycardia) and no firing occurs, deliver an unsynchronized shock.

CHEST TUBE MONITORING

LEVEL OF AUTHORIZATION

EMT-Paramedic

RATIONALE

Trauma, disease, or surgical interventions can interrupt the closed negative-pressure system of the lungs which may result in total collapse of the lung. A chest tube, along with a closed chest drainage system, is attached to promote drainage of air and fluid which may leak into the pleural cavity. Chest tubes must be closely monitored for patency to prevent pneumothorax or hemothorax and promote lung re-expansion.

DESIRED EFFECT

When monitored properly, air and fluids are removed from the pleural space and normal intra-pleural and intra-pulmonic pressures are maintained.

INDICATIONS

1. Inter-facility transfers requiring monitoring of a pre-established, patent chest tube.

CONTRAINDICATIONS

1. None, when the chest tube is indicated and must be monitored.

PROCEDURE

Monitoring:

1. Monitor the patient's vital signs (Sp02 and ET02 if available) and breath sounds over affected lung area.
2. Assess for increasing respiratory distress and/or chest pain.
3. Observe the following:
   a. Chest tube dressing for leakage.
   b. If necessary, remove dressing and inspect tube at the entrance of the thorax for loose sutures and tube displacement.
   c. Patency of the tube (kinks, dependent loops or clots).
      i. Water level in the water seal should fluctuate with breathing, rising with inspiration and falling with expiration. If patient is on mechanical ventilation, this pattern is reversed because of the positive pressure.
   d. Fluctuations stop when the lung is fully re-expanded, or when tube is kinked. Drainage system, which should be upright and below the level of the tube insertion.
4. Chest tubes should only be clamped (toothless clamps) only under specific circumstances:
   a. To assess for air leaks.
   b. To rapidly empty or change collection bottle or chamber.
   c. To change disposable systems. Have the new system ready to be connected before clamping the tube.
5. Position the patient to permit optimal drainage (do not remove LSB/Immobilization equipment on trauma patients):
   a. Semi-Fowler's position to evacuate air (pneumothorax).
   b. High Fowler's position to drain fluid (hemothorax). (Continued next page)

CHEST TUBE MONITORING (cont.)

6. Assure tube connection between chest and drainage tubes are intact, taped well and secured in multiple locations.
   a. Water-seal vent must be without occlusion.
   b. Suction-control chamber vent must be without occlusion when suction is used.
   c. Suction should be 15-30cm H20 and intermittent.
7. Coil excess tubing on mattress next to patient and secure to gurney, assure there is a dependent loop.
8. Adjust tubing to hang in a straight line from the top of the mattress to the drainage chamber.

Troubleshooting:

Air Leak:

1. In patients receiving mechanical ventilation with PEEP, if continuous bubbling is seen in water-seal bottle/chamber, a possible leak exists between the patient and water seal.
   a. Locate leak.
   b. Tighten loose connection between patient and water seal.
   c. Leak is corrected when constant bubbling is stopped.
2. Bubbling continues, indicating that the air leak has not been corrected.
   a. Cross-clamp chest tube at the dressing site. If bubbling stops, air leak is inside the patient's thorax (lung) or at the chest tube insertion site.
   b. Unclamp tube and notify medical control immediately. Leaving the chest tube clamped may cause a tension pneumothorax.
   c. Reinforce chest dressing.
3. The bubbling continues, indicating that the leak is not in the patient's chest or at the insertion site.
   a. Gradually move clamps down drainage tubing away from the patient and toward the suction-controlled chamber, moving one clamp at a time.
   b. When bubbling stops, leak is in the section of tubing or connection distal to the clamp.
   c. Replace tubing or secure connection and release clamp.
4. Bubbling continues, indicating that the leak is not in the tubing.
   a. Check the drainage system for leak.
   b. Change the drainage system if indicated.

Tension Pneumothorax Develops:

1. If severe respiratory distress or chest pain develops:
   a. Determine that the chest tubes are not clamped, kinked or occluded.
   b. Correct problem if found.
   c. Do not "milk" the chest tube if a clot is found without first clamping the tube proximal of clot.
2. Absence of breath sounds on affected side:
   a. Notify medical control immediately
3. Hyper-resonance on affected side, mediastinal shift to unaffected side, tracheal shift to unaffected side, hypotension or tachycardia is present:
   a. Contact Medical Control and consider chest decompression on the affected side.

CHEST TUBE MONITORING (cont.)

Water Seal (if water bottle system is used)

1. Water-seal bottle is broken.
   a. Insert distal end of water-seal tube into sterile solution so that tip is 2 cm blow surface.
   b. If no sterile solution is available, double clamp chest tube while preparing new bottle.
   c. Replace bottle and release clamps.
2. Water-seal tube is no longer submerged in sterile fluid:
   a. Add sterile solution to water-seal bottle until distal tip is 2 cm under surface.
   b. Set water-seal bottle upright so that tip is submerged.

Note: If unable to determine location of equipment leak or malfunction, clamp tube, disconnect device at proximal connection and replace with Heimlich Valve. Unclamp tube, reassess patient.

Note: Consider placement of Heimlich Valve in series between patient and Pleura-Vac/Atrium type device as a safety mechanism.

Chest Tube Inadvertently Pulled (Partial or Complete):

1. Identify if leak in system exists. (If proximal tube port is not outside pleural cavity, tube is still functional).
2. If a leak exists, gently remove tube completely and rapidly close surgical site with direct pressure and occlusive dressing.
3. Notify Medical Control and consider diversion to closer facility.
4. Be prepared to emergently decompress for tensioning.

COMMUNICATIONS - HOSPITAL

LEVEL OF AUTHORIZATION

First Responder, EMT-Basic, EMT-Intermediate & EMT-Paramedic

RATIONALE

Voice contact should be made with the receiving hospital as soon as possible to allow the hospital time to prepare for the patient(s) (staff, appropriate treatment room, etc.) and at any time when medical information or advice is needed to supplement or clarify written protocols.

DESIRED EFFECT

Patient care should be transferred from pre-hospital providers to hospital providers in an informed and efficient manner. This allows for an excellent continuum of care leading to a more positive outcome. Pre-hospital decision making will be more informed, thus reducing chances for incorrect treatment modalities.

INDICATIONS

1. Communications with the receiving facility should be performed on every call, including calls involving refusal of service. The emergency department should be contacted as soon as possible on all incidents involving multiple patients. On-line medical control should be consulted, if possible, with questions on treatment.

CONTRAINDICATIONS

1. None when used appropriately.

PROCEDURE

1. Communication may be in the form of radio (UHF or VHF), cellular telephone, or conventional telephone.
2. The following information should be included in voice communications:
   a. Name of receiving hospital.
   b. Identify ambulance service and unit number.
   c. Number of patients.
   d. Patients age and sex.
   e. Chief complaint or problem
   f. Physical findings
   g. Vital signs and LOC
   h. Pertinent history, as needed, to clarify problem (i.e. mechanism of injury, nature of illness, PQRSTU, SAMPLE).
   i. Treatment given and patient's response.
   j. Estimated time of arrival.
3. If applicable, advise the emergency department of any pertinent changes in patient's condition during transport.
4. Verbal communication of patient condition and written report should be given to ER nurse or Physician.

SPECIAL CONSIDERATIONS

1. Situations may exist when radio communications should not preclude patient care, either by pre-hospital or emergency department personnel, due to insufficient manpower or difficult terrain.

CPAP - CONTINUOUS POSITIVE AIRWAY PRESSURE

LEVEL OF AUTHORIZATION

First Responder, EMT-Basic, EMT-Intermediate & EMT-Paramedic

RATIONALE

Continuous Positive Airway Pressure Ventilation (CPAP) is an effective way to treat Congestive Heart Failure/Pulmonary edema by providing high flow/low pressure oxygenation. It reduces the work of breathing and increases the functional residual capacity (FRC is the amount of air remaining after exhalation) by distending airways and alveolus to increase gas exchange. It facilitates movement of water from less compliant interstitial spaces to more compliant interstitial spaces increasing oxygenation and improving lung compliance.

INDICATIONS

1. Congestive Heart Failure
2. Pulmonary edema associated with volume overload
3. Submersion / Drowning
4. Chronic Obstructive Pulmonary Disease
5. Acute Respiratory Distress

CONTRAINDICATIONS

1. Respiratory arrest
2. Agonal respirations
3. Hypoventilation
4. Unconsciousness
5. Shock associated with cardiac insufficiency
6. Pneumothorax
7. Facial trauma, burns

NOTES/PRECAUTIONS

1. Possible complications include:
    a. Gastric distention
    b. Reduced cardiac output
    c. Hypoventilation
    d. Pulmonary barotrauma
    e. Fluid retention
    f. If systolic Blood Pressure is less <90mm/Hg contact MCEP

PROCEDURE

1. Connect the generator to 50psi oxygen outlet
2. Attach the Mask
3. Attach the PEEP Valve package with CPAP Circuit
4. Attach the filter to the air entrapment port
5. Once patient is comfortable with mask, securely attach head piece and tighten to desired fit
6. Use CPAP device per manufacturer’s recommendations

DEFIBRILLATION - MANUAL

LEVEL OF AUTHORIZATION

EMT-Paramedic

RATIONALE

The most effective treatment for VF or pulseless ventricular tachycardia (VT) is defibrillation. The effectiveness of defibrillation rapidly diminishes after the patient goes into arrest. The sooner a patient can be defibrillated after arrest, the greater the chance for conversion and subsequent survival with an intact neurological status.

DESIRED EFFECT

Time and cause of arrest are critical factors that affect survival. If performed correctly and quickly, assuming that damage to the myocardium is not too severe, defibrillation depolarizes the cells in the electrical conduction system simultaneously to allow for return of an organized rhythm.

INDICATIONS

1. Patients in cardiopulmonary arrest, with no advanced directives, who are in VF or VT.

CONTRAINDICATIONS

1. Patient is in cardiopulmonary arrest, but is not in ventricular fibrillation or ventricular tachycardia.
2. Patient is in an environment that is unsafe for defibrillation (i.e., lying in water, ungrounded conductive surface, etc.).

PROCEDURE

1. Place the patient and rescuers in a safe environment.
2. Expose the chest and make sure it is free from sweat or objects that will impede electrical current.
3. Apply conductive gel to the defibrillator paddles or appropriate pads to the chest.
4. Turn on the defibrillator and ensure you are monitoring the EKG through the appropriate leads or paddles.
5. Select the energy level as per manufacturer recommendations. Charge the device.
6. If paddles are being used, place them in the proper position and apply firm downward pressure.
7. Make sure the patient and the area is clear by shouting "CLEAR" and looking to the feet then head.
8. Deliver the shock by depressing discharge button
9. After the defibrillation, immediately resume CPR for 5 cycles.
10. Re-evaluate the patient and repeat if indicated.

DEFIBRILLATION – SEMI-AUTOMATIC

LEVEL OF AUTHORIZATION

First Responder, EMT-Basic, EMT-Intermediate & EMT-Paramedic

RATIONALE

The most effective treatment for VF or pulseless ventricular tachycardia (VT) is defibrillation. The effectiveness of defibrillation rapidly diminishes after the patient goes into arrest. The sooner a patient can be defibrillated after arrest, the greater the chance for conversion and subsequent survival with an intact neurological status.

DESIRED EFFECT

Time and cause of arrest are critical factors that affect survival. If performed correctly and quickly, assuming that damage to the myocardium is not too severe, defibrillation depolarizes the cells in the electrical conduction system simultaneously to allow for return of an organized rhythm.

INDICATIONS

1. Patients in cardiopulmonary arrest
2. Patients in cardiopulmonary arrest, with no advanced directives

CONTRAINDICATIONS

1. Patient is in an environment that is unsafe for defibrillation (i.e., lying in water, ungrounded conductive surface, etc.).

PROCEDURE

1. Place the patient and rescuers in a safe environment.
2. Expose the chest and make sure it is free from sweat or objects that will impede electrical current.
3. Turn on the defibrillator.
4. Apply appropriate pads to the chest and attach to the device.
5. Initiate analysis of the rhythm.
6. Make sure the patient and the area is clear by shouting "**CLEAR**" and looking to the feet then head.
7. Deliver the shock by depressing the discharge button
8. After the defibrillation, immediately resume CPR for 5 cycles.
9. Re-evaluate the patient and repeat if indicated.

ENDOTRACHEAL MEDICATION ADMINISTRATION

LEVEL OF AUTHORIZATION

EMT-Intermediate, EMT-Paramedic

RATIONALE

Endotracheal (ET) administration of certain medications provides a rapid alternative when an IV/IO cannot be established and medications must be administered immediately. Absorption may be almost as fast as the IV route for some medications.

DESIRED EFFECT

When performed properly, medication is absorbed into the pulmonary capillaries of the lungs.

INDICATIONS

1. Intubated patient in cardiac or respiratory arrest without immediate IV access.
2. Intubated patient, with a need for immediate ET applicable medications.

CONTRAINDICATIONS

1. Drugs that are not lipid-soluble.

PROCEDURE

1. Drugs that may be administered via the ET route are Naloxone, Atropine, Vasopressin Epinephrine, and Lidocaine.
2. Ensure adequate ventilation of the patient's lungs through the endotracheal tube.
3. Pre-oxygenate the patient while the medication is being prepared.
4. Remove the ventilation device and administer 2-2.5 times the normal dosage of medication ordered (diluted in normal saline with 10ml total fluid per dose) down the ET tube using a catheter.
    a. Epinephrine should be administered using 2 -2.5mg of 1:1000 diluted in normal saline. (Children 0.1 mg/kg, 1:1000)
5. Resume positive pressure ventilations, administering several large volume ventilations to ensure that the medication gets into the pulmonary tree.

Note: IV/IO is always the preferred medication route.

GASTRIC TUBES

LEVEL OF AUTHORIZATION

[1]EMT-Basic, [1]EMT-Intermediate & EMT-Paramedic

[1] For monitoring in transport patients only

RATIONALE

Gastric tubes are used when the patient's stomach is severely distended or evacuation of gastric contents is necessary. The procedure should be attempted on conscious patients with an intact gag reflex or unconscious patients whose airway is protected.

DESIRED EFFECT

When properly placed, the tube should allow for the evacuation of stomach contents without compromising the patient's airway.

INDICATIONS

1. Evacuation of stomach contents, including air.
2. Administration of medication (activated charcoal).
3. Diaphragmatic hernia
4. Other per MCEP

CONTRAINDICATIONS

1. Patients with severe facial trauma.
2. Epiglottitis or croup

PROCEDURE

1. Assemble equipment:
   a. Gastric Tube
   b. 50 ml irrigation syringe
   c. Water soluble jelly.
   d. Gloves
   e. Cup of water and straw, if possible
   f. Adhesive tape
   g. Saline for irrigation
   h. Emesis basin
2. Use Universal Precautions
3. If possible, have the patient sit upright with support.
4. Inspect the nose for deformity or obstruction and determine the best (biggest) nostril for insertion.
5. Measure the tube, from ear lobe to the tip of the nose to the "epigastrium mark" and mark the correct length on the tube.
6. Lubricate the tube with water-soluble gel (6-8 inches).
7. Insert the tube in the selected nostril gently towards the posterior nasopharynx while directing the tube towards the patient's ear.
8. When the tube has reached the nasopharynx, gently rotate 180 degrees.
9. Insert into the oropharynx and instruct the patient to swallow. **DO NOT FORCE**.

GASTRIC TUBES (cont.)

10. Continue insertion until the tube reaches the pre-measured point and aspirate stomach contents with a syringe.
11. Inject 30 cc of air and listen over the epigastric area for sounds.
12. If placement is correct, secure the tube properly (downward) and attach to low level suction.
13. Document the procedure.

Note: The most lethal complication (while rare) of a Gastric tube is airway obstruction. Another possible complication is tracheal placement.

HEMOSTATIC GAUZE

LEVEL OF AUTHORIZATION

First Responder, EMT-Basic, EMT-Intermediate and EMT-Paramedic

RATIONALE

Hemostatic gauze can be used to control exsanguinating hemorrhage when use of direct pressure and tourniquets fail.

DESIRED EFFECT

Stop bleeding by accelerated promotion of clotting

INDICATIONS

Exsanguinating hemorrhage that cannot be controlled by direct pressure or by tourniquet. This is most likely to involve wounds of axilla, groin, neck, face, or scalp.

CONTRAINDICATIONS

1. Minor bleeding.
2. Bleeding that can be controlled by direct pressure.
3. Bleeding that can be controlled by application of a tourniquet.
4. Open abdominal or chest wounds.

PROCEDURE

1. Each service must be trained to use the hemostatic gauze selected by their medical director.
2. Follow the manufacturer’s user instructions for proper technique.
3. Pack the wound with the chosen hemostatic gauze.
4. Apply direct pressure over the wound for a minimum of 3 minutes or until bleeding stops.
5. Apply pressure dressing over wound and hemostatic gauze.
6. Advise receiving hospital personnel of use of hemostatic gauze.

INJECTIONS

SQ & IM

LEVEL OF AUTHORIZATION

[1]First Responder, EMT-Basic, EMT-Intermediate & EMT-Paramedic

[1]IM with an auto-injection device only at the First Responder level.

RATIONALE

When medication administration is necessary and the medication must be given via the SQ or IM route, or as an alternative route for selected medications when IV/IO access is not obtainable.

DESIRED EFFECT

When performed properly, subcutaneous and intramuscular medications are absorbed slowly into the blood stream resulting in a delayed onset of action and prolonged effect.

INDICATIONS

1. Emergency administration of appropriate drugs when IV access is not or cannot be readily established, or in situations where SQ and IM are the required route of administration.

CONTRAINDICATIONS

1. No absolute contraindications.

PROCEDURE

1. Confirm medication order and route of administration.
2. Verify drug and concentration.
3. Using universal pre-cautions draw up correct dose and make sure all air is expelled from the syringe.
4. Explain the procedure and desired effects to the patient. Reconfirm patient allergies.
5. The most common site for subcutaneous injection is the arm. Injection volume should not exceed 1 cc.
6. The most common sites for intramuscular injection are the deltoid and thigh. Injection volume should not exceed 2 cc in the deltoid and 3 cc in the thigh.
7. The injection volume should not exceed 1 cc in pediatric patients.
8. Expose the selected area and cleanse the injection site with alcohol.
9. Reconfirm drug and drug dose.
10. Insert the needle into the skin with a smooth, steady motion as follows:
    a. SQ: 45 degree angle
    b. IM: 90-degree angle skin pinched up skin flattened
11. Aspirate for blood. If blood is noted, remove the needle and prepare a new syringe.
12. If no blood is noted, inject the medication.
13. Withdraw the needle quickly and dispose of all equipment properly into a sharps container. Do not recap the needle.
14. Apply pressure to the site until bleeding is stopped. Cover wound with a bandage.
15. Monitor the patient for the desired therapeutic effects as well as any possible side effects.
16. Document the medication, dose, route, time, and patient response.

INJECTIONS

AUTO-INJECTORS

LEVEL OF AUTHORIZATION

First Responder, EMT-Basic, EMT-Intermediate & EMT-Paramedic

RATIONALE

When medication administration is necessary and the medication must be given via the SQ or IM route, or as an alternative route for selected medications when IV access is not obtainable.

DESIRED EFFECT

When performed properly, subcutaneous and intramuscular medications are absorbed slowly into the blood stream resulting in a delayed onset of action and prolonged effect.

INDICATIONS

1. Emergency administration of appropriate drugs when IV/IO access is not or cannot be readily established, or in situations where IM is the required route of administration.

CONTRAINDICATIONS

1. No absolute contraindications.

PROCEDURE

1. Confirm medication order and route of administration.
2. Verify drug and concentration.
3. Explain the procedure and desired effects to the patient. Reconfirm patient allergies.
4. Remove the auto-injector from its package.
5. Grasp the auto-injector with the thumb and first two fingers.
6. DO NOT cover or hold the needle end with your hand, thumb, or fingers-you might accidentally inject yourself. An accidental injection into the hand **WILL NOT** deliver an effective dose of the medication especially if the needle goes through the hand.
7. Pull the injector out of the clip with a smooth motion. The auto-injector is now armed.
8. The injection site for administration is normally in the outer thigh muscle. It is important that the injections be given into a large muscle area. If the individual is thinly-built, then the injections should be administered into the upper outer quadrant of the buttocks.
9. Place the tip of the auto-injector firmly against the injector site. Re-check to make certain that the injector is loaded prior to placing it firmly against the injection site.
10. Push hard until you hear or feel the injector activate. Hold the injector in place until the medication is fully injected (a minimum of ten (10) seconds).
11. Once administered, record the times administered, and try to properly discard the auto-injector in an appropriate sharps container.
12. Massage the injection sites, if time permits.

INTRANASAL DRUG ADMINISTRATION

LEVEL OF AUTHORIZATION

First Responder, EMT-Basic, EMT-Intermediate & EMT-Paramedic

RATIONALE

Intranasal (IN) drug administration provides a safe, rapid, and effective way to administer emergency drugs in both pre-hospital and clinical settings. It offers an easy and convenient method of administration that requires minimal training. It is painless and it decreases the possibility of exposures to blood-borne diseases.

DESIRED EFFECT

When performed properly, intranasal medications are absorbed via the rich vascular plexus of the nose and directly enter the circulation.

INDICATIONS

1. Used as an alternative route for administration of medications when IV access is not or cannot be readily established.

CONTRAINDICATIONS

1. No absolute contraindications.
2. If there is something wrong with the nasal mucosa, it may not absorb medications effectively:
   a. Vasoconstrictors
   b. Bloody nose, nasal congestion, mucous discharge
   c. Destruction of nasal mucosa from surgery, trauma or cocaine abuse.

PROCEDURE

1. Assess ABC's
2. For pulseless patients, initiate CPR
3. For apneic or hyperventilating patients, assist ventilations.
4. Load syringe with appropriate dose of medication and attach the Mucosal Atomizer Device (MAD). Dose may be administered with ½ doses in each nostril, i.e. Naloxone.
5. Place atomizer within the nostril.
6. Briskly compress syringe to administer correct drug dose. Have a towel available to catch any secretions
7. Remove and repeat process in the other nostril, if indicated, until the full therapeutic dose is administered.
8. Continue ventilating patient and secure airway as needed.

INTRAOSSEOUS INFUSION

TIBIAL

LEVEL OF AUTHORIZATION

EMT-Intermediate, EMT-Paramedic

RATIONALE

Intraosseous (IO) infusion allows for a rapid emergency vascular access when peripheral IVs have not been successful, or when the situation deems it appropriate. IO lines may be used for fluid resuscitation and/or delivery of medications. This procedure is for treatment of potentially life threatening conditions.

DESIRED EFFECT

When performed properly, intravenous solutions and medications will pass from the marrow cavities into large venous channels and then into the systemic circulation causing the desired effect.

INDICATIONS

1. Fluid replacement in unresponsive patients when peripheral access in not obtainable.
2. Medication administration for children in cardiac arrest.
3. Unresponsive, critically ill patients, with impaired vascular access due to obesity or edema.
4. Burn or other injury preventing accesses to the venous system at other sites.

CONTRAINDICATIONS

1. Trauma to the extremity
2. Fracture proximal to the IO site
3. Congenital bone disease or bony lesion at the site
4. Osteomyelitis
5. Cellulitis or other indicators of infection at the injection site

PROCEDURE

1. Assemble necessary equipment and check contamination and expiration dates.
2. Identify landmarks and prepare the insertion site with antiseptic solution. Sites for insertion include:
   a. 2 to 3 cm below the tibial tuberosity in the flat surface of anterior tibia.
   b. 2 to 3 cm above the medial malleolus in the flat surface of the anterior tibia.
3. The IO needle is inserted, angling the shaft 15 degrees away from the growth plate, into the flat tibial surface. Placement is detected when a "pop" can be felt and the needle and the needle should be firmly anchored to the bone.
4. Remove the stylet and flush. Saline can be flushed in easily without evidence of swelling around the site, the needle should remain in place.
5. Saline is then infused (5 cc) by syringe to verify placement and to clear the IO needle of any foreign objects.
6. Attach standard IV tubing and infuse medications or fluid quickly to prevent clotting of needle. Fluid may not flow by gravity alone.
7. The needle should be secured with tape or other device. (Continued next page)

INTRAOSSEOUS INFUSION (Cont.)

8. If pain at the site occurs consider administration of Lidocaine:
    a. Adult
        i. 40 mg infused over 2 minutes. Allow to remain in place for 60 seconds. Connect tubing to IO and begin infusion.
        ii. May repeat at ½ initial dose PRN.
    b. Pediatric
        i. 05. Mg/kg not to exceed 40 mg over 2 minutes
        ii. May repeat at ½ initial dose PRN.

Note: All intraosseous needles should be used in accordance with the manufacturer's instructions for placement. IO needles may be placed in sites other than the tibia and humerus at the discretion of local medical direction. However, these locations will not be described here.

INTRAOSSEOUS INFUSION

HUMERAL

LEVEL OF AUTHORIZATION

EMT-Intermediate, EMT-Paramedic

RATIONALE

Intraosseous (IO) infusion allows for a rapid emergency vascular access when peripheral IVs have not been successful, or when the situation deems it appropriate. IO lines may be used for fluid resuscitation and/or delivery of medications. This procedure is for treatment of potentially life threatening conditions.

DESIRED EFFECT

When performed properly, intravenous solutions and medications will pass from the marrow cavities into large venous channels and then into the systemic circulation causing the desired effect

INDICATIONS

1. Fluid replacement in unresponsive patients when peripheral access in not obtainable.
2. Medication administration for children in cardiac arrest.
3. Unresponsive, critically ill patients, with impaired vascular access due to obesity or edema.
4. Burn or other injury preventing accesses to the venous system at other sites.

CONTRAINDICATIONS

1. Trauma to the extremity
2. Fracture proximal to the IO site
3. Congenital bone disease or bony lesion at the site
4. Osteomyelitis
5. Cellulitis or other indicators of infection at the injection site

PROCEDURE

1. Assemble necessary equipment and check contamination and expiration dates.
2. Site of choice for Humeral IO injection is the proximal humeral head.
3. Apply gloves for personal and patient protection.
4. Prepare the insertion site with iodine and then alcohol and allow drying for at least 15 seconds.
5. Locate the insertion site at the most prominent aspect of the greater tubercle. Slide thumb up the anterior shaft of the humerus until you feel the greater tubercle. This is the surgical neck. Approximately 1 cm above the surgical neck is the insertion site.
6. Follow directions regarding specific introducing devices.
7. Once the device has been inserted, verify placement by attaching a syringe and aspirating a small amount of bone marrow. If no aspiration of bone marrow, flush with 10cc NS and attempt to infuse a small amount of fluid.
8. Attach the IV solution tubing and assure that the line is patent.
9. Place a protective dome or similar device over the infusing site or stabilize the catheter in place. (Continued next page)

INTRAOSSEOUS INFUSION (Cont.)

10. Continue to monitor and assess flow and patient response. Assess the site for any signs of infiltration.
11. If pain at the site occurs consider administration of Lidocaine:
    a. Adult
        i. 40 mg infused over 2 minutes. Allow to remain in place for 60 seconds. Connect tubing to IO and begin infusion.
        iii. May repeat at ½ initial dose PRN.
    b. Pediatric
        i. 05. Mg/kg not to exceed 40 mg over 2 minutes
        iii. May repeat at ½ initial dose PRN.

Note: All intraosseous needles should be used in accordance with the manufacturer's instructions for placement. IO needles may be placed in sites other than the tibia and humerus at the discretion of local medical direction. However, these locations will not be described here.

IV THERAPY

EXTREMITIES

LEVEL OF AUTHORIZATION

EMT-Intermediate, EMT-Paramedic

RATIONALE

Intravenous fluid therapy provides a rapid route for replacement of fluid lost through hemorrhage, replacement of electrolytes, and for the introduction of medications directly into the vascular system.

DESIRED EFFECT

When performed correctly, IV access provides a route that allows fluids and drugs to produce a pharmacological effect that is almost immediate.

INDICATIONS

1. Fluid replacement
2. Electrolyte replacement
3. Medication administration

CONTRAINDICATIONS

None when the procedure is indicated.

PROCEDURE

1. If the patient is conscious, explain why the IV is necessary and what the procedure entails.
2. Assemble the necessary equipment, check for contamination and expiration dates.
3. Insert tubing into the IV bag using aseptic technique, squeeze the drip chamber and fill halfway and allow the fluid to run through the tubing to purge all air.
4. Apply a tourniquet above the venipuncture site.
5. Select an appropriate catheter and prepare additional equipment (i.e. sterile dressings, tape, syringes, vacutainers, etc.).
6. Apply gloves for personal and patient protection.
7. Prepare the puncture site using an antiseptic solution to cleanse the site.
8. Stabilize the vein and with the bevel of the catheter facing up, insert the catheter into the vein.
9. Advance the needle and catheter approximately 2mm beyond the point where blood return in the hub of the needle was noted. Slide the catheter over the needle into the vein without moving the needle. Once the catheter is completely in the vein, remove the needle and dispose of it into a "sharps" container.
10. Remove the tourniquet and attach the tubing and flush the line by opening the tubing clamp wide open.
11. Secure the IV site with tape or other device and cover the injection site with a sterile dressing.
12. Set flow at desired rate.
13. Check for signs of infiltration and document the procedure.
14. Document the IV.

IV THERAPY

EXTERNAL JUGULAR

LEVEL OF AUTHORIZATION

EMT-Intermediate, EMT-Paramedic

RATIONALE

External jugular cannulation provides a route for intravenous fluid therapy when other peripheral veins have not provided suitable IV access. It provides a rapid route for replacement of fluid lost through hemorrhage, replacement of electrolytes, and for the introduction of medications directly into the vascular system.

DESIRED EFFECT

When performed correctly, external jugular IV access provides a route that allows fluids and drugs to produce a pharmacological effect that is almost immediate.

INDICATIONS

1. External jugular vein cannulation is indicated in a critically ill patient > 8 years of age who requires intravenous access for fluid or medication administration and in whom an extremity vein was not attainable.
2. External jugular cannulation can be attempted initially in life threatening events where no obvious peripheral site is noted or obtainable.

CONTRAINDICATIONS

1. Infection over the insertion site.
2. Lack of anatomic landmarks due to neck size, shape or deformities.
3. Suspected or proven fracture of the cervical spine.
4. With coagulopathies, other more easily compressible sites should be considered.
5. Unsuccessful contralateral attempt at insertion with resultant hematoma.

PROCEDURE

1. If the patient is conscious, explain why the IV is necessary and what the procedure entails.
2. Assemble the necessary equipment, check for contamination and expiration dates.
3. Insert tubing into the IV bag using aseptic technique, squeeze the drip chamber and fill halfway and allow the fluid to run through the tubing to purge all air.
4. Select an appropriate catheter (16 gauge or larger 1 ½ to 2” is preferable) and prepare additional equipment (i.e. sterile dressings, tape, syringes, vacutainers, etc.).
5. Attach a 5cc syringe to catheter.
6. Apply gloves for personal and patient protection.
7. Place the patient in a supine or Trendelenburg position. This helps to distend the jugular veins and reduces the possibility of an air embolism.
8. Turn the patient’s head toward the opposite side if there is no possibility of cervical spine injury.
9. Prep the selected site as per peripheral IV site.
10. Align the catheter with the vein and aim in a caudal position (toward the clavicle).
11. Lightly place a finger just above the clavicle to produce a “tourniqueting” effect. Puncture the vein midway between the angle of the jaw and the clavicle and cannulate the vein in the usual manner and aspirate for blood return.

(Continued next page)

EXTERNAL JUGULAR (Cont.)

12. Attach an IV line and secure the catheter avoiding circumferential dressing or taping.
13. Assure patency of the line.
14. Document the IV

NEBULIZED DRUG ADMINISTRATION

LEVEL OF AUTHORIZATION

First Responder, EMT-Basic, EMT-Intermediate & EMT-Paramedic

RATIONALE

Small volume nebulizers (SVN), provides a route of administration that carries the drug, in a fine mist, directly to the site of action in the lungs.

DESIRED EFFECT

When performed correctly SVN, using albuterol, should reverse bronchial constriction.

INDICATIONS

1. Wheezing associated with asthma
2. COPD
3. Anaphylaxis (after administration of Epinephrine)

CONTRAINDICATIONS

1. Hypersensitivity to medications

PROCEDURE

1. Assemble equipment and attach the nebulizer to an oxygen source.
2. Add the appropriate amount of drug to the mist chamber.
3. Turn on the oxygen bottle and set the regulator per manufacturer's specifications or until a fine mist is produced.
4. Place the mouthpiece into the patient's mouth and have them periodically inhale and hold the drug in their lungs as long as possible. The patient should be encouraged to cough. Continue administration until the entire drug has been administered.
5. Monitor the patient for effectiveness.
6. The nebulizer can be attached to a BVM to facilitate administration of the drug in conjunction with positive pressure ventilation.

Note: Airborne spread of disease should be a consideration.
Caution should be used with acute cardiac presentation or CHF.

OXYGEN ADMINISTRATION

LEVEL OF AUTHORIZATION

First Responder, EMT-Basic, EMT-Intermediate & EMT-Paramedic

RATIONALE

Administration of supplemental oxygen, using appropriate oxygen delivery devices, provides increased concentrations of oxygen for use by the body tissues. Oxygen should be administered whenever it is clinically indicated.

DESIRED EFFECT

When performed correctly, oxygen administration will elevate arterial oxygen tension, increase oxygen content of arterial blood. This provides the body tissues with improved oxygenation for metabolism, alleviating ischemia, reducing acidosis, and reducing intracranial pressure.

INDICATIONS

1. Suspected hypoxemia or respiratory distress from any cause including, but not limited to:
   a. Acute chest pain
   b. Pulmonary congestion
   c. Respiratory / Cardiopulmonary arrest
   d. Shock
   e. Seizures
   f. Head injuries
   g. CVA /TIA
   h. Acute and chronic disorders

CONTRAINDICATIONS

Oxygen should never be withheld from anyone who needs it. Patients with a hypoxic drive should be monitored closely.

PROCEDURE

1. Administration of oxygen and selection of delivery devices is situation dependent. Decisions should be based on hypoxic status, rate and depth of ventilation and seriousness of injury or illness.
   a. Low Concentration - A nasal cannula is well tolerated by patients that are able to breathe through their noses, and will deliver a concentration of 24 - 44% when adjusted to a flow rate of 1 - 6 L/min. It should be used on patients with adequate tidal volume with minimal or no respiratory distress or oxygenation problems. Flow rates > 6 l/min may dry mucous membranes in the nasal passages and a simple facemask should be considered.
   b. Moderate Concentration - A simple facemask should be considered for patients who are in a low to moderate degree of distress with adequate tidal volume. It will deliver 40-60% oxygen at a flow rate of 8 - 10 L/min. To avoid re-breathing of carbon dioxide, the flow rate should be at least 5 L/min. The mask should be monitored for condensation, indicating hypoventilation, and debris such as vomit and sputum.
   c. High Concentration - The non-rebreather mask should be used on patients with serious respiratory problems, but adequate tidal volume, and can deliver 80-100% oxygen at a flow rate of 10 - 16 L/min. Do not let the bag completely deflate between breaths.

(Continued next page)

OXYGEN ADMINISTRATION (cont.)

d. High Concentration/Assisted - For patients with in inadequate rate or depth of ventilations, positive pressure ventilatory devices should be used. These include BVMs, demand valve resuscitators, and automatic transport ventilators. These devices are capable of delivering 80 - 100% oxygen, under pressure, to assure both adequate minute volume and concentration of oxygen.

e. Use humidified oxygen for asthma patients, COPD patients, wheezing and/or stridor in children, inhalation burns or long transports exceeding 30 minutes. Use warm humidified oxygen on hypothermic patients.

PATIENT ASSESSMENT

SCENE SIZE UP

LEVEL OF AUTHORIZATION

First Responder, EMT-Basic, EMT-Intermediate & EMT-Paramedic

RATIONALE

Every patient encounter includes an evaluation of the scene and its components regarding safety, potential hazards, communication and the need for scene control. In an attempt to avoid repetition of the components of the Scene size up, please refer to the following scene size up procedure. Perform scene size up on all patient encounters.

PROCEDURE

A. Scene Safety consider potential hazards

1. Common scene hazards
   a. Environmental
   b. Hazardous substances
      i. Chemical
      ii. Biological
   c. Violence
      i. Patient
      ii. Bystanders
      iii. Crime scenes
   d. Rescue
      i. Motor-vehicle collisions
      a) extrication hazards
      b) roadway operation dangers
      ii. Special situations
2. Evaluation of the scene
   a. Is the scene safe?
      i. Yes - establish patient contact and proceed with patient assessment
      ii. No - is it possible to quickly make the scene safe?
         a) yes - assess patient
         b) no - do not enter any unsafe scene until minimizing hazards
      iii. Request specialized resources immediately

B. Scene management Manage the scene

1. Impact of the environment on patient care
   a. Medical
      i. Determine nature of illness
      ii. Hazards at medical emergencies
   b. Trauma
      i. Determine mechanism of injury
      ii. Hazards at the trauma scene

(Continued next page)

PATIENT ASSESSMENT - Scene Size Up (cont.)

c. Environmental considerations
   i. Weather or extreme temperatures
   ii. Toxins and gases
   iii. Secondary collapse and falls
   iv. Unstable conditions

2. Addressing hazards
   a. Protect the patient
      i. After making the scene safe for the EMT-Paramedic, the safety of the patient becomes the next priority
      ii. If the EMT-Paramedic cannot alleviate the conditions that represent a health or safety threat to the patient, move the patient to a safer environment
   b. Protect the bystanders
      i. Minimize conditions that represent a hazard for bystanders
      ii. If the EMT-Paramedic cannot minimize the hazards, remove the bystanders from the scene.
   c. Request resources
      i. Request additional resources needed at the scene immediately.
         a) Multiple patients - additional ambulances
         b) Fire hazard - fire department.
         c) Traffic or violence issues - law enforcement
   d. Scan the scene for information related to
      i. Mechanism of injury
      ii. Nature of the illness
3. Violence
   a. EMS providers should not enter a scene or approach a patient if the threat of violence exits.
   b. Park away from the scene and wait for the appropriate law enforcement officials to minimize the danger
4. Need for additional or specialized resources
   a. A variety of specialized protective equipment and gear is available for specialized situations.
      i. Chemical and biological suits can provide protection against hazardous materials and biological threats of varying degrees.
      ii. Specialized rescue equipment may be necessary for difficult or complicated extrications.
      iii. Ascent or descent gear may be necessary for specialized rescue situations.
   b. Only specially trained responders should wear or use the specialized equipment.
5. Standard precautions
   a. Overview
      i. Based on the principle that all blood, body fluids, secretions, excretions (except sweat), non-intact skin, and mucous membranes may contain transmissible infectious agents.

(Continued next page)

PATIENT ASSESSMENT - Scene Size Up (cont.)

ii. Include a group of infection prevention practices that apply to all patients, regardless of suspected or confirmed infection status, in any healthcare delivery setting
iii. Universal precautions were developed for protection of healthcare personnel
iv. Standard precautions focus on protection of patients.

b. Implementation
i. The extent of standard precautions used is determined by the anticipated blood, body fluid, or pathogen exposure.
a) handwashing
b) gloves
c) gowns
d) masks
e) protective eyewear

c. Personal Protective Equipment
i. Personal protective equipment includes clothing or specialized equipment that provides some protection to the wearer from substances that may pose a health or safety risk.
ii. Wear PPE appropriate for the potential hazard
a) steel-toe boots
b) helmets
c) heat-resistant outerwear
d) self-contained breathing apparatus
e) leather gloves

6. Multiple patient situations
a. Number of patients and need for additional support
i. How many patients
ii. Does the dispatch suggest the need for additional support
iii. Protection of the patient
iv. Protection of bystanders
a) remove
b) isolate
c) barricade

b. Need for additional resources
i. Incident Command System (ICS or IMS)
ii. Consider if this level of commitment is required

PATIENT ASSESSMENT

PRIMARY ASSESSMENT

LEVEL OF AUTHORIZATION

First Responder, EMT-Basic, EMT-Intermediate & EMT-Paramedic

RATIONALE

Every Treatment Guideline includes an initial assessment of life threats and appropriate treatment for these conditions. In an attempt to avoid repetition of the components of the primary assessment, please refer to the following Primary assessment Guideline. Perform Primary assessment on all patient encounters.

A. Maintain or establish AIRWAY PATENCY for all patients, by:

PROCEDURE – First Responder, EMT-Basic & EMT-Intermediate

1. Positioning maneuvers as indicated by patient condition
2. Suction (oropharynx, nasopharynx, or stoma)
3. Nasopharyngeal airway
4. Oropharyngeal airway
5. Multi-lumen airway
6. Laryngeal and Supraglottic Airway Devices **(For EMT-Basic & EMT-I only for LMA)**

PROCEDURE –EMT-Paramedic

1. Endotracheal suctioning
2. Laryngoscopic visualization
3. Magill forceps manipulation
4. Nasotracheal intubation (blind or visualized)
5. Oral endotracheal intubation
6. Stomal intubation
7. Surgical cricothyrotomy

B. Maintain or establish ADEQUATE VENTILATION & OXYGENATION for all patients by:

PROCEDURE – First Responder, EMT-Basic & EMT-Intermediate

1. Assess rate and depth of ventilation.
2. Administer oxygen as indicated by patient condition
3. Consider use of pulse oximetry (including room air SpO2), end-tidal C02 detectors (ETC02) and capnometry/capnography to assess effectiveness.
4. Bag Valve Mask (BVM) with supplemental oxygen.
5. Positive Pressure Ventilatory Devices (PPVD) to include Automatic Transportable Ventilators (ATV) and Continuous Positive Airway Pressure (CPAP).
6. Consider capnography or capnometry, if available.

PROCEDURE –EMT-Paramedic

1. Pleural decompression

C. Maintain or establish ADEQUATE CIRCULATION by:

PROCEDURE – First Responder, EMT-Basic

1. Properly position patient

(Continued next page)

PATIENT ASSESSMENT- Primary Assessment (cont.)

1. CPR, if indicated, including use of impedance threshold devices and automated compression devices.
2. Control major hemorrhage using:
   a. Direct pressure
   b. Elevation
   c. Tourniquet
   d. Hemostatic Agents
3. Cardiac monitoring for documentation only, not diagnostic interpretation

PROCEDURE –EMT-Intermediate

1. Peripheral IV/IO access and/or external jugular access
2. Fluid administration

PROCEDURE –EMT-Paramedic

1. Utilizing pre-existing vascular access as primary site
2. Use of Vasopressors

PATIENT ASSESSMENT

HISTORY AND PHYSICAL EXAM (H&P)

LEVEL OF AUTHORIZATION

First Responder, EMT-Basic, EMT-Intermediate & EMT-Paramedic

RATIONALE

After life-threatening conditions have been corrected, an appropriate focused history and physical exam should be performed on all patients. In an attempt to avoid repetition of the components of the Focused History and Physical Exam, please refer to the following Focused History and Physical Exam Guideline. Perform Focused History and Physical exam on all patient encounters.

A. Conduct H&P for all patients, including:

1. Level of consciousness
2. History of chief complaint
3. Pertinent past medical history (SAMPLE, OPQRSTU)
4. Physical exam
5. Skin signs
6. Lung sounds
7. Cardiac monitor, may include 12 lead EKG data collection for documentation
8. Neurological exam, including pupillary reaction, coordination and general movement
9. Vital Signs including:
    a. Ventilatory effort, rate and volume
    b. Pulse rate, strength and regularity
    c. Blood Pressure
    d. If available, oxygen saturation and Capnometry
    e. Temperature, if indicated
    f. Glucometry, if indicated
10. Mental Status exam

PLEURAL (THORACIC) DECOMPRESSION

LEVEL OF AUTHORIZATION

EMT-Paramedic

RATIONALE

A pneumothorax (traumatic or spontaneous) may exacerbate into tension pneumothorax leading to a decreased lung capacity, decreased cardiac output and severe hypoxia.

DESIRED EFFECT

When performed properly, pleural decompression should relieve air pressure in the chest cavity and allow for adequate ventilations.

INDICATIONS

1. Tension pneumothorax

CONTRAINDICATIONS

1. None when indicated

PROCEDURE

1. Universal precautions
2. Prep the area with an antiseptic solution. Two preferred locations are:
   a. The second intercostal space, mid-clavicular just above the 3rd rib.
   b. The fourth intercostal space, mid-axillary just above the 5th rib.
3. Insert a 10 - 14 gauge angiocath, or commercial device, just above the rib until air rushes out.
4. Remove the needle, leaving the catheter in place.
5. Tape and secure to chest.
6. Re-assess lung sounds. A second needle may have to be inserted, or both sides of the chest may require decompression.

Note: If improperly performed, the technique may actually cause a pneumothorax or damage underlying vasculature and organs.

POINT OF CARE TESTING

GLUCOMETRY

LEVEL OF AUTHORIZATION

First Responder, EMT-Basic, EMT-Intermediate & EMT-Paramedic

RATIONALE

Automated glucometry provides an indication of the patient's blood-sugar level, and is used as an adjunct in decision making.

DESIRED EFFECT

When performed properly, the glucometer should provide the user a quantitative blood glucose level in milligrams per deciliter. Normal for adults is 60-120 mg/deciliter.

In the newborn < 45mg / deciliter and in the child < 60 mg/deciliter are considered hypoglycemic.

INDICATIONS

1. Suspected hypo/hyperglycemia.
2. Altered mental status.
3. Unconscious from an unknown cause.

CONTRAINDICATIONS

1. None when indicated

PROCEDURE

1. Clean fingertip and allow thorough drying.
2. Apply personal protection equipment.
3. Pierce the side of the finger pad with lancet.
4. Obtain an adequate drop of blood for the "sample".
5. Apply drop to the test strip and insert into glucometer.
6. Dispose of sharps and biohazard waste in proper containers.
7. Note the reading on the glucometer.

POSITIVE PRESSURE VENTILATION

LEVEL OF AUTHORIZATION

First Responder, EMT-Basic, EMT-Intermediate & EMT-Paramedic

RATIONALE

A significant decrease in the patient's rate or depth of breathing will lead to, hypercarbia, hypoxia, and a lowered pH. Assisted ventilation is indicated when this condition exists. The procedure must provide enough force to overcome resistance of the lungs and chest wall, as well as the respiratory passageways. Adequate ventilation pressures and volumes, combined with an adequate rate, will provide an adequate minute volume.

DESIRED EFFECT

When performed correctly, an adequate tidal volume (6-7 ml/kg with supplemental oxygen or 10 ml/kg on room air) should be provided, under adequate pressure (< 20 cmH20 in non-intubated patients). Inspiratory pressures in intubated patients should be titrated to provide adequate gas exchange. Combined with a proper rate, this should produce an adequate exchange of gasses (O2 and CO2) at the alveolar level.

INDICATIONS

1. Patients that are in respiratory or cardiac arrest.
2. Patients that are breathing, but have inadequate rate or depth of ventilation.
3. Patients that need assistance in controlling ventilatory rate.

CONTRAINDICATIONS

1. None when ventilatory assistance is indicated

PROCEDURE

1. Manually insure that the patient has a patent airway using the head tilt-chin lift maneuver or in case of suspected trauma, the jaw-thrust.
2. Ventilate the patient, assessing for chest rise while ensuring the airway is open. Continue ventilations until airway adjunct has been inserted.
3. Insert appropriate airway adjunct (i.e. oropharyngeal, nasopharyngeal, Combitube®, laryngeal device, endotracheal tube, etc).
4. Ensure that the ventilatory device is connected to a supplemental oxygen source, if available, using an adequate oxygen flow (8-12 lpm with an oxygen concentration > 40%).
5. If the patient is non-intubated, make sure the mask is properly sealed on the patient's mouth and nose. If the patient is intubated, connect the device to the tube, assuring a proper fit.
6. For ventilation of patients with a perfusing rhythm, deliver approximately 10-12 breaths per minute (1 breath every 6-7 seconds). Deliver these breaths over 1 second when using a mask or advanced airway. Need ventilator rates for intubated patient in arrest
7. Auscultate lung sounds and watch for symmetric chest rise.
8. Avoid inspiratory pressures >20 cmH2O in non-intubated patients which can lead to gastric distention or barotrauma. Cricoid pressure should be considered.
9. Continuously monitor the ventilatory device to ensure there are no malfunctions of equipment or use.
10. Airway adjuncts should be monitored for proper placement.
11. Devices capable of measuring carbon dioxide levels (capnography, end tidal CO2 detectors, and colormetric devices) should be ultilized to ensure adequate respiration.

SPINAL MOTION RESTRICTION

LEVEL OF AUTHORIZATION

First Responder, EMT-Basic, EMT-Intermediate & EMT-Paramedic

RATIONALE

Stabilization of the spinal column prior to moving the patient from the scene, and during transport, may prevent further damage, which could result in permanent neurological deficit.

Patients should not routinely be transported on long boards, unless the clinical situation warrants long board use. An example of this may be facilitation of immobilization of multiple extremity injuries or an unstable patient where removal of a board will delay transport and/or other treatment priorities. In these rare situations, long boards should be padded or have a vacuum mattress applied to minimize secondary injury to the patient

DESIRED EFFECT

When performed correctly, spinal immobilization should provide stabilization for the fracture, or displacement, above and below the site. Limiting movement may also help to reduce pain.

INDICATIONS

1. Patient complaint of spinal pain, spinal tenderness, spinal deformity, neurological deficits or abnormalities.

Note The absence of complaints or visual injury does not confirm there is no injury. Drug use and distracting injuries may mask spinal injuries during assessment.

CONTRAINDICATIONS (RELATIVE)

1. On scene, if patient is unstable and in need of rapid extrication and transport. Use manual C-spine stabilization.
2. Unsafe environment.

PROCEDURE

A. Supine and hemodynamically stable:

1. Manually stabilize the head without airway compromise.
2. Check for pulse, movement, and sensation in extremities.
3. Bring head to the eyes forward position if no pain or resistance is met.
4. Apply correctly sized cervical collar without compromising the airway.
5. Place patient on long spine board with minimum movement using straddle slide or 4 person log roll.
6. The spine board should be padded or have a vacuum mattress applied to minimize secondary injury to the patient.
7. Secure the body, then the head to long spine board.
8. Recheck pulse, movement, and sensation in extremities.

B. Supine and hemodynamically unstable:

1. This procedure should be used when extrication times would negatively impact the survival of an unstable supine patient.
2. Manually stabilize the head without airway compromise.
3. Check for pulse, movement, and sensation in extremities.
4. Bring head to the eyes forward position if no pain or resistance is met.

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SPINAL MOTION RESTRICTION (cont.)

5. Apply correctly sized cervical collar without compromising the airway.
6. Place patient on full body spinal device with minimum movement using straddle slide log roll.
7. If adequate personnel are available, "hand stabilize" the patient to the board while moving to the ambulance.
8. If time and manpower permits, secure body then the head to long spine board while enroute.
9. Recheck pulse, movement, and sensation in extremities

C. Seated and hemodynamically stable:

1. Manually stabilize the head without airway compromise.
2. Check for pulse, movement, and sensation in extremities.
3. Bring head to the eyes forward position if no pain or resistance is met.
4. Apply correctly sized cervical collar without compromising the airway.
5. Place KED, or other appropriate device, behind patient with minimum movement.
6. Secure torso to KED or other device.
7. Secure head to the KED or other device.
8. Recheck pulse, movement, and sensation in extremities.
9. Move patient as a unit onto long spine board and secure as above.

D. Seated and hemodynamically unstable:

1. This procedure should be used when extrication time would negatively impact the survival of an unstable seated patient.
2. Manually stabilize the head without airway compromise.
3. Check for pulse, movement, and sensation in extremities.
4. Bring head to the eyes forward position if no pain or resistance is met.
5. Apply correctly sized cervical collar without compromising the airway.
6. Use manual spinal immobilization to rapidly extricate the patient from the seated position onto a long spine board.
7. If possible, secure body then the head to long spine board while en-route.
8. Recheck pulse, movement, and sensation in extremities.

E. Standing and hemodynamically stable:

1. Manually stabilize the head without airway compromise.
2. Check for pulse, movement, and sensation in extremities.
3. Bring head to the eyes forward position if no pain or resistance is met.
4. Apply correctly sized cervical collar without compromising the airway.
5. Place board behind patient.
6. The spine board should be padded or have a vacuum mattress applied to minimize secondary injury to the patient
7. Secure body to long spine board.
8. Secure head to the long spine board.
9. Lower board and patient as a unit.
10. Recheck pulse, movement, and sensation in extremities.

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SPINAL MOTION RESTRICTION (cont.)

F. Standing and hemodynamically unstable:

1. This procedure should be used when extrication time would negatively impact the survival of an unstable standing patient.
2. Manually stabilize the head without airway compromise.
3. Check for pulse, movement, and sensation in extremities.
4. Bring head to the eyes forward position if no pain or resistance is met.
5. Apply correctly sized cervical collar without compromising the airway.
6. Place board behind patient.
7. Lower board and patient as a unit.
8. As soon as possible secure body to long spine board.
9. Secure head to the long spine board.
10. Recheck pulse, movement, and sensation in extremities.

SPLINTING

EXTREMITY

LEVEL OF AUTHORIZATION

First Responder, EMT-Basic, EMT-Intermediate & EMT-Paramedic

RATIONALE

Isolated extremity trauma itself is rarely life threatening, however, complications of poorly managed injuries may result in significant loss of function and disability. The development of hemorrhagic shock is also a concern and the most important and immediate danger. Careful management of the extremity may prevent exacerbation of the existing injury and help preserve future function.

DESIRED EFFECT

When performed correctly, the fracture site, along with the joint above and below, will be immobilized. This should prevent further injury, help control bleeding and reduce pain.

INDICATIONS

1. Injury to the extremity with associated pain, swelling, numbness, tingling, deformity, or loss of function.
2. Amputation, if not completely severed.
3. Stabilize IV sites.

CONTRAINDICATIONS

1. None when indicated. Splinting should not be done on scene if the patient is unstable.

PROCEDURE

1. Manually stabilize injured extremity.
2. Cut or remove clothing to expose injury.
3. Check distal circulation, pulse, and neurological status.
4. Select and prepare appropriate splint.
5. Apply splint without moving fracture site regularly during transport.
6. Pad where applicable.
7. Immobilize above and below injury.
8. Re-check distal circulation, pulse, and neurological status.

Note: A traction splint can be used with no traction applied and used as a rigid splint.

SPLINTING

TRACTION SPLINT

LEVEL OF AUTHORIZATION

Basic, EMT-Intermediate & EMT-Paramedic

RATIONALE

The use of traction on a mid-shaft fracture of the femur helps in relieving spasms or tension to the muscles, stabilizes the fractured bone ends, and prevents additional damage to the surrounding arteries, veins and tissues. Relief of tension and spasms also assists in alleviating pain.

DESIRED EFFECT

When performed correctly, the fracture site, along with the joint above and below, will be immobilized. This should prevent further injury, help control bleeding and reduce pain.

INDICATIONS

1. Mid-shaft fracture to the femur.

CONTRAINDICATIONS

1. Fractures to the head of the femur.
2. Fractures to the lower third of the femur.
3. Associated fractures to the pelvis, patella, tibia, fibula.
4. Partial amputation of the extremity.
5. Critical patients should not have the device applied on scene.

PROCEDURE

1. Manually stabilize injured extremity.
2. Remove clothing to expose injury.
3. Remove shoe and sock.
4. Check distal circulation and neurological status
5. Adjust splint to proper length beside uninjured leg.
6. Apply the splint according to manufacturer's instructions.
7. Pull traction on the injured extremity.
8. Secure extremity to splint.
9. Recheck distal circulatory status, pulse, movement, and sensation.

Note: EMT-Intermediates and EMT-Paramedics, prior to applying traction splint, may administer analgesics.

SPECIAL CONSIDERATION

1. Traction splints should be applied to when indicated, special note of an open fracture should be documented.

TASER® BARB REMOVAL

LEVEL OF AUTHORIZATION

First Responder, EMT-Basic, EMT-Intermediate & EMT-Paramedic

RATIONALE

EMS personnel may be requested to assess patients after TASER deployment, and/or to remove TASER barbs lodged in someone's skin. This procedure has been approved at all licensure levels. Be aware that secondary injuries may result from falls sustained after the device has been deployed. Subjects should not be dazed or confused following device deployment. The patient may require additional restraint as defined in the Medical Direction Team's Policy and Procedure section.

DESIRED EFFECT

Provide relief from impaled barbs, allow visualization of the puncture areas and treatment of wounds if necessary

INDICATIONS

1. Patient with uncomplicated conducted electrical weapon (Taser®) probes embedded subcutaneously in non-sensitive areas of skin.

CONTRAINDICATIONS

1. Patients with conducted electrical weapon (Taser®) probe penetration in high-risk/sensitive areas of body should be transported for further evaluation and probe removal. These areas include:
   a. Eyes, ears, nose, mouth, face, or neck
   b. Genitals
   c. Female breasts
   d. Spine;
   e. Hands, feet, or joints.
   f. Suspicion that probe might be embedded in bone, blood vessel, or other sensitive structure.
2. Do not attempt removal if the subject is combative

PROCEDURE

1. Ensure wires are disconnected from weapon.
2. Utilize appropriate PPE (gloves.) Inform all caregivers of the intent to remove the contaminated sharp.
3. Remove one barb at a time. Stabilize the skin surrounding the TASER barb. Firmly grasp the barb and with one smooth hard jerk, remove barb from patient's skin. Consider using pliers or hemostats to prevent puncture wounds to EMS personnel.
4. Visually examine the barb tip to ensure it is fully intact. If any part of the barb remains in the subject, transport the patient to a medical facility for removal.
5. The TASER barb is considered a sharp and EMS personnel should take all precautions to avoid accidental needle sticks when removing barbs.
6. Ensure the barb is placed in an appropriate container and return the barb/container to the law enforcement officer for evidence.
7. Provide wound care by cleansing the affected area with antiseptic and cover with an adhesive bandage.

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TASER® Barb Removal (Cont.)

8. Inform subject of basic wound care and the need to seek additional care in the event that signs of infection occur (redness-pain-drainage-swelling-fever.) The subject will need a tetanus shot if he or she has not received one within the previous 5 years.

NOTES & PRECAUTIONS

1. Patients should be in police custody and monitored by Police for the safety of medical personnel.
2. Do not remove Taser® Barbs from high-risk/sensitive areas of body. Stabilize the barbs and transport to the Emergency Department
3. Tasers® emit two barbs. Make sure both are removed. Treat all barbs as a biohazard and dispose as you would any other sharps
4. Potential trauma may have occurred before (during a struggle) or after the patient was hit by the Taser® (patient falls and hits head).
5. Consider whether the patient meets criteria for Altered Mental Status or Poisonings and Overdoses protocols.

CAUTION: Where barbs have wires still connected to the Taser® Gun, shock can still be delivered.

TOURNIQUETS

LEVEL OF AUTHORIZATION

First Responder, EMT-Basic, EMT-Intermediate & EMT-Paramedic

RATIONALE

Tourniquets can be an effective means of mitigating uncontrolled exsanguination from a limb or extremity caused by a traumatic injury. This tool should be considered in the event of a life threatening extremity hemorrhage that cannot be controlled by other means.

DESIRED EFFECT

Occlude the blood supply to the injured limb

INDICATIONS

1. Life threatening extremity hemorrhage that cannot be controlled by other means
2. Serious or life threatening extremity hemorrhage where conditions (patient location, tactical or hazmat environment, etc.) prevent the use of standard hemorrhage control techniques
3. Life threatening condition(s) that require immediate attention and significant extremity hemorrhage where the use of a tourniquet is more expedient than standard hemorrhage control

CONTRAINDICATIONS

1. Non-extremity hemorrhage
2. Proximal extremity location where tourniquet application is not practical

PROCEDURE

1. Place tourniquet proximal to wound, the best points of application are high on the upper arm under the armpits for brachial arteries and high on the upper thigh within the groin area for femoral arteries. Do not place a tourniquet below the knee or below the elbow, no matter the location of the wound.
2. Tighten per manufacturer instructions until hemorrhage stops and/or distal pulses in affected extremity disappear.
3. Secure tourniquet per manufacturer instructions
4. Note time of tourniquet application and communicate this to receiving care providers
5. Dress wounds per standard wound care protocols
6. If one tourniquet is not sufficient or not functional to control hemorrhage, consider the application of a second tourniquet more proximal, or immediately next to the first.
7. Consider pain control

Note: A commercially available TCCC or C-TECC approved tourniquet has been widely tested and has fewer complications than improvised tourniquets.

WILDERNESS PROTOCOLS

LEVEL OF AUTHORIZATION

First Responder, EMT-Basic, EMT-Intermediate & EMT-Paramedic

RATIONALE

Wilderness EMS provides medical care to patients in the specialized pre-hospital situations of wilderness, backcountry, and other delayed and prolonged transportation contexts such as catastrophic disasters (referred to jointly as "the wilderness context"). The following skills shall only be used by providers who have a current wilderness certification from a bureau approved wilderness caregiver course and are authorized by their medical director to provide the treatment.

DESIRED EFFECT

When applied appropriately, wilderness protocols will enable responders to utilize skills and decision making directives to adequately manage patients in a wilderness environment.

INDICATIONS

1. EMS providers are functioning in a wilderness environment (an environment in which time to a hospital is expected to exceed two hours, except in the case of an anaphylactic reaction, in which no minimum transport time is required), and are authorized by their medical director to provide the treatment.

CONTRAINDICATIONS

1. None when indicated.

PROCEDURES

1. Minor wound cleaning and management;
2. Cessation of CPR;
3. Field clearance of the cervical-spine;
4. Reduction of dislocations resulting from indirect force of the patella, digit, and anterior shoulder.

MCKINLEY COUNTY EMS SYSTEM GUIDELINES Adopted by
GALLUP MEDSTAR AMBULANCE SERVICE
CITY OF GALLUP FIRE DEPARTMENT
MCKINLEY COUNTY FIRE AND EMS

OPERATIONS

FIRST RESPONDER
EMT - BASIC
EMT-INTERMEDIATE (EMT-I)
EMT-PARAMEDIC

REV 8: Updated 2024

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DUTY TO PROVIDE SERVICE

1. It is unlawful for an ambulance or medical rescue service, or any of its personnel or agents, to refuse to provide service to a person in need of emergency medical treatment or transportation, or to require advance payment prior to rendering such service.
2. An ambulance service and its personnel or agents may accept a refusal for treatment or transport from a patient who has been informed of the potential consequences of such a refusal.
3. When ambulance transport is requested or determined to be necessary, an ambulance service shall transport a patient requiring medical treatment to the closest appropriate facility capable of providing definitive care and treatment, as determined by the service's medical director through local EMS system protocol.
4. The ambulance or medical rescue service should make every attempt to give priority to emergency response calls.
5. The ambulance or certified medical rescue service must be available 24 hours a day, 365 days a year or have in place **MUTUAL AID** plans with all appropriate entities that may be implemented anytime the service cannot respond to a call or if a disaster or emergency occurs.
6. The ambulance service or certified medical rescue must develop mutual aid plans with all appropriate entities that may be implemented anytime an ambulance service cannot respond to a call or if a disaster or emergency occurs. Mutual aid that may be provided includes:
   a. in an emergency or disaster situation when requested by state or local authorities;
   b. when requested by another EMS service, an EMT, or healthcare facility during an emergency in accordance with established mutual aid agreements;
   c. when requested by a law enforcement agency or officer; or
   d. when requested by an official of a political subdivision of the state.

EMERGENCY MEDICAL DISPATCH (EMD)

EMERGENCY MEDICAL DISPATCHING

1. Emergency Medical dispatching includes the reception, evaluation, processing, provision of pre arrival instructions, management of requests for emergency medical assistance, and participation in ongoing evaluation and improvement of the emergency medical dispatch process. This process includes identifying the nature of the request, prioritizing the severity of the request, dispatching the necessary resources, providing medical aid and safety instructions to the callers and coordinating the responding resources as needed by does not include call routing.
2. The agency providing Emergency Medical Dispatch is required to be certified by the State of New Mexico and have a Bureau approved Emergency Medical Dispatch Priority Reference System (EMDPRS) used by State licensed Emergency Medical Dispatchers.
3. The agency must have an “EMD Medical Director” who is responsible for the management and accountability for the medical care aspects of an emergency medical dispatch agency including:
    a. responsibility for the medical decision and care advice rendered by the emergency medical dispatcher and emergency medical dispatch agency;
    b. approval and medical control of the operational emergency medical dispatch priority reference system (EMD-PRS);
    c. evaluation of the medical care and pre-arrival instructions rendered by the EMD personnel;
    d. direct participation in the EMD system evaluation and continuous quality improvement process; and, the medical oversight of the training of the EMD personnel.
4. All dispatchers providing Emergency Medical Dispatch (EMD) must be currently licensed by the State of New Mexico as an Emergency Medical Dispatcher.
5. All EMDPRS protocols used by emergency medical dispatch agencies must be approved by the Bureau and should be used on every request for medical assistance.

RESPONSE

STAFFING REQUIREMENTS

1. Under normal circumstances, when a request is made for emergency ambulance service, a minimum of one transport capable emergency vehicle will respond to the scene of the emergency. The emergency vehicle must be fully equipped to respond and have all designated equipment in compliance with the unit inventory. The unit inventory must be in compliance with the Public Regulation Commission (PRC) Motor Transportation Rules [18.3.14.14 NMAC - Rp, 18.3.14.14 NMAC, 2-13-15] and [18.3.14.15 NMAC - Rp, 18.3.14.15 NMAC, 2-13-15].
2. The driver of the emergency vehicle must be a "qualified driver" as defined by the PRC, unless unusual circumstances exist.
3. If the responding Agency is regulated by the PRC, a minimum of 2 licensed EMTs must respond and be present at the scene of all emergency calls, although they do not have to respond in the emergency vehicle. If the Agency is certified as a Medical Rescue, a minimum of one New Mexico licensed EMS provider must be present at the scene of an emergency. For transport of a patient, a minimum of one licensed New Mexico-licensed EMS provider must be present in the patient compartment of the medical rescue vehicle at all times while the compartment is occupied by a patient.
4. Healthcare personnel not licensed as an EMS provider may accompany and monitor a patient in the patient compartment of emergency vehicle, provided that at least one appropriate New Mexico licensed EMS provider is also present in the patient compartment, subject to the policies of the EMS agency. This does not apply to prearranged transfers of a stable patient or in unusual situations that result in an insufficient number of EMTs available for response.
5. If the incident involves multiple patients, a supervisor or his/her designee will determine how many emergency vehicles will respond initially. No more than two severely injured patients may be transported in one emergency vehicle, except in catastrophic events.
6. When an emergency vehicle responds for assistance to the public, and transportation to a medical facility is not required, a qualified driver and at least one EMT, or in the case of a Medical Rescue response, a licensed EMS provider, must respond in the vehicle.
7. When an emergency vehicle responds to stand-by for a planned hazardous event (sporting events, automobile races, etc.), a qualified driver and at least one EMT or in the case of a Medical Rescue response, a licensed EMS provider, must respond in the vehicle.
8. When an emergency vehicle responds for mutual aid by another agency, a qualified driver and at least one EMT, or in the case of a Medical Rescue response, a licensed EMS provider, must respond in the vehicle.

EMERGENCY RESPONSE PROCEDURE

1. The responding emergency vehicle operator must follow all state laws and local policies regarding the use of emergency lights, siren, speed, direction of travel, etc.
2. Emergency response must be either with no lights and siren (code 1) or lights and siren (code 3). During a Code 1 response, all traffic laws must be followed. During a code 3 response, emergency lights and siren must be used at all times during response. The siren should be turned off one block away from the scene unless traffic prohibits the unit from arriving at the scene. When approaching an intersection, the "pitch" of the siren should be

changed or an air horn should be sounded.

3. New Mexico State law, regarding emergency vehicles, states the driver of the emergency vehicle may:
   a. Park or stand, irrespective of the provisions of the State of New Mexico Motor Vehicle Code. [66-1-1 NMSA 1978];
   b. Proceed past a red or stop signal or stop sign, but only after slowing down as necessary for safe operation.
   c. Exceed the maximum speed limits as long as the driver does not endanger life or property.
   d. Disregard regulations governing direction of movement or turning in specified directions.
4. The exemptions granted to an authorized emergency vehicle apply only when the driver of the vehicle, while in motion, sounds an audible signal by bell, siren or exhaust whistle as reasonably necessary and when the vehicle is equipped with at least one lighted lamp displaying a red light visible under normal atmospheric conditions from a distance of five hundred feet to the front of the vehicle, except that an authorized emergency vehicle operated as a police vehicle need not be equipped with or display a red light visible from in front of the vehicle.
5. This section does not relieve the driver of an authorized emergency vehicle from the duty to drive with due regard for the safety of all persons, nor does it protect the driver from the consequences of his reckless disregard for the safety of others. If conditions become too hazardous (i.e. heavy rain, ice, fog, dust or smoke) response should be discontinued until conditions improve enough for safe response.
6. If it becomes necessary for one emergency vehicle to pass another during an emergency response, the emergency vehicle in the rear must notify the emergency vehicle in the front and advise them what side they will be passing on. If contact cannot be made (i.e. multi-agency response) **EXTREAME** caution must be exercised if it becomes necessary to pass.

SEAT BELTS

All drivers and passengers, both front and rear, must wear seat belts or restraining devices at all times while the vehicle is being operated.

PASSING SCHOOL BUSES

The emergency vehicle **MAY NOT** proceed past a school bus that has warning equipment activated unless the school bus driver signals that it is safe to pass. The emergency vehicle may then proceed past the bus at a safe speed using **EXTREME** caution.

SCHOOL ZONES

The emergency vehicle must observe and adhere to all posted school zone restrictions including speed, crosswalks, etc. This includes both emergency and non-emergency responses.

ENCOUNTERING AN INCIDENT DURING RESPONSE

1. If the responding emergency vehicle comes upon another emergency incident during response to an emergency call, the ambulance must stop at the incident, and notify dispatch of needed resources. The first call for emergency service must take priority, so every attempt must be made to administer emergency care to the first caller in a timely manner.

SCENE

EMERGENCY VEHICLE PLACEMENT

1. Upon approaching the scene, a decision must be made regarding the safest and most convenient place to park the emergency vehicle. The emergency vehicle must be parked for maximum visibility. Protection of the EMS personnel, and the patient(s), must also be considered.
2. If it becomes necessary to reposition the emergency vehicle, the driver must ensure that all passengers in the vehicle are seated until the ambulance comes to a complete stop. If backing the vehicle is necessary, a “backer” must be used. The backer must be out of the vehicle and not on the vehicle while it is being positioned.

SCENE SAFETY

1. All emergency scenes have inherent dangers. It is the responsibility of all EMS personnel to constantly be aware of their surroundings, and ensure that the scene is as safe as possible at all times. If at any time safety becomes questionable, personnel must leave the unsafe environment, re-evaluate the situation, and request additional resources if necessary.
2. The emergency vehicle driver will be responsible for scene safety and the safety of other EMS personnel until an incident commander arrives.
3. All personnel must wear reflective clothing or vests when working in traffic.

INCIDENT COMMAND

The Incident Command System will be applied to scenes involving multiple patients (i.e. industrial or motor vehicle accidents), and the following guidelines must be followed.

1. The driver of the first arriving emergency vehicle should assume "Incident Command" until command is transferred.
2. The Incident Commander should do the following:
   a. Identify and assess scene safety.
   b. Give an initial size-up report.
   c. Perform a 360-degree walk around of the scene to determine additional resource needs (i.e. police, extrication, or additional EMS response). Contact additional resources as needed.
   d. Assure that patients' conditions are assessed and coordinate the prioritization of patient care.
   e. Establish a "Command Name" (i.e. Buck Mountain Command).
   f. Establish a "Command Post".
   g. Give updates and reports to on scene personnel.
   h. Establish a Medical Sector Officer to be in charge of patient triage, treatment and transport.
   i. Establish a Level II staging area.
   j. Add to the Command Staff or expand the Incident Command System as needed to manage the incident.
   k. When transferring command, brief the new Incident Commander on the situation and progress.

MULTIPLE-CASUALTY MANAGEMENT AND START TRIAGE

1. A Major Medical Incident (MMI) is defined as an incident involving more than three patients. Any time patient numbers exceed current resources, consider declaring a MMI. Triage is a process of selecting the priority of patient treatment and transport based on extent of injuries. START (Simple Triage And Rapid Treatment) is a system that quickly distinguishes between critically ill victims and the less severely injured. The goal of the resources required to save life and limb.
2. Major Medical scenes will be classed in two ways:
    a. Multi-Patient Incident (MPI)
        i. Up to 25 patients
    b. Mass Casualty Incident (MCI)
        i. Over 25 patients
3. When multiple patients are encountered, receiving hospital emergency rooms must be notified as soon as possible to give them adequate time to prepare for patients.
4. Multi-Patient Incident (MPI) Guidelines
    a. Triage function and/or sector assignments
    b. Notify receiving hospitals
    c. Consider or establish a treatment area
    d. Consider additional resources
    e. Order additional ambulances early
    f. Complete EMS Tactical Benchmarks
5. Mass Casualty Incident (MCI)
    a. Triage function and sector assignments
    b. Assign a Transport Officer/Ambulance Coordinator
    c. Notify receiving hospitals
    d. Establish multiple treatment areas
    e. Activate Emergency Operations Center (EOC)
    f. Request additional resources
    g. Establish a Medical Supply Sector
    h. Complete EMS Tactical Benchmarks
6. Tactical Benchmarks
    a. Triage Report Completion
    b. Declaration of “All Immediates Transported”
7. Medical treatments rendered when performing START triage:
    a. Open an airway or insert an OPA
    b. Attempt to stop any visible bleeding
    c. Elevate the extremities for shock
8. Patients must be placed in triage categories:
    a. IMMEDIATE (Red) Priority #1 is assigned to those patients whose RPM (Respiration, Pulse, Mental Status) is altered.

b. DELAYED (Yellow) Priority #2 is assigned to those patients who are unable to follow instructions to evacuate the scene, but whose RPM is intact. It also includes patients who have a significant mechanism of injury (MOI), but whose RPM is intact.
c. MINOR (Green) Priority #3 is assigned to those patients who were able to evacuate the scene at the instruction of EMS personnel. These are the “walking wounded” and should be tagged later. (Note: The term “minor” patients should not be confused with “pediatric” patients)
d. DEAD/DYING (Black) Priority #4 is assigned to those patients who cannot breathe after the airway is opened and are mortally wounded. These patients will probably die despite the best resuscitation efforts.

In addition please refer to “Guidelines for MMI as set out in the Western Regional Advisory Council MCI Plan”. When in conflict, those guidelines supercede the guidelines above.

PATIENT CARE

PRIMARY CARE PROVIDER

1. The licensed healthcare professional most medically qualified, specific to the provision of rendering emergency care, will be in charge of patient care. In the case of an incident involving multiple patients, this person may be assigned to triage until adequate resources arrive.

CONFLICTING ORDERS FROM DOCTOR ON SCENE

1. Control of a medical emergency scene will be the responsibility of the credentialed individual in attendance who is most appropriately trained and knowledgeable in providing pre-hospital emergency stabilization and transport.
2. The EMS personnel are responsible for the management of the patient under direct or indirect supervision of the service Medical Director and/or the on-line medical control physician.
3. When the patient's physician is present and assumes responsibility for the patient's care, EMS personnel must defer to the orders of the patient's physician if those orders do not conflict with service protocols. All treatment rendered based on orders from the patient's physician, must be in accordance with the EMS personnel's scope of practice and must be documented on the EMS run report.
4. When the medical orders of the patient's physician differ from service protocols, an on-line physician in the ED must be contacted to discuss treatment with patient's physician. If the patient's physician and the on-line physician are unable to agree on treatment, the patient's physician must either continue to provide direct patient care and accompany the patient to the hospital or defer all remaining care to the on-line physician.
5. The pre-hospital provider's responsibility reverts back to the system's Medical Director or on-line medical direction any time the private physician is no longer in attendance.
6. When at the scene of an emergency, a physician who is positively identified by a New Mexico medical license and New Mexico driver's license, or recognition of the physician by the receiving hospital, may:
   a. Assist the EMTs and offer suggestions, but let the EMTs remain under service protocols; or
   b. Request to speak to the receiving hospital physician and directly offer medical advise and assistance; or
   c. Assume total responsibility for the patient and care given by the EMTs, physically accompany the patient to the receiving hospital, and document all instructions and treatment given.
7. In the event of a mass casualty incident or disaster, patient care needs may require an intervening physician to remain at the scene rather than accompany the patient to the hospital.

DEPARTING THE SCENE

1. Prior to moving the emergency vehicle after arriving at the scene, the driver of the vehicle must make sure that everyone still on board is aware the vehicle is being moved and if backing the unit, a "backer" must be used. The backer must be out of the vehicle and not on the vehicle while it is being positioned.
2. Before leaving the scene, the driver must ensure that all passengers are secured by restraining devices.

TRANSPORT

PATIENT CARE ENROUTE

1. If the responding Agency is regulated by the PRC, at least one EMT, at the appropriate level, must accompany the patient in the patient compartment at all times during transport. If the Agency is certified as a Medical Rescue, a minimum of one licensed New Mexico EMS provider must be present in the patient compartment of the medical rescue vehicle at all times while the compartment is occupied by a patient. If two critical patients are being transported, at least two appropriate EMS providers must be in the patient compartment. Exceptions to this policy would include transports with a member of a neonatal intensive care team attending a patient in a self-contained newborn intensive care isolette, and catastrophic events.
2. All patients must be secured with restraining devices at all times during transport.
3. If infants are being transported, infant seats must be used, unless CPR is being performed, or some other device properly immobilizes the patient and the device is secured to the gurney or bench seat.
4. Family members may be allowed to accompany the patient to the hospital if it will benefit the patient. An example would be a mother who is accompanying her child in an attempt to keep the child calm. If the patient is unconscious or critical, family members will not be allowed to accompany the patient to the hospital.
5. If family members are riding with the patient, they should ride in the front and secured by a seatbelt. If they are riding with the patient in the back (non-critical patients), they must be properly seated and secured by a restraining device.

SELECTION OF MEDICAL FACILITY

1. All unstable patients must be transported to the nearest appropriate medical facility that can provide immediate care for the patient. After evaluation in a medical facility, if it is determined a that a transfer is medically necessary, the patient may be transported to another medical facility.
2. Refer to McKINLEY COUNTY EMS DESTINATION GUIDELINES (Intro pg 8-15)

NOTIFICATION TO MEDICAL FACILITY

1. The emergency department must be notified as soon as possible with a detailed report of patient condition and treatment rendered. This must be accomplished in a timely manner, to allow for trauma activation if necessary, adequate time to prepare a space for the patient and for the emergency department physician to intervene in treatment if necessary.

ENCOUNTERING ANOTHER INCIDENT WHILE TRANSPORTING A PATIENT

1. If EMS personnel encounter another incident while transporting a patient to the hospital, the crew must consider if it would be appropriate to stop and evaluate the incident.
    a. If a critical patient is being transported, the EMTs first responsibility lies with the transport patient. If EMS personnel are transporting code 3, the crew must notify dispatch of the second incident and continue transport to the medical facility.
    b. If a non-critical patient is being transported, EMS personnel must stop, evaluate the scene and remain at the scene if necessary to conduct triage, evaluate for additional resources, and treat life threats. One appropriate EMS provider must remain with the

patient at all times.

HOSPITAL

TRANSFER OF PATIENT CARE

1. Transporting EMS personnel are responsible for the safe and orderly transfer of patient care to appropriately licensed hospital personnel (ER Technician, EMT, LPN, RN, or physician).
2. Transporting EMS personnel must give a written report to licensed hospital personnel at the time of patient transfer or deliver, if available, containing, at a minimum:
   a. ambulance unit number, EMT name and level of licensure;
   b. patient age and sex;
   c. patient's chief complaint;
   d. a brief history of the present illness, including scene assessment and mechanism of injury;
   e. major past illnesses;
   f. patient's mental status;
   g. patient's baseline vital signs;
   h. pertinent findings of the physical examination;
   i. description of emergency medical care that has been provided for the patient, including that provided by any first response units; and
   j. the patient's response to the emergency medical care received.
3. Transporting EMS personnel must deliver a copy of the completed pre-hospital patient care record to the receiving facility emergency department for inclusion in the patient's permanent medical record upon delivery of the patient to the hospital; in the event the unit is dispatched on another call, the patient care record shall be delivered as soon as possible after that call, but not later than the end of a shift or 24 hours after the transportation and treatment of the patient;
4. If EMS personnel are requested to remain at the hospital for assistance in patient care, personnel should remain at the hospital until their services are no longer needed. A supervisor or dispatcher must be notified of the situation.
5. EMS personnel are responsible for:
   a. Restocking all supplies.
   b. Sterilization of non-disposable supplies.
   c. Checking all equipment for future readiness.
   d. Maintaining the emergency vehicle in operable condition, ensuring cleanliness, decontamination, and orderliness of equipment and supplies.
   e. Complete all necessary paperwork.

INFECTION CONTROL

GENERAL INFECTION CONTROL

1. These general infection control procedures have been developed to minimize the risk of patient acquisition of infection from contact with contaminated devices, objects or surfaces and of transmission of an infectious agent from health-care workers to patients. These procedures should also protect health-care workers from the risk of becoming infected. These procedures are designed to prevent transmission of a wide-range of microbiological agents and to provide a wide margin of safety in the varied situations encountered in the health-care environment.
2. Because of work environments that provide inherently unpredictable risks of exposures, general infection-control procedures shall be applicable to all work situations. Exposures are unpredictable, therefore protective measures may often be used in situations that do not appear to present risk.

INFECTIOUS DISEASE

1. Definition - An infection or communicable disease is one that can be transmitted from person-to-person or from an infected animal or the environment to a person.
2. Identification - A person should be considered infectious if he/she displays any of the following:
   a. Current history of infection
   b. Fever
   c. A rash, open sore, or skin lesions anywhere on the body
   d. Diarrhea
   e. Vomiting
   f. Coughing or sneezing, especially with chest pain
   g. Draining wounds (pus, blood or other matter oozing, flowing or spurting from open wounds anywhere in the body)
   h. Profuse sweating
   i. Abdominal pain
   j. Headache accompanied by stiffness in the neck
   k. Signs of jaundice (yellowish discoloration of the skin or in the sclera)

EXPOSURE

1. Contact with blood or potentially infectious body fluids through the following methods:
   a. Needle sticks
   b. Contact of blood or blood-contaminated body fluids with chapped or non-intact skin, open wounds or mucous membranes
   c. Saliva in a human bite
   d. Airborne (TB, etc.)

TREATMENT FOR EXPOSURE

1. Immediately wash the affected area with soap or a decontaminating solution.
2. Consult proper medical authorities for assessment, counseling and preventive treatment as

appropriate.

3. Some types of exposure, for example human bites, require attention to prevent other types of infection.

REPORTING EXPOSURES

1. Notify immediate supervisor.
2. Document the time and nature of exposure and submit an exposure report to your immediate supervisor as soon as possible after the incident.

PREVENTING EXPOSURES

1. Hepatitis B vaccination (HBV) and post exposure follow-up.
   a. General Policy
      i. The employer must make available Hepatitis B vaccinations to all employees who have occupational exposure on an average of one or more times per month and post exposure follow-up for all employees with an occupational exposure incident.
      ii. All medical evaluations and procedures must be performed under the supervision of a licensed physician, and an accredited laboratory will conduct all laboratory tests.
      iii. All evaluations, procedures, vaccinations and post exposure management must be provided at a reasonable time and place, and according to standard recommendations for medical practice.
   b. HBV Vaccination
      i. HBV vaccination will be offered free of charge to all employees occupationally exposed on an average of one or more times per month to blood or other potentially infectious materials, unless the employee has a previous HBV vaccination or unless antibody testing has revealed that the employee is immune. If the employee initially declines HBV vaccination, but at a later date, while still covered under the standard and still employed by this employer decides to accept the HBV vaccine, the employer will provide the vaccine at that time. Should a booster dose(s) be recommended at a future date, under the same conditions listed above, such booster dose(s) will be provided, free of charge, according to standard recommendations for medical practice.
   c. Following a report of an exposure incident, the employer must make available a confidential medical evaluation and follow-up, including at least the following elements:
      i. Documentation of the route(s) of exposure, HBV and HIV antibody status of the source patient if known and the circumstances under which the exposure occurred.
      ii. If the source patient can be determined and permission is obtained, collection of and testing of the source patient's blood to determine the presence of HIV or HBV infection.
      iii. Collection of blood from the exposed employee as soon as possible after the exposure incident for the determination of HIV and/or HBV status. Actual antibody or antigen testing of the blood or serum sample may be done at that time or at a later date if the employee so requests.
      iv. Follow-up of the exposed employee including antibody or antigen testing, counseling, illness reporting and safe, effective post-exposure prophylaxis according to standard recommendations for medical practice.

d. For each evaluation under this section, the employer must obtain and provide the employee with a copy of the evaluating physician's written opinion, within 15 working days of the completion of the evaluation. The written opinion should be limited to the following information:
    i. The physician's recommended limitations upon the employee's ability to receive Hepatitis B vaccination.
    ii. A statement that the employee has been informed of the resulting medical evaluation and that the employee has been evaluated for any medical conditions resulting from exposure to blood or other potentially infectious materials which require further evaluation or treatment.
    iii. Specific findings or diagnoses that are related to the employee's ability to receive HBV vaccination, and all findings and diagnoses must remain confidential.

2. Gloves
    a. All personnel, prior to initiating any emergency patient care involving exposure to blood or other body fluids, must wear disposable gloves.
    b. In situations where large amounts of blood or other body fluids are likely to be encountered, personnel must make sure that gloves fit tight at the wrist to prevent contamination. "Double gloving" should be considered.
    c. When managing multiple patients during an incident, gloves should be changed and discarded between patient contacts, if time allows.
    d. In situations involving glass or other sharp objects (e.g. automobile extrication), disposable gloves must be worn under heavy fire fighting or extrication gloves.
    e. While wearing gloves, personnel must avoid handling personal items, such as combs and pens, that could become soiled or contaminated.
    f. Gloves that have become contaminated with blood or other body fluids must be removed as soon as possible, taking care to avoid skin contact with the exterior surface. Contaminated gloves must be placed and transported in bags that prevent leakage and will be disposed of or, in the case of reusable gloves, cleaned and disinfected properly.
3. Masks eye-wear and gowns
    a. Masks, eyewear and gowns must be present on all emergency vehicles that respond or potentially respond to medical emergencies or victim rescues.
    b. These items must be used in accordance with the level of exposure encountered. In cases of massive bleeding, arterial bleeding or the possibility of splashes of blood or body fluids or airborne pathogens, masks and eyewear must be worn.
    c. Gowns or aprons must be worn to protect clothing from splashes of blood or other body fluids. If large splashes or quantities of blood or other body fluids are present or anticipated, impervious gowns or aprons must be worn.
    d. An extra change of work clothing must be available at all times.

RESUSCITATION

1. During artificial ventilation, disposable airway equipment or equipment that can be cleaned and sterilized must be used. In multiple patient incidents, equipment that has become contaminated by use on one patient may not be used on other patients.
2. All disposable equipment must be properly disposed of and reusable equipment must be cleaned and disinfected after each use.
3. Ventilation devices (e.g. pocket masks, bag-valve masks, and positive pressure ventilators) must be available on all emergency vehicles and to all emergency response personnel that respond or potentially respond to medical emergencies or victim rescues.

DISINFECTION, DECONTAMINATION AND DISPOSAL

1. Needles and sharps
   a. All workers must take precautions to prevent injuries caused by needles, scalpel blades and other sharp instruments or devices during procedures or when cleaning used instruments.
   b. Needles must not be recapped, purposely bent or broken by hand, removed from disposable syringes or otherwise manipulated by hand.
   c. After they are used, disposable syringes and needles, scalpel blades and other sharp items must be placed in puncture-resistant containers for disposal.
   d. The puncture-resistant containers must be located as close as practical to the use area.
   e. Reusable needles must be left on the syringe body and must be placed in a puncture-resistant container for transport to the reprocessing area.
2. Hand washing
   a. Hands and other skin surfaces must be washed immediately and thoroughly if contaminated with blood, or other body fluids or other contaminated areas.
   b. Hands must always be washed after gloves are removed, even if the gloves appear to be intact. Hand washing must be done using appropriate facilities, such as utility or rest room sinks.
   c. Water-less antiseptic hand cleanser must be provided if hand washing facilities are not available.
3. Cleansing, disinfecting and sterilizing
   a. Sterilization
      i. Steam under pressure (autoclave), gas (ethylene oxide, dry heat, or immersion in an EPA - approved chemical "sterilant" for a prolonged period of time, (e.g. 6-10 hours or according to manufacturer's instructions).
   b. High-Level Disinfecting
      i. Hot water pasteurization (80-100 C) for 30 minutes or exposure to an EPA-registered "sterilant" chemical as above, except for a short exposure time (10-45 minutes or as directed by the manufacturer).
   c. Environmental Disinfecting
      i. Environmental surfaces, that have become soiled, must be cleaned and disinfected using any cleaner or disinfectant agent that is intended for environmental use. Such surfaces include floors, woodwork, ambulance seats, counter-tops, etc.
      ii. Protective gloves, masks, and gowns must be used if appropriate.
      iii. To assure the effectiveness of any sterilization or disinfecting process, equipment and instruments must first be thoroughly cleansed of all visible soil.
      iv. All bins, pails, cans and similar receptacles intended for reuse which have a potential for becoming contaminated must be inspected cleaned and disinfected on a regularly scheduled basis and cleaned and disinfected immediately after use of or upon visible contamination.
      v. Broken glassware, which may be contaminated, must not be picked up directly with the hands. It must be cleaned up using mechanical means such as a brush and dustpan, a vacuum cleaner, tongs, cotton swabs or forceps.

d. Laundry and Uniforms
   i. The employer must make laundry facilities and/or services routinely available.
   ii. Soiled linen must be handled as little as possible and with minimum agitation to prevent gross microbial contamination of the air and or persons handling the linen.
   iii. All soiled linen must be bagged at the location where it was used and if soiled with blood it must be transported in bags that prevent leakage.
   iv. In general, all laundry (linens, pillowcases, blankets, towels, etc.) must be left at a designated location for service.
   v. All work clothing contaminated with blood or other body fluids must be placed and transported in bags or containers that prevent leakage. Personnel involved in the bagging, transport and laundering of contaminated clothing must wear gloves. Protective clothing and uniforms must be washed and dried according to the manufacturer's instructions. Boots and leather goods may be brush-scrubbed with soap and hot water to remove contamination.

INFECTIOUS WASTE

1. The relative risk of disease transmission and application of local regulations determine the selection of procedures for disposal of infectious waste. Infectious waste must be either incinerated or must be decontaminated before disposal in a sanitary landfill. Bulk blood, suctioned fluids, excretions and secretions may be carefully poured down a drain connected to a sanitary sewer, where permitted.
2. Prior to the removal of protective equipment, personnel remaining on the scene after the patient has been cared for must carefully search for and remove contaminated materials. Debris must be disposed of as noted above.

TRAINING

1. All personnel must attend a training session on prevention and spread of infectious disease each year. As part of the training, employees will receive:
   a. Information as to the location of the written Infection Control Plan as well as any applicable OSHA standards.
   b. A general explanation of the epidemiology and symptoms of bloodborne diseases
   c. An explanation of the modes of transmission of bloodborne pathogens
   d. An explanation of the Infection Control Plan
   e. An explanation of the appropriate methods for recognizing tasks and activities that may involve exposure to blood and other potentially infectious materials
   f. An explanation of the use and limitations of practices that will prevent or reduce exposure including appropriate engineering controls, work practices and personal protective equipment.
   g. An explanation of the basis for selection of personal protective equipment
   h. Information on the Hepatitis B vaccine, including information on its efficacy, safety and benefits of being vaccinated
   i. Information on the appropriate actions to take, and persons to contact in the event of an emergency

(Continued next page)

j. An explanation of the procedures to follow if an exposure incident occurs including the method of reporting the incident and the medical follow-up that will be made available

ADHERENCE TO INFECTION CONTROL POLICIES

1. All personnel must comply with all infection control policies set forth by this service, and will be subject to disciplinary action for failure to do so.

RECORD KEEPING

1. Medical Records
   a. The employer must establish and maintain an accurate record for each employee.
   b. This record must include:
      i. The name and social security number of the employee
      ii. A copy of the employee's hepatitis B vaccination records and medical records relative to the employee's ability to receive vaccination or the circumstances of an exposure incident.
      iii. A copy of all results of physical examinations, medical testing and follow-up procedures as they relate to the employee's ability to receive vaccination or to post exposure evaluation following an exposure incident.
      iv. The employer's copy of the physician's opinion
      v. A copy of the information provided to the physician.
   a. The employer must assure that employee medical records are kept confidential and are not disclosed or reported to any person within or outside the workplace.
   b. The employer must maintain this record for at least the duration of employment plus 30 years in accordance with "29 CFR 1910.20 Access to Employee Exposure and Medical Records".

PERSONNEL REQUIREMENTS

MINIMAL QUALIFICATIONS

1. Successfully complete a recognized training course from an approved EMS training institution;
2. Possess a valid course completion certificate, and accomplish all state licensure examination application requirements;
3. Applicants shall meet all established requirements for initial licensing as identified by the current EMS licensure regulations. A copy of these regulations is available through the EMS bureau;
4. Generally, the knowledge and skills required demonstrate the need for a high school education or equivalent;
5. Ability to communicate verbally; via telephone and radio equipment;
6. Ability to lift, carry, and balance up to 125 pounds (250 pounds with assistance);
7. Ability to interpret written, oral, and diagnostic form instructions;
8. Ability to use good judgment and to remain calm in high-stress situations;
9. Ability to work effectively in an environment with loud noises and flashing lights;
10. Ability to function efficiently throughout an entire work shift;
11. Ability to calculate weight and volume ratios and read small English print, both under life threatening time constraints;
12. Ability to read and understand English language manuals and road maps;
13. Accurately discern street signs and address numbers;
14. Ability to interview patient, family members, and bystanders;
15. Ability to document, in writing, all relevant information in a prescribed format;
16. Ability to converse orally and in written form in English with coworkers and hospital staff as to status of patient;
17. Good manual dexterity, with ability to perform all tasks related to the highest quality of patient care;
18. Ability to assume a variety of postural positions to carry out emergency and non-emergency patient care, including light extrication; from crawling, kneeling, squatting, twisting, turning, bending, to climbing stairs and ladders, and the ability to withstand varied environmental conditions such as extreme heat, cold, and moisture; and
19. Ability to work in low light, confined spaces and other dangerous environments.

COMPETENCY AREAS

1. **Licensed EMS First Responder (EMFR)**: Must demonstrate competency handling emergencies utilizing all basic life support equipment and skills in accordance with all behavioral objectives of the approved New Mexico curriculum of first responder, to include the ability to demonstrate competency for all skills and procedures currently approved for the first responder, as identified by the current scope of practice document.
2. **Emergency Medical Technician-Basic (EMT-B)**: Must demonstrate competency handling emergencies utilizing all basic life support equipment and skills in accordance with all behavioral objectives of the approved New Mexico curriculum of EMT-basic, and to include

the ability to demonstrate competency for all skills and procedures currently approved for the EMT-basic, as identified by the current scope of practice document.

3. **Emergency Medical Technician-Intermediate (EMT-I)**: Must demonstrate competency handling emergencies utilizing all basic life support and intermediate life support equipment and skills in accordance with all behavioral objectives of the approved New Mexico curriculum of EMT-intermediate, and to include the ability to demonstrate competency for all skills and procedures currently approved for the EMT-intermediate, as identified by the current scope of practice document.
4. **Emergency Medical Technician-Paramedic (EMT-P)**: Must demonstrate competency handling emergencies utilizing all basic life support and advanced life support equipment and skills in accordance with all behavioral objectives of an approved New Mexico curriculum of EMT-paramedic, and to include the ability to demonstrate competency for all skills and procedures currently approved for the EMT-paramedic, as identified by the current scope of practice document.

DESCRIPTION OF TASKS FOR ALL EMS LEVELS

1. Receives call from dispatcher, responds verbally to emergency calls, reads maps, may drive emergency vehicle to emergency site, uses most expeditious route, and observes traffic ordinances and regulations.
2. May use equipment and other devices and procedures as authorized by level of licensure and scope of practice.
3. Assists in lifting, carrying, and transporting patient to an ambulance and to a medical facility.
4. Reassures patients and bystanders and searches for medical identification emblem to aid in care.
5. Extricates patient from entrapment, assesses extent of injury, uses prescribed techniques and appliances, radio dispatcher for additional assistance or services, provides light rescue service if required and trained, provides additional emergency care following service established protocols.
6. Complies with regulations in handling deceased, notifies authorities, arranges for protection of property and evidence at scene.
7. Determines appropriate facility to which patient will be transported, report nature and extent of injuries or illness to the facility, asks for direction from hospital physician or emergency department staff.
8. Observes patient in route and administers care as directed by physician or service-established protocols.
9. Identifies diagnostic signs that require communication with facility.
10. Assists in removing patient/s from ambulance and into emergency facility.
11. Reports verbally, and in writing, observations about and care of patient at the scene, en-route to facility, and to the receiving facility.
12. Provides assistance to emergency department staff as required.
13. Replaces supplies, sends used supplies for sterilization, checks all equipment for future readiness, maintains ambulance in operable condition, ensures ambulance cleanliness and orderliness of equipment and supplies, decontaminates vehicle interior, determines vehicle readiness by checking oil, gas, water in battery and radiator, and tire pressure, maintains familiarity with all specialized equipment.

CRIMINAL HISTORY BACKGROUND SCREENING

1. The EMS Bureau is authorized to obtain the criminal history records of applicants and licensees and to exchange fingerprint data directly with the federal bureau of investigation, the department of public safety and any other law enforcement agency or organization. The Bureau requires fingerprinting of applicants and licensees for the purposes of this section. The purpose of the process includes:
   a. criminal history background checks for applicants and licensees;
   b. identify the information from a criminal history background check that may form the basis of a denial, suspension or revocation of licensure or any other disciplinary action
   c. otherwise carry out the provisions of this section.
2. The Bureau must comply with applicable confidentiality requirements of the department of public safety and the federal bureau of investigation regarding the dissemination of criminal history background check information.
3. An applicant or licensee whose license is denied, suspended or revoked, or who is otherwise
   disciplined based on information obtained in a criminal history background check, is entitled to review the information obtained pursuant to this section and to appeal the decision pursuant to the Uniform Licensing Act [61-1-1 through 61-1-31 NMSA 1978].
4. The applicant or licensee will bear any costs associated with ordering or conducting criminal history background checks.
5. The provisions of the Criminal Offender Employment Act [28-2-1 through 28-2-6 NMSA 1978] will govern any consideration of criminal history records required or permitted by the Emergency Medical Services Act.

QUALITY ASSURANCE

1. The ambulance service must have a written Quality Assurance (QA) program.

   All EMS responses will have a corresponding NM EMS Service Report or the equivalent completed and delivered to the receiving medical facility upon delivery of the patient to the hospital. In the event the unit is dispatched on another call, the patient care record must be delivered as soon as possible after that call, but not later than the end of a shift or twenty-four (24) hours after the transportation and treatment of the patient. The minimum patient information required upon patient delivery to the destination facility includes:

   a. ambulance unit number, EMT name and level of licensure
   b. patient age and sex
   c. patient's chief complaint or EMT's primary impression
   d. a brief history of the present illness, including scene assessment and mechanism of injury
   e. major past illnesses
   f. patient's mental status
   g. patient's baseline vital signs
   h. pertinent findings of the physical examination
   i. description of emergency medical care that has been provided for the patient, including that provided by any first response units
   j. the patient's response to the emergency medical care received.

2. A designated member or committee and/or the system Medical Director must review these reports at least quarterly to determine whether appropriate medical care is being provided.
3. The Medical Director, or designee, must document the steps taken during the review. Subsequent reviews must include an evaluation of whether appropriate follow-up has been accomplished. Receiving hospitals and other EMS agencies within the patient catchment area should be invited to participate in these reviews when appropriate;
4. Standards that will be evaluated during QA activities are:
   a. Appropriate medical assessments.
   b. Compliance with service protocol
   c. Appropriate medical control
   d. Treatment in compliance with the New Mexico Scope of Practice
5. The Medical Director and/or a designee will address problems and discuss any necessary training and counseling.
6. A written report of any disciplinary action and suggested solutions will be provided to personnel involved with the run, if applicable.

PATIENT CONFIDENTIALITY

PROVIDER/PATIENT RELATIONSHIP

1. Information obtained during an incident that pertains to statements or observations made regarding the patient's appearance, chief complaint, physical assessment, symptoms or treatment is considered privileged patient information.
2. Personnel involved in incidents, or who receive information pertaining to patient(s) must avoid making any comments or entering into conversations regarding details of the patient's condition.
3. Personnel must refrain from making comments or statements that may be considered slanderous or a defamation of character.
4. Personnel must avoid comments that may be considered libel or a defamation of character when preparing written documents regarding an incident
5. The Service Director or his designee must approve all requests for information, written or verbal, regarding an incident.

HIPAA (Health Insurance Portability and Accountability Act)

1. This Privacy Rule was enacted to assure that individuals' health information is properly protected while allowing the flow of health information needed to provide and promote high quality health care and to protect the public's health and well being. The Rule strikes a balance that permits important uses of information, while protecting the privacy of people who seek care and healing. A complete description of the rule can be found at

http://www.hhs.gov/ocr/privacy/hipaa/understanding/summary/index.html

2. Protected Information includes all "individually identifiable health information" held or transmitted by a covered entity or its business associate, in any form or media, whether electronic, paper, or oral. The Privacy Rule calls this information "protected health information" (PHI).
3. Individually identifiable health information is information, including demographic data, that relates to:
   a. the individual's past, present or future physical or mental health or condition,
   b. the provision of health care to the individual, or
   c. the past, present, or future payment for the provision of health care to the individual,

   and that identifies the individual or for which there is a reasonable basis to believe it can be used to identify the individual. Individually identifiable health information includes many common identifiers (e.g., name, address, birth date, Social Security Number).
4. The Privacy Rule excludes from protected health information employment records that a covered entity maintains in its capacity as an employer and education and certain other records subject to, or defined in, the Family Educational Rights and Privacy Act, 20 U.S.C. §1232g.
5. There are no restrictions on the use or disclosure of de-identified health information. De-identified health information neither identifies nor provides a reasonable basis to identify an individual. There are two ways to de-identify information; either: (1) a formal determination by a qualified statistician; or (2) the removal of specified identifiers of the individual and of the individual's relatives, household members, and employers is required, and is adequate only if the covered entity has no actual knowledge that the remaining information could be used to identify the individual.

RECORD KEEPING

EMS SERVICE REPORT

1. It is required by the PRC that ambulance services complete a patient run report for each patient contacted during an emergency response or inter-facility transport; the minimum data elements from these reports, as identified by the EMS bureau, shall be compiled to the extent possible and submitted to the pre- hospital data collection system at the EMS bureau as prescribed in 7.27.4 NMAC, Emergency Medical Services Fund Act;
2. Minimum patient information required upon patient delivery to the destination facility, pursuant to ambulance service protocol, an ambulance service shall communicate, electronically or in writing, clinical patient information to the intercepting ambulance or receiving facility at the time of patient transfer or delivery, if available:
   a. Ambulance unit number, EMT name and level of licensure;
   b. Patient age and sex;
   c. Patient's chief complaint or EMT's primary impression;
   d. A brief history of the present illness, including scene assessment and mechanism of injury;
   e. Major past illnesses;
   f. Patient's mental status;
   g. Patient's baseline vital signs;
   h. Pertinent findings of the physical examination;
   i. Description of emergency medical care that has been provided for the patient, including that provided by any first response units; and
   j. The patient's response to the emergency medical care received.
3. An ambulance service shall deliver an electronic or written copy of the completed pre-hospital patient care record to the receiving facility emergency department for inclusion in the patient's permanent medical record upon delivery of the patient to the hospital; in the event the unit is dispatched on another call, the patient care record shall be delivered as soon as possible after that call, but not later than the end of a shift or twenty four (24) hours after the transportation and treatment of the patient;
4. Incidents that require a detailed run report include, but are not limited to:
   a. EMS incidents
   b. Standbys
   c. Mutual aid
   d. Canceled runs (if the unit clears the station)
   e. Refusal of service

SERVICE RECORDS

1. All ambulance and medical rescue services are required to maintain accurate and separate records of its services in New Mexico, including but not limited to:
   a. driver records including current licenses, history of DOT physical examinations or physician certifications, and emergency vehicle operator training history;
   b. EMS personnel licensure;

c. statement of employment or volunteer status, including employment start and stop dates;

d. records of equipment, such as reports, repair and maintenance records, equipment lists, vehicle titles, and registration certificates;

e. complete accounts;

f. organized records of all ambulance runs, including a copy of the patient care record.

g. patient care records retention: an ambulance service shall retain pre-hospital patient care records for seven (7) years, as approved by local medical protocol;

h. An ambulance service may only release patient care records as provided by state and federal law, including but not limited to the Health Insurance Portability and Accountability Act (HIPAA).

REFUSAL OF SERVICE FORM

1. A refusal form must be completed for all patients that are potentially in need of emergency care, but refuse treatment and/or transport. This does not include patients that are dead at the scene.