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**Ref. No. 1200**

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Provider Impression:

No Medical Complaint (NOMC)

**GENERAL MEDICAL**

General Medical	1202	1202-P
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Provider Impressions:

Body Pain Non-traumatic (BPNT)  
Chest Pain – Not Cardiac (CPNC)  
Cold / Flu Symptoms (COFL)  
Extremity Pain/Swelling-Non-traumatic (EXNT)  
Headache – Non-traumatic (HPNT)  
Hypertension (HYTN)  
Palpitations (PALP)  
Weakness – General (WEAK)

Diabetic Emergencies	1203	1203-P
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Provider Impressions:

Hyperglycemia (HYPR)  
Hypoglycemia (HYPO)

Fever / Sepsis	1204	1204-P
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Provider Impression:

Fever (FEVR)  
Sepsis (SEPS)

GI / GU Emergencies	1205	1205-P
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Provider Impressions:

Abdominal Pain/Problems (ABOP)  
Diarrhea (DRHA)  
Genitourinary Disorder-Unspecified (GUDO)  
Lower GI Bleeding (LOGI)  
Upper GI Bleeding (UPGI)  
Nausea / Vomiting (NAVM)  
Vaginal Bleeding (VABL)

Medical Device Malfunction	1206	1206-P
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Provider Impression:

Medical Device Malfunction (FAIL)

Shock/Hypotension	1207	1207-P
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Provider Impression:

Hypotension (HOTN)  
Shock (SHOK)

**BEHAVIORAL**

Agitated Delirium	1208	1208-P
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Provider Impressions:

Agitated Delirium (AGDE)

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Behavioral / Psychiatric Crisis	1209	1209-P	<u>Provider Impressions:</u> Behavioral / Psychiatric Crisis (PSYC)
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**C A R D I O V A S C U L A R / C H E S T P A I N**

Cardiac Arrest	1210	1210-P	<u>Provider Impressions:</u> Cardiac Arrest – Non-Traumatic (CANT) DOA – Obvious Death <sup>2</sup> (DEAD)
Cardiac Chest Pain	1211	-	<u>Provider Impressions:</u> Chest Pain – Suspected Cardiac <sup>3</sup> (CPSC) Chest Pain – STEMI (CPMI)
Cardiac Dysrhythmia - Bradycardia	1212	1212-P	<u>Provider Impression:</u> Cardiac Dysrhythmia (DYSR)
Cardiac Dysrhythmia - Tachycardia	1213	1213-P	<u>Provider Impression:</u> Cardiac Dysrhythmia (DYSR)
Pulmonary Edema / CHF	1214	-	<u>Provider Impression:</u> Respiratory Distress / Pulmonary Edema / CHF (CHFF)

**C H I L D B I R T H / P R E G N A N C Y**

Childbirth (Mother)	1215	1215-P	<u>Provider Impression:</u> Childbirth (Mother) <sup>4</sup> (BRTN)
Newborn / Neonatal Resuscitation	-	1216-P	<u>Provider Impression:</u> Newborn (BABY)
Pregnancy Complication	1217	1217-P	<u>Provider Impression:</u> Pregnancy Complication <sup>4</sup> (PREG)
Pregnancy Labor	1218	1218-P	<u>Provider Impression:</u> Pregnancy / Labor <sup>4</sup> (LABR)

**E N V I R O N M E N T A L**

Allergy	1219	1219-P	<u>Provider Impression:</u> Allergic Reaction (ALRX) Anaphylaxis (ANPH)
Burns	1220	1220-P	<u>Provider Impression:</u> Burn (BURN)

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Electrocution	1221	1221-P	<u>Provider Impression:</u> Electrocution (ELCT)
Hyperthermia (Environmental)	1222	1222-P	<u>Provider Impression:</u> Hyperthermia – Environmental <sup>5</sup> (HEAT)
Hypothermia / Cold Injury	1223	1223-P	<u>Provider Impression:</u> Hypothermia / Cold Injury (COLD)
Stings / Venomous Bites	1224	1224-P	<u>Provider Impression:</u> Stings / Venomous Bites (STNG)
Submersion (Drowning and Decompression Emergency)	1225	1225-P	<u>Provider Impression:</u> Submersion / Drowning (DRWN)

**ENT EMERGENCIES**

ENT / Dental Emergencies	1226	1226-P	<u>Provider Impression:</u> ENT / Dental Emergencies (ENTP) Epistaxis (NOBL)
	1227 (omitted)		
Eye Problem	1228	1228-P	<u>Provider Impression:</u> Eye Problem – Unspecified (EYEP)

**NEUROLOGY**

ALOC	1229	1229-P	<u>Provider Impression:</u> ALOC – Not Hypoglycemia or Seizure (ALOC)
Dizziness / Vertigo	1230	1230-P	<u>Provider Impression:</u> Dizziness / Vertigo (DIZZ)
Seizure	1231	1231-P	<u>Provider Impression:</u> Seizure – Active (SEAC) Seizure – Postictal (SEPI)
Stroke / CVA / TIA	1232	1232-P	<u>Provider Impression:</u> Stroke / CVA / TIA (STRK)
Syncope / Near Syncope	1233	1233-P	<u>Provider Impression:</u> Syncope / Near Syncope (SYNC)

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**R E S P I R A T O R Y**

Airway Obstruction	1234	1234-P	<u>Provider Impression:</u> Airway Obstruction (CHOK)
BRUE (ALTE)	-	1235-P	<u>Provider Impression:</u> BRUE (BRUE)
Inhalation Injury	1236	1236-P	<u>Provider Impressions:</u> Inhalation Injury (INHL) Smoke Inhalation (SMOK)
Respiratory Distress	1237	1237-P	<u>Provider Impressions:</u> Respiratory Distress / Bronchospasm (SOBB) Respiratory Distress / Other (RDOT) Respiratory Arrest/Respiratory Failure (RARF)

**T O X I C O L O G Y**

Carbon Monoxide Exposure	1238	1238-P	<u>Provider Impression:</u> Carbon Monoxide (COMO)
Dystonic Reaction	1239	1239-P	<u>Provider Impression:</u> Dystonic Reaction (DYRX)
HAZMAT (Nerve Agent, organophosphate, radiological)	1240	1240-P	<u>Provider Impression:</u> HAZMAT Exposure (DCON)
Overdose / Poisoning / Ingestion	1241	1241-P	<u>Provider Impressions:</u> Alcohol Intoxication (ETOH) Overdose / Poisoning / Ingestion (ODPO)

**T R A U M A**

Crush Injury/Syndrome	1242	1242-P	<u>Provider Impression:</u> Traumatic Injury (TRMA)
Traumatic Arrest	1243	1243-P	<u>Provider Impression:</u> Traumatic Arrest - Blunt (CABT) Traumatic Arrest – Penetrating (CAPT)
Traumatic Injury (Multisystem, Isolated head, isolated extremity)	1244	1244-P	<u>Provider Impression:</u> Traumatic Injury (TRMA)

**C O M M U N I C A B L E   D I S E A S E**

Potential COVID-19 Patients      **1245**      -

Provider Impressions:

Cold / Flu Symptoms (COFL)

Fever (FEVR)

Respiratory Distress / Bronchospasm (SOBB)

Respiratory Distress / Other (RDOT)

Respiratory Arrest/Respiratory Failure (RARF)

Sepsis (SEPS)

**MEDICAL CONTROL GUIDELINES**      **1300**

**Notes**


- 1 Medical Device Malfunction for children may include but is not limited to: Ventriculoperitoneal shunts, vagal nerve stimulators, G-tubes, central lines, and LVADs
- 2 Cardiac Arrest Obvious Death for children includes SIDS
- 3 Chest pain that is concerning for cardiac cause in children is rare – and treatment provided in General Medical 1202-P
- 4 Protocols for labor, childbirth and pregnancy complications if the Mother is a pediatric patient (adolescent) are no different than the adult protocols but are listed here for ease of accessing the correct protocol
- 5 Hyperthermia for children includes child trapped in vehicle
- 6 Traumatic injury – Multisystem/Torso Trauma includes suspected child maltreatment

The Treatment Protocols were developed to be consistent with EMS Provider Impressions as approved by the California EMS Authority. The foundations for the revised guidelines are the EMT and paramedic scope of practice, medical research, and community standards in medical practice.

## GENERAL INFORMATION

1. Patients with the same disease may have differing symptoms and presentations, and conversely, patients with similar signs and symptoms may have very different diagnoses.
2. The Treatment Protocols guide treatment of “classic” presentations based on evidence-based practice. EMTs, Paramedics, mobile intensive care nurses (MICNs) and Base hospital physicians must utilize their medical knowledge, expertise and critical thinking to determine appropriate treatment for each patient.
3. The protocols were not developed with the intent that all therapies be done on scene. Transport of patients with treatment en route is left to the discretion of the field unit and the base hospital.
4. The protocols incorporate EMS policies that address EMT and Paramedic Scope of Practice, Procedures Prior to Base Contact, Base Hospital Contact, and Standing Field Treatment Protocols. Assessments and treatments recommended would be carried out by an EMT and/or a paramedic based on their scope of practice.
5. Treatments may be ordered by Mobile Intensive Care Nurses (MICNs) providing online medical direction as indicated in the protocols. In addition, MICNs may provide orders for pain management per their clinical judgement up to a maximum adult total dose of [Fentanyl 250mcg](#) or [Morphine 20mg](#) or, for pediatrics, Fentanyl or Morphine up to a maximum of 4 total doses per [MCG 1309](#).

## PROTOCOL FORMAT

1. Pharmacologic agents are in **BOLD** typeface.
2. In general, each protocol will have a corresponding pediatric specific protocol. The pediatric protocols are identified with a letter “P” at the end of the protocol number and have the Los Angeles County teddy bear symbol. 
3. In preparation for an on-line mobile application, the protocols were developed to provide linkages to additional helpful information specific to the provider impression and/or specific patient population, such as the Medical Control Guidelines (MCG) and patient destination policies. These are indicated in [BLUE](#) in the protocols as hyperlinks.

## USING THE TREATMENT PROTOCOLS

1. Utilize [Ref. No. 1201](#), Assessment as a starting point until a Provider Impression is established.
2. If more than one treatment protocol applies, begin by using the one most closely associated with the patient’s symptoms and prioritize interventions based on your judgement.

Based on the patient's presentation and the assessment, the EMT or Paramedic determines his/her Provider Impression. In general, Provider Impressions are categorized according to body systems. Each Provider Impression has a corresponding Treatment Protocol.

### **BODY SYSTEM**

↳ Provider Impression/Protocol Name → Protocol Number

A Treatment Protocol may be applicable to more than one Provider Impression. Also, rarely, a Provider Impression may be further divided into more than one Treatment Protocol, e.g. management for the Provider Impression 'Cardiac Dysrhythmia' is guided by [TP 1212, Cardiac Dysrhythmia - Bradycardia](#) or [TP 1213, Cardiac Dysrhythmia - Tachycardia](#) depending on the dysrhythmia.

3. Refer to the appropriate Treatment Protocol(s) to guide patient treatment. The treatment protocol sequence is intended to guide the priority in which interventions are administered but not to imply a strict order as priorities in an individual patient may differ.
4. If the patient's status changes, a different treatment protocol might be needed. When using the new treatment protocol, take into account the treatments already performed.
5. These protocols are designed for the Paramedic however, the EMT provider may use these protocols based on their scope of practice and should contact ALS when indicated by their assessment as per [Ref. 802, Emergency Medical Technician \(EMT\) Scope of Practice](#) and [Ref. 1200.4 BLS Upgrade to ALS Assessment](#).
6. All pediatric patients must be measured using a length-based resuscitation tape (e.g., Broselow) and the identified color code and weight in kilograms must be reported when contacting the Base hospital. The color code and weight in kilograms must be documented for all pediatric patients in the weight section of the EMS Patient Care Record (ePCR or EMS Report Form). Medication dosages are determined by correlating the length-based resuscitation tape color code with the appropriate weight on the Medical Control Guideline ([MCG 1309, Color Code Drug Doses/L.A. County Kids](#)) chart. If the child is longer than the length-based resuscitation tape, use adult dosing.
7. A full patient report must be given: 1) If Base hospital contact is made to obtain patient care orders or 2) if the patient meets trauma criteria or guidelines but is being transported to a non-trauma hospital. Once Base hospital contact is made for medical control the overall authority for the patient's medical care lies with the Base. The treatment plan should be developed collaboratively by EMS and Base personnel. Treatments outlined in the applicable protocol may be administered by EMS personnel and communicated to the Base.
8. Paramedic verbal report to the Base hospital and/or receiving hospital shall be in accordance with [Ref. 1340, Medical Control Guideline: Online Medical Control and Receiving Hospital Notification](#).

CONTACT BASE HOSPITAL as specified in [Ref. 1200.2, Base Contact Requirements](#)

TRANSPORT ALS when either of the following conditions apply:

1. Need for immediate and ongoing ALS intervention (excluding single administration of medication for symptomatic relief, e.g., morphine, fentanyl, ondansetron)
2. Potential for deterioration en route including but not limited to abnormal vital signs

NOTIFY THE RECEIVING HOSPITAL to expedite care of ALL ALS patients to ensure 9-1-1 receiving facilities are prepared with the appropriate resources to receive the patient and to reduce ambulance patient offload time (APOT).

1. When operating on treatment protocols without online medical control, paramedics will notify the receiving hospital directly.
2. When Base Contact is made, Base personnel will notify the receiving hospital.



**PRINCIPLES:**

1. Base Contact is made by paramedics to establish online medical direction for additional guidance on field care beyond what is contained in the offline treatment protocols.
2. Once the patient is no longer present and under the care of the paramedic medical direction is not needed. Therefore, this policy does not apply and Base Contact is not required.
3. Base Contact for all patients shall be made according to the requirements below and at the judgment of the treating paramedic. Access to online medical direction is not limited to those conditions listed below.
4. For children 13 to 36 months of age, Base Contact and/or transport is required, except those with no medical complaint or with isolated minor extremity injury.
5. Children less than or equal to 12 months of age must be transported in accordance with [Ref. No. 510](#), regardless of provider impression or field treatment rendered, and if a parent or caregiver refuses transport, Base Contact shall be made prior to signing the patient out Against Medical Advice (AMA).
6. Base Contact criteria below still apply if the patient is on scene and refusing transport (AMA). This includes parents or legal guardians who refuse transport of a pediatric patient.
7. This document provides a quick reference list for Base Contact requirements; it does not replace the treatment protocols or the guidance there within, which shall be followed at all times unless otherwise directed by online medical direction.

**GUIDELINES:**

1. Base Contact is required when consultation with the base would be helpful such as:
  - a. Patient presentation renders the provider impression and appropriate treatment protocol unclear
  - b. Additional or unlisted treatments are required
2. Base Contact is required when five or more patients require transport (contacting the Medical Alert Center constitutes Base Contact).
3. Base Contact is required for children who meet transport guidelines to a Pediatric Medical Center ([Ref. 510](#))
4. Base Contact is required for patients in traumatic full arrest who do not meet criteria for determination of death per [Ref. 814](#). In these instances, Base Contact shall be made with the Trauma Center.
5. Base Contact is required for the following provider impressions in all patients:

- a. Agitated Delirium
  - b. Anaphylaxis
  - c. Cardiac Arrest – Non-traumatic (unless patient meets determination of death by Ref. 814)
  - d. Childbirth
  - e. Dystonic Reaction
  - f. Hypotension
  - g. Respiratory Failure
  - h. Shock
  - i. Stroke / CVA / TIA
6. Additionally, Base Contact is required for the following provider impressions in pediatric patients:
- a. BRUE
  - b. Chest Pain – Suspected Cardiac / Chest Pain - STEMI
  - c. Pregnancy/Labor
  - d. Newborn
7. Base Contact is required for the following provider impressions under the specified conditions:
- a. Airway Obstruction
    - Severe respiratory distress or respiratory arrest
  - b. Altered Level of Consciousness (ALOC)
    - Persistent ALOC of unclear etiology
  - c. Cardiac Dysrhythmia
    - Rapid atrial fibrillation with poor perfusion
    - Symptomatic bradycardia
    - Wide complex tachycardia
  - d. Medical Device Malfunction
    - Ventricular Assist Device (VAD) malfunction
  - e. Overdose / Poisoning / Ingestion
    - If signing out AMA

- f. Pregnancy Complication
    - >20 weeks with vaginal bleeding
  - g. Respiratory Distress (of any etiology e.g. Bronchospasm, Pulmonary Edema, Other)
    - Severe respiratory distress unresponsive or not amenable to CPAP
    - Unmanageable airway
  - h. Seizure
    - Pregnant patient
    - Status epilepticus
  - i. Submersion / Drowning
    - ALOC
    - Decompression illness
  - j. Traumatic Injury
    - Crush syndrome
    - Prolonged entrapment >30 minutes
    - Trauma criteria or guidelines met
    - Traumatic arrest not meeting criteria for determination of death per Ref. 814
8. Base Contact is required concurrently when the following treatments are initiated:
- a. Adenosine in pediatric patients
  - b. Cardioversion
  - c. Push-dose epinephrine
  - d. Transcutaneous pacing
9. Base Contact is required prior to initiating the following treatments:
- a. Additional dosing of normal saline or medications (e.g., midazolam, opiate analgesia) after the maximum dose is administered per protocol
  - b. Calcium chloride for patients with calcium channel blocker overdose
  - c. Cardioversion of a patient with adequate perfusion, or awake with a narrow complex tachycardia, or any atrial fibrillation
  - d. Midazolam for treatment of agitation in a patient with behavioral/psychiatric crisis
  - e. IO placement beyond the indications listed in [MCG 1375](#)
  - f. Sodium bicarbonate for symptomatic bradycardia with suspected hyperkalemia or for

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dysrhythmia due to possible tricyclic antidepressant or other toxic overdose

- g. Transcutaneous pacing if HR >40

**Treatment Protocol: PROVIDER IMPRESSIONS**

**Ref. No. 1200.3**

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**GENERAL RULES:**

1. This is a list of all the provider impressions (PI) in alphabetical order by PI name.
2. The following columns list the associated Treatment Protocol (TP) name and number. Use the corresponding “\_\_-P” protocol if patient ≤ 14 years of age.
3. The last column provides guideline about the use of the PI.

<b>Provider Impression (PI) Name</b>	<b>PI Code</b>	<b>Treatment Protocol (TP)</b>	<b>TP Code</b>	<b>Guidelines for use of PI</b>
Abdominal Pain/Problems (GI/GU)	ABOP	GI/GU Emergencies	<a href="#">1205</a> <a href="#">1205-P</a>	For any pain or problem in the abdominal/flank region that does not have a more specific PI, includes post-surgical complications.
Agitated Delirium	AGDE	Agitated Delirium	<a href="#">1208</a> <a href="#">1208-P</a>	For Agitated Delirium only. NOT for psychiatric emergencies or other causes of agitation without delirium.
Airway Obstruction/ Choking	CHOK	Airway Obstruction	<a href="#">1234</a> <a href="#">1234-P</a>	For any upper airway emergency including choking, foreign body, swelling, stridor, croup, and obstructed tracheostomy
Alcohol Intoxication	ETOH	Overdose/ Poisoning/ Ingestion	<a href="#">1241</a> <a href="#">1241-P</a>	For alcohol intoxication if it is the primary problem. Use of secondary PI if the patient has another acute emergency.
Allergic Reaction	ALRX	Allergy	<a href="#">1219</a> <a href="#">1219-P</a>	For any simple allergic reaction that is isolated to the skin (hives/ urticarial only) and does not meet definition of anaphylaxis
ALOC - Not Hypoglycemia or Seizure	ALOC	ALOC	<a href="#">1229</a> <a href="#">1229-P</a>	For altered mental status not attributed to a more specific PI (i.e., cause unknown). Use as secondary PI when cause known.
Anaphylaxis	ANPH	Allergy	<a href="#">1219</a> <a href="#">1219-P</a>	For anaphylaxis.
Behavioral/ Psychiatric Crisis	PSYC	Behavioral/ Psychiatric Crisis	<a href="#">1209</a> <a href="#">1209-P</a>	For psychiatric crisis that is the primary problem. NOT for anxiety/agitation secondary to medical etiology, use PI related to medical issue.
Body Pain – Non Traumatic	BPNT	General Medical	<a href="#">1202</a> <a href="#">1202-P</a>	For pain not related to trauma that is not localized to chest, abdomen, head, or extremity.
BRUE	BRUE	BRUE	<a href="#">1235-P</a>	For a brief resolved unexplained event (BRUE). Patient must be ≤12 months of age and back to baseline on assessment.

**Treatment Protocol: PROVIDER IMPRESSIONS**

**Ref. No. 1200.3**

Provider Impression (PI) Name	PI Code	Treatment Protocol (TP)	TP Code	Guidelines for use of PI
Burns	BURN	Burns	<a href="#">1220</a> <a href="#">1220-P</a>	For any burn injury to skin. For inhalation injury use PI Inhalation Injury. Use with PI Traumatic Injury if other trauma present.
Carbon Monoxide	COMO	Carbon Monoxide Exposure	<a href="#">1238</a> <a href="#">1238-P</a>	For suspected or known carbon monoxide exposure.
Cardiac Arrest – Non-traumatic	CANT	Cardiac Arrest	<a href="#">1210</a> <a href="#">1210-P</a>	For non-traumatic cardiac arrest in which any resuscitation is initiated, NOT dead on arrival.
Cardiac Dysrhythmia	DYSR	Cardiac Dysrhythmia – Bradycardia	<a href="#">1212</a> <a href="#">1212-P</a>	For any bradycardic rhythm <60bpm.
Cardiac Dysrhythmia	DYSR	Cardiac Dysrhythmia – Tachycardia	<a href="#">1213</a> <a href="#">1213-P</a>	For any tachydysrhythmia and for sinus tachycardia (ST) of unclear etiology. NOT for ST secondary to known cause – use more specific PI (e.g., Fever)
Chest Pain – Not Cardiac	CPNC	General Medical	<a href="#">1202</a> <a href="#">1202-P</a>	For musculoskeletal and pleuritic pain and any chest pain that is NOT of possible cardiovascular etiology.
Chest Pain – STEMI	CPMI	Cardiac Chest Pain	<a href="#">1211</a>	For any suspected STEMI, with or without chest pain.
Chest Pain – Suspected Cardiac	CPSC	Cardiac Chest Pain	<a href="#">1211</a>	For any chest pain that is of possible cardiovascular etiology but NOT STEMI (e.g., NSTEMI, pericarditis, dissection).
Childbirth (Mother)	BRTH	Childbirth (Mother)	<a href="#">1215</a> <a href="#">1215-P</a>	For delivery or imminent delivery of a fetus beyond the first trimester (12 weeks). For <12 weeks use PI Pregnancy Complications.
Cold / Flu Symptoms	COFL	General Medical	<a href="#">1202</a> <a href="#">1202-P</a>	For minor respiratory illness in a patient without shortness of breath or wheezing; must have normal respiratory rate and O <sub>2</sub> sat (if available).
Diarrhea	DRHA	GI/GU Emergencies	<a href="#">1205</a> <a href="#">1205-P</a>	For diarrhea without bleeding. NOT for melena, use PI Upper GI Bleeding.
Dizziness/Vertigo	DIZZ	Dizziness/Vertigo	<a href="#">1230</a> <a href="#">1230-P</a>	For lightheadedness or vertigo, without syncope.
DOA – Obvious Death	DEAD	Cardiac Arrest	<a href="#">1210</a> <a href="#">1210-P</a>	For non-traumatic cardiac arrest found dead on arrival such that no resuscitation is initiated.
Dystonic Reaction	DYRX	Dystonic Reaction	<a href="#">1239</a> <a href="#">1239-P</a>	For suspected dystonic reaction (i.e., reaction, typically from antipsychotic medications, causing abnormal contraction of head and neck muscles.)
Electrocution	ELCT	Electrocution	<a href="#">1221</a> <a href="#">1221-P</a>	For any electrocution injury.

**Treatment Protocol: PROVIDER IMPRESSIONS**

**Ref. No. 1200.3**

Provider Impression (PI) Name	PI Code	Treatment Protocol (TP)	TP Code	Guidelines for use of PI
ENT / Dental Emergencies	ENTP	ENT / Dental Emergencies	<a href="#">1226</a> <a href="#">1226-P</a>	For a problem located in the ear, nose, throat area, except NOT epistaxis – use PI Epistaxis, NOT airway obstruction – use PI Airway Obstruction.
Epistaxis	NOBL	ENT / Dental Emergencies	<a href="#">1226</a> <a href="#">1226-P</a>	For any bleeding from the nares.
Extremity Pain/Swelling – Non-Traumatic	EXNT	General Medical	<a href="#">1202</a> <a href="#">1202-P</a>	For pain, swelling, or other non-traumatic problem of an extremity, includes rashes and non-traumatic bleeding (e.g., varicose vein bleed).
Eye Problem – Unspecified	EYEP	Eye Problem	<a href="#">1228</a> <a href="#">1228-P</a>	For any pain or problem of the eye or periorbital region, use with PI Traumatic Injury if a traumatic mechanism.
Fever	FEVR	Fever	<a href="#">1204</a> <a href="#">1204-P</a>	For reported or tactile fever that is NOT suspected sepsis. For sepsis use PI Sepsis.
Genitourinary Disorder – Unspecified	GUDO	GI/GU Emergencies	<a href="#">1205</a> <a href="#">1205-P</a>	For urinary or genital related complaints, or for sexual assault, except NOT vaginal bleeding – use PI Vaginal Bleeding, NOT trauma-related – use PI Traumatic Injury.
HazMat Exposure	DCON	HAZMAT	<a href="#">1240</a> <a href="#">1240-P</a>	For any hazardous material (chemical) exposure. May use with another PI (e.g., Inhalation Injury or Burns) when applicable.
Headache – Non-Traumatic	HPNT	General Medical	<a href="#">1202</a> <a href="#">1202-P</a>	For non-traumatic headache or head pain.
Hyperglycemia	HYPR	Diabetic Emergencies	<a href="#">1203</a> <a href="#">1203-P</a>	For patients with primary concern for hyperglycemia and/or associated symptoms (blurred vision, frequent urination or thirst) without more specific PI and those requiring field treatment. DO NOT list for incidental finding of hyperglycemia related to another illness.
Hypertension	HYTN	General Medical	<a href="#">1202</a> <a href="#">1202-P</a>	For patients with primary concern for hypertension without symptoms related to a more specific PI. For symptomatic patients, use related PI as primary (e.g., Headache – Non-traumatic) and Hypertension as secondary. DO NOT list for incidental finding of hypertension.
Hyperthermia	HEAT	Hyperthermia (Environmental)	<a href="#">1222</a> <a href="#">1222-P</a>	For environmental exposure causing hyperthermia, e.g., heat exhaustion and heat stroke, drugs may also be a contributing factor.

**Treatment Protocol: PROVIDER IMPRESSIONS**

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Provider Impression (PI) Name	PI Code	Treatment Protocol (TP)	TP Code	Guidelines for use of PI
Hypoglycemia	HYPO	Diabetic Emergencies	<a href="#">1203</a> <a href="#">1203-P</a>	For glucose <60mg/dL.
Hypotension	HOTN	Shock / Hypotension	<a href="#">1207</a> <a href="#">1207-P</a>	For SBP <90mmHg in adults or <70mmHg in children with transient low BP or rapidly responds to fluid resuscitation and without signs of shock.
Hypothermia / Cold Injury	COLD	Hypothermia / Cold Injury	<a href="#">1223</a> <a href="#">1223-P</a>	For environmental exposures causing hypothermia and/or frostbite injury.
Inhalation Injury	INHL	Inhalation Injury	<a href="#">1236</a> <a href="#">1236-P</a>	For any signs/symptoms related to inhaling a gas or substance other than smoke or carbon monoxide.
Lower GI Bleeding	LOGI	GI/GU Emergencies	<a href="#">1205</a> <a href="#">1205-P</a>	For bleeding from the rectum and/or bright red bloody stools.
Medical Device Malfunction – Fail	FAIL	Medical Device Malfunction	<a href="#">1206</a> <a href="#">1206-P</a>	For a medical device that fails, including VADs, insulin pumps, and shunts. Usually for internal devices, may be used for vent failure if patient is asymptomatic. For symptomatic patients, use PI related to symptoms (e.g., Automated Internal Defibrillator firing – use PI associated with complaint such as Cardiac Dysrhythmia – Tachycardia).
Nausea / Vomiting	NAVM	GI/GU Emergencies	<a href="#">1205</a> <a href="#">1205-P</a>	For any nausea or vomiting without blood. Not for adverse reaction to opiate administration by EMS, manage with primary PI/TP.
Newborn	BABY	Newborn/Neonatal	<a href="#">1216-P</a>	For any newborn deliveries in the field.
No Medical Complaint	NOMC	Assessment	<a href="#">1201</a>	For patients without any medical, psychiatric or traumatic complaint and no signs of illness on assessment. Usually reserved for non-transports.
Overdose/ Poisoning/Ingestion	ODPO	Overdose/ Poisoning/ Ingestion	<a href="#">1241</a> <a href="#">1241-P</a>	For any intentional or unintentional overdose/poisoning by any route, includes illicit substances and prescription medications, overdose and/or adverse reactions.
Palpitations	PALP	General Medical	<a href="#">1202</a> <a href="#">1202-P</a>	For any patient complaint of palpitations (e.g., rapid heart rate beat, skipped beats, chest fluttering) with normal rate and rhythm on the ECG.
Pregnancy Complications	PREG	Pregnancy Complication	<a href="#">1217</a> <a href="#">1217-P</a>	For any pregnancy-related condition that is not labor. Includes vaginal bleeding in pregnancy, hypertension, and



**Treatment Protocol: PROVIDER IMPRESSIONS**

**Ref. No. 1200.3**

Provider Impression (PI) Name	PI Code	Treatment Protocol (TP)	TP Code	Guidelines for use of PI
				complications of delivery.
Pregnancy / Labor	LABR	Pregnancy Labor	1218 1218-P	For contractions without imminent childbirth.
Respiratory Arrest / Failure	RARF	Respiratory Distress	1237 1237-P	For patients requiring positive-pressure ventilation and/or hypoxia despite 100% oxygen.
Respiratory Distress / Bronchospasm	SOBB	Respiratory Distress	1237 1237-P	For COPD/asthma exacerbations and any bronchospasms/wheezing not from pulmonary edema.
Respiratory Distress / Other	RDOT	Respiratory Distress	1237 1237-P	For patients with pulmonary disease that is not edema or bronchospasm, includes suspected pneumonia, PE, pneumothorax and non-pulmonary and unknown causes of respiratory distress.
Respiratory Distress / Pulmonary Edema / CHF	CHFF	Pulmonary Edema / CHF	1214	For congestive heart failure exacerbation.
Seizure – Active	SEAC	Seizure	1231 1231-P	For seizure witnessed by EMS, whether treated or not.
Seizure – Postictal	SEPI	Seizure	1231 1231-P	For any seizure that stopped prior to EMS arrival and there is no further seizure activity during EMS contact.
Sepsis	SEPS	Fever / Sepsis	1204 1204-P	For patients with suspected sepsis (i.e., signs suggestive of sepsis including fever, tachycardia, suspected infection).
Shock	SHOK	Shock / Hypotension	1207 1207-P	For patients with poor perfusion not rapidly responsive to IV fluids.
Smoke Inhalation	SMOK	Inhalation Injury	1236 1236-P	For patients with smoke inhalation.
Stings / Venomous Bites	STNG	Stings / Venomous Bites	1224 1224-P	For snakes, scorpion, insects, and marine envenomations (stingrays, jelly fish). NOT for animal bites, use PI traumatic injury.
Stroke / CVA / TIA	STRK	Stroke / CVA / TIA	1232 1232-P	For suspected stroke or transient ischemic attack (stroke symptoms that resolve rapidly).
Submersion / Drowning	DRWN	Submersion	1225 1225-P	For any submersion injury, including drowning and dive (decompression) emergencies.
Syncope / Near Syncope	SYNC	Syncope / Near Syncope	1233 1233-P	For syncope (transient loss of consciousness). NOT for cardiac arrest, use PI Cardiac Arrest – Non-traumatic only.

**Treatment Protocol: PROVIDER IMPRESSIONS**

**Ref. No. 1200.3**

Provider Impression (PI) Name	PI Code	Treatment Protocol (TP)	TP Code	Guidelines for use of PI
Traumatic Arrest – Blunt	CABT	Traumatic Arrest	1243 1243-P	For cardiac arrest with blunt traumatic mechanism, including those declared deceased in the field by <a href="#">Ref. 814</a> . NOT for trauma sustained after cardiac arrest, use PI Cardiac Arrest – Non- traumatic.
Traumatic Arrest – Penetrating	CAPT	Traumatic Arrest	1243 1243-P	For cardiac arrest with penetrating traumatic mechanism, including those declared deceased in the field by <a href="#">Ref. 814</a> .
Traumatic Injury	TRMA	Traumatic Injury	1242 1242-P 1244 1244-P	For any trauma-related injury including crush injury and conducted electrical weapons (CEW). May use in addition to another PI when medical condition also present (e.g., for syncope with trauma – use PI Syncope and PI Traumatic Injury; for CEW use in patient with agitated delirium – use PI Agitated Delirium and PI Traumatic Injury.
Upper GI Bleeding	UPGI	GI/GU Emergencies	1205 1205-P	For vomiting blood or coffee ground emesis, and for melena (i.e., black, tarry stools).
Vaginal Bleeding	VABL	GI/GU Emergencies	1205 1205-P	For vaginal bleeding in the NON-pregnant patient. For vaginal bleeding in pregnancy use PI Pregnancy Complications.
Weakness – General	WEAK	General Medical	1202 1202-P	For nonfocal weakness, general malaise, and any nonspecific ‘sick’ symptoms.

**DEFINITIONS:**

**Emergency Medical Condition:** A condition or situation in which an individual has an immediate need for medical attention. The presence of abnormal vital signs (heart rate and rhythm, respiratory rate, blood pressure – except isolated asymptomatic hypertension, oxygen saturation) are also indications of an emergency medical condition. Patients who meet any criteria for Base Contact or Receiving Hospital Notification are also considered to have an emergency medical condition.

**Extremis:** A life-threatening, time-critical situation (e.g., unmanageable airway, uncontrollable hemorrhage) that, without immediate stabilization, could result in serious and immediate jeopardy to the health of an individual (in the case of a pregnant woman, the health of the woman or her unborn child), such that the patient's life would be jeopardized by transportation to any destination but the most accessible receiving facility (MAR) or for pediatrics the closest Emergency Department Approved for Pediatrics (EDAP).

**PRINCIPLES:**

1. ALS providers, as compared to BLS providers, have additional assessment skills and equipment that allow a more thorough evaluation of patients in the field to determine whether an emergency medical condition is present.
2. Patients with an emergency medical condition require transport to the emergency department and may benefit from ALS care prehospital.
3. Patients released on scene are at risk of having a bad outcome.
4. BLS providers should always use their judgment when considering need for an ALS assessment. While this document lists when ALS assessment is required prior to transport or release at the scene, BLS providers need not be limited by this list and should request an ALS response whenever they feel it necessary.
5. For patients in extremis or for those patients for which waiting for ALS may be longer than transport to the ED, BLS providers may transport to the closest facility if, in their judgment, this will provide the most rapid ALS care for the patient.

**GUIDELINES:**

1. If the patient has an emergency medical condition as defined above and a BLS unit is alone on scene, the BLS unit should immediately consider whether an ALS assessment is required. If en route, the ALS unit should not be cancelled.
2. Any adult or pediatric patient with a provider impression requiring Base Contact as defined in Ref. 1200.2 requires ALS assessment and transport unless otherwise directed by online medical control.
3. Additionally, an ALS assessment is required for pediatric patients who meet transport guidelines to a Pediatric Medical Center and pediatric patient in labor. An ALS assessment with Base Contact is required for patients 13-36 months of age and who are not transported (unless no medical complaint or with isolated minor extremity injury). Patients ≤ 12 months require transport.

4. Finally, patients with the following high-risk features also require an ALS assessment regardless of provider impression. The ALS assessment will determine the provider impression and the level of transport required.
  - a. The following abnormal vital signs sustained or deteriorating over two measurements 5 minutes apart:
    - i. For adults:
      - a. HR  $\geq$  120
      - b. SBP  $<$  90
      - c. RR  $\geq$  24
      - d. O<sub>2</sub> Sat  $<$  94% ( $<$ 88% for COPD patients) - If patient on home O<sub>2</sub>, as measured on usual O<sub>2</sub> flow rate (if pulse oximetry is available)
    - ii. For pediatrics, as per [MCG 1309](#)
  - b. Chief complaints including:
    - i. Acute focal neurologic symptoms
    - ii. Altered mental status
    - iii. Chest pain (medical cause)
    - iv. Shortness of breath
    - v. Syncope/Near syncope
    - vi. Vaginal bleeding in pregnancy greater than or equal to 20 weeks

**Treatment Protocol: ASSESSMENT**

**Ref. No. 1201**

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1. Use appropriate PPE precautions – gloves for all patients and additional protective equipment prn ([MCG 1357](#))
2. Assess scene for potential hazards and number of adult and pediatric patients
3. Activate additional resources prn (e.g. EMS personnel, HAZMAT, law enforcement)
4. Perform patient assessment to determine Provider Impression. Refer to appropriate Treatment Protocol(s) to guide patient management ([Ref. 1200, Treatment Protocols Table of Contents](#))
5. For pediatric patients, assessment should be performed per [MCG 1350](#) and include determination of patient's weight in kg ([MCG 1309](#)) ❶
6. If after complete assessment there is no medical or psychiatric complaint and no signs of trauma or illness – document *No Medical Complaint* ❷
7. **CONTACT BASE** if difficulty determining Provider Impression or appropriate protocol to use
8. Continue assessment and treat per [TP 1202/1202-P, General Medical](#) until the Provider Impression is established, at which point the appropriate treatment protocol should be used in conjunction with [TP 1202/1202-P](#)

**SPECIAL CONSIDERATIONS**

- ① EMS personnel are mandated reporters of child abuse and neglect, and a report should be made when suspected as per [Ref. 822](#). Communicate suspicion for child abuse and/or neglect to accepting ED staff when home suggests children could be at risk for harm (e.g., unkempt home, evidence of drug or alcohol abuse, unsafe living conditions, known or suspected domestic violence), when the history does not match with the severity of physical findings (e.g., child posturing after a roll of the couch), when patterned injury or burns are noted (e.g., circular burns as from a cigarette, whip marks on the skin, burns of both hands or feet), or when child reports physical or sexual abuse. This must also be accompanied by notification to the Department of Children and Family Services (DCFS).
- ② Parents /caregivers can be concerned about signs and symptoms in children which may not show at the time of paramedic assessment. This does not exclude the possibility that an emergency exists. If there are not physical signs and the complaint does not otherwise have a provider impression associated with it – document No Medical Complaint.

If parents/caregivers have ongoing concerns these patients require transport to an EDAP for evaluation

1. Assess airway and initiate basic and/or advanced airway maneuvers prn ([MCG 1302](#))
2. Control external hemorrhage/bleeding prn ([MCG 1370](#))
3. Administer **Oxygen** prn ([MCG 1302](#))
4. Assess for signs of trauma  
For traumatic injury, treat in conjunction with [TP 1244, Traumatic Injury](#)
5. Initiate cardiac monitoring prn ([MCG 1308](#))  
Perform 12-lead ECG if cardiac ischemia suspected and treat per [TP 1211, Cardiac Chest Pain](#)
6. For patients with dysrhythmias, treat per [TP 1212, Cardiac Dysrhythmia - Bradycardia](#) or [TP 1213, Cardiac Dysrhythmia - Tachycardia](#)  
If patient with palpitations but normal sinus rhythm on 12-lead ECG – document Provider Impression as *Palpitations*
7. Establish vascular access prn ([MCG 1375](#))
8. Assess and document pain ([MCG 1345](#))  
Consider the following Provider Impressions:  
If chest pain present without suspicion of cardiac cause – document *Chest Pain – Not Cardiac* ❶  
If pain in neck or back without trauma – document *Body Pain – Non-traumatic*  
If headache and no report or signs of trauma – document *Headache – Non-traumatic*
9. For pain management: refer to [MCG 1345, Pain Management](#)
10. For nausea or vomiting:  
**Ondansetron 4mg ODT/IV/IM**, may repeat x 1 in 15 min prn and treat in conjunction with [TP 1205, GI/GU Emergencies](#)
11. For patients with complaints of weakness  
Assess neurologic exam; if focal findings present or stroke suspected treat per [TP 1232, Stroke/CVA/TIA](#)  
If no focal weakness present and complaint of generalized weakness – document Provider Impression as *Weakness – General*
12. For patients with complaints of hypertension without other signs or symptoms – document Provider Impression as *Hypertension* ❷

13. Consider the following Provider Impressions:
  - If cold/cough symptoms without respiratory distress or wheezing – document *Cold/Flu Symptoms*
  - If isolated pain or swelling in one or more extremities – document *Extremity Pain/Swelling – Non-traumatic* ③



**SPECIAL CONSIDERATIONS**

- ❶ When evaluating a patient for chest pain consider age, previous history of cardiac disease or MI, risk factors, and signs and symptoms to determine if cardiac chest pain suspected. Obtain a 12-lead ECG if age  $\geq 35$  years and/or patient has risk factors (hypertension, diabetes mellitus, high cholesterol, personal history of cardiac disease, or family history of early cardiac disease – defined as CAD/MI at age  $<50$  years old).
- ❷ Hypertension in a pregnant or recently post-partum patient is a sign of eclampsia, which requires immediate emergency and obstetric care. Additional signs of eclampsia are edema and seizures. Patients who are  $\geq 20$  weeks pregnant or  $\leq 6$  weeks post-partum with hypertension (BP  $\geq 140/90$ mmHg) should be transported to the ED for evaluation.
- ❸ For patients with bilateral swelling of lower extremities, evaluate for signs of congestive heart failure. Careful examination of breath sounds and vital signs, including respiratory rate and pulse oximetry, should be performed. If there are signs or symptoms of pulmonary edema, treat per [TP 1214](#), [Pulmonary Edema / CHF](#).

**Treatment Protocol: DIABETIC EMERGENCIES**

**Ref. No. 1203**

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1. Assess airway and initiate basic and/or advanced airway maneuvers prn ([MCG 1302](#))
2. Administer **Oxygen** prn ([MCG 1302](#))
3. Advanced airway prn ([MCG 1302](#))
4. Initiate cardiac monitoring prn ([MCG 1308](#))  
Perform 12-lead ECG if cardiac ischemia suspected
5. Establish vascular access prn ([MCG 1375](#))
6. Check blood glucose
7. For blood glucose < 60 mg/dL:  
**Oral glucose preparation** or **Glucopaste 15gm PO** if patient awake and alert  
OR  
**Dextrose 10% 125 mL IV/IO** and reassess<sup>①</sup>  
If patient continues to be symptomatic, repeat 125 mL for a total of 250mL  
Document Provider Impression as *Hypoglycemia* <sup>②</sup>  
If unable to obtain venous access, **Glucagon 1mg (1mL) IM**, may repeat x1 in 20 min prn<sup>③</sup>

**CONTACT BASE** for persistent hypoglycemia for repeat dose of Dextrose 10% 250mL IV

8. For blood glucose > 200 mg/dL:  
Document Provider Impression as *Hyperglycemia*

For blood glucose >200 mg/dL and <400 mg/dL with suspected related symptoms: <sup>④</sup>

**CONTACT BASE** for order for Normal Saline 1L IV rapid infusion

For blood glucose > 400 mg/dL or reading "HIGH" <sup>⑤</sup> or for poor perfusion ([MCG 1355](#)):

**Normal Saline 1L IV rapid infusion** <sup>①</sup>

Reassess after each 250 mL increment for evidence of volume overload (pulmonary edema);  
stop infusion if pulmonary edema develops

For persistent poor perfusion, treat in conjunction with [TP 1207, Shock/Hypotension](#)

9. For nausea or vomiting:  
**Ondansetron 4mg ODT/IV/IM**, may repeat x1 in 15 min prn

### SPECIAL CONSIDERATIONS

- ① Use judgment based on the clinical status of the patient to determine whether IO placement for dextrose and/or fluid administration prior to hospital arrival is warranted. For altered patients who show signs of shock/poor perfusion and/or extremis with severe *HYPERglycemia* or *HYPOglycemia* and an IV cannot be obtained, an IO may be placed for fluid resuscitation or treatment with dextrose. Refer to [\(MCG 1375\)](#).
- ② Patients with hypoglycemia who are successfully treated with oral glucose or Dextrose 10% IV and then wish to decline transport to the hospital should be discouraged to do so if they have abnormal vital signs, fever, are taking long-acting hypoglycemic agents, history of alcohol abuse, possible ingestion or poisoning, or if they DO NOT have a history of diabetes mellitus as these patients are at high risk for recurrent hypoglycemic episodes. Patients at low risk are those with diabetes on short acting hypoglycemic agents who have someone with them and are able to tolerate oral intake. Low risk patients can be assessed, treated and released for follow-up as per Ref. No. 834. If a patient is not transported, he/she should be counseled to eat a high protein meal and to call his/her primary care physician.

#### Long Acting hypoglycemic agents

- Sulfonylureas: gliclazide, glimepiride, glipizide, gliquidone, glyburide, glycopyramide,
  - Thiazolidinediones (TZDs): pioglitazone (Actos), rosiglitazone (Avandia), troglitazone (Rezulin)
  - Alpha-glucosidase inhibitors: acarbose, miglitol, voglibose
  - Meglitinides – nateglinide, repaglinide
  - Combination drugs: glipizide and metformin (Metaglip), glyburide and metformin (Glucovance), pioglitazone and glimepiride (Duetact), pioglitazone and metformin (ACTOplus Met), rosiglitazone and metformin (Avandamet), rosiglitazone and glimepiride (Avandaryl)
- ③ Glucagon is effective only if there are sufficient glycogen stores in the liver. Patients with low glycogen stores such as severe malnutrition, cirrhosis, or adrenal insufficiency may not respond to glucagon.
  - ④ Consider other potential causes of hyperglycemia such as trauma, infection, or myocardial infarction and treat as per associated protocols.
  - ⑤ Patients with prolonged and/or severe hyperglycemia are at risk for significant volume losses leading to dehydration and electrolyte abnormalities. Fluid resuscitation with **Normal Saline** is recommended until their glucose can be lowered with medications.

1. Assess airway and initiate basic and/or advanced airway maneuvers prn ([MCG 1302](#))
2. Administer **Oxygen** prn ([MCG 1302](#))
3. Initiate cardiac monitoring prn ([MCG 1308](#))  
Perform 12-lead ECG if cardiac ischemia suspected
4. Establish vascular access prn ([MCG 1375](#))
5. If available, consider applying capnography for patients in whom you suspect sepsis ([MCG 1305](#))  
**1**
6. For suspected sepsis with any **one** of the following: tactile fever, tachycardia, or poor perfusion:  
**Normal Saline 1L IV/IO rapid infusion**  
Reassess after each 250 mL increment for evidence of volume overload (pulmonary edema);  
stop infusion if pulmonary edema develops  
Document Provider Impression of [Sepsis](#) **2**  
  
For persistent poor perfusion ([MCG 1355](#)), treat in conjunction with [TP 1207, Shock/Hypotension](#)
7. Check blood glucose prn;  
If < 60 mg/dL or > 400 mg/dL treat in conjunction with [TP 1203, Diabetic Emergencies](#)
8. If fever present without signs of sepsis or poor perfusion:  
Perform passive cooling measures and cover with thermal blankets if shivering occurs  
Document Provider Impression of [Fever](#) **3**
9. Obtain a travel history  
For potential emerging infectious disease, contact the Medical Alert Center to determine if special isolation procedures or transport is required **4**
10. For nausea or vomiting:  
**Ondansetron 4mg ODT/IV/IM**
11. For pain management: refer to [MCG 1345, Pain Management](#)

**SPECIAL CONSIDERATIONS**

- ❶ An end-tidal CO<sub>2</sub> (EtCO<sub>2</sub>) reading ≤ 25mmHg strongly supports the provider impression of sepsis in patients for whom sepsis is suspected.
- ❷ Sepsis is defined as the body's response to infection and *may* include fever, tachycardia or bradycardia, tachypnea, and signs of poor perfusion. Other signs of infection may be present such as cough (e.g., pneumonia), painful urination (e.g., urinary tract infection), abdominal pain (e.g., appendicitis), headache (e.g., meningitis), or a red swollen extremity (e.g., cellulitis, or necrotizing fasciitis). Septic shock is a continuum of signs and symptoms, which includes the presence of hypotension and/or evidence of poor perfusion. If infection is present and sepsis with or without shock is present document provider impression as [Sepsis](#).
- ❸ Fever is a natural response of the body to fight infection and may be present without signs of sepsis. If fever is present without signs of sepsis (tachypnea, tachycardia, or obvious sign of infection) or septic shock (signs of poor perfusion), document the provider impression as [Fever](#).
- ❹ Certain emerging diseases (e.g., Ebola virus disease) require special isolation procedures and transport. Determination of suspected cases must be made in coordination with the Department of Public Health (DPH). The Medical Alert Center (MAC) will facilitate DPH consultation and deployment of a High-Risk Ambulance (HRA) when indicated. Contact the MAC via phone at (562) 347-1789, ReddiNet, or VMED-28.

For Ebola Virus Disease: Patient Assessment and Transportation Guidelines can be accessed at the EMS Agency website or the following link

[https://file.lacounty.gov/SDSInter/dhs/1040046\\_LACoEbola911FlowChart-CongoDRC20180524FINAL.pdf](https://file.lacounty.gov/SDSInter/dhs/1040046_LACoEbola911FlowChart-CongoDRC20180524FINAL.pdf)

1. Assess airway and initiate basic and/or advanced airway maneuvers prn ([MCG 1302](#))
2. Administer **Oxygen** prn ([MCG 1302](#))
3. Initiate cardiac monitoring prn ([MCG 1308](#))  
Perform 12-lead ECG if cardiac ischemia suspected ❶
4. Establish vascular access prn ([MCG 1375](#))
5. For poor perfusion ([MCG 1355](#)):  
**Normal Saline 1L IV rapid infusion**  
Reassess after each 250 mL increment for evidence of volume overload (pulmonary edema);  
stop infusion if pulmonary edema develops

For persistent poor perfusion, treat in conjunction with [TP 1207, Shock/Hypotension](#)

6. Assess and document pain ([MCG 1345](#))  
If abdominal or pelvic pain during pregnancy, or vaginal bleeding with known or suspected pregnancy treat per [TP 1217, Pregnancy Complications](#)  
Consider the following Provider Impressions:  
If abdominal or pelvic pain – document *Abdominal Pain/Problems*  
If pain in penis, scrotum or testes in a male or complaints of vaginal symptoms in a female, or if for sexual assault – document *Genitourinary Disorder*
7. For pain management: refer to [MCG 1345, Pain Management](#)
8. For nausea or vomiting:  
**Ondansetron 4mg ODT/IV/IM**, may repeat x1 in 15 min prn
9. Consider the following Provider Impressions:  
If nausea or vomiting present in the absence of abdominal pain or diarrhea – document *Nausea/Vomiting*  
  
If vomiting blood or coffee ground material, and/or tarry/black stools – document [Upper GI Bleeding](#) ❷  
  
If vaginal bleeding without known pregnancy – document [Vaginal Bleeding](#)  
  
If complaint of diarrhea without hypotension – document [Diarrhea](#)  
  
If bleeding per rectum – document [Lower GI Bleeding](#) ❷

**SPECIAL CONSIDERATIONS**

- ❶ When evaluating a patient with abdominal pain, note that abdominal pain may be a sign of cardiac disease. If age  $\geq$  35 years, previous history of cardiac disease or MI, or risk factors are present (hypertension, diabetes mellitus), consider obtaining a 12-lead ECG to evaluate for ischemia or STEMI.
- ❷ For both upper and lower GI bleeding, if abdominal pain is also present, document GI bleeding as primary provider impression and abdominal pain as secondary provider impression.

1. Assess airway and initiate basic and/or advanced airway maneuvers prn ([MCG 1302](#))
2. Administer **Oxygen** prn ([MCG 1302](#))
3. Establish type of medical device inserted ❶
4. Establish vascular access prn ([MCG 1375](#))
5. For poor perfusion ([MCG 1355](#)):  
**Normal Saline 1L IV rapid infusion**  
Reassess after each 250 mL increment for evidence of volume overload (pulmonary edema); stop infusion if pulmonary edema develops  
  
For persistent poor perfusion, treat in conjunction with [TP 1207, Shock/Hypotension](#)
6. Assess and document pain ([MCG 1345](#))
7. For pain management: refer to [MCG 1345, Pain Management](#)
8. For nausea or vomiting:  
**Ondansetron 4mg ODT/IV/IM**
9. Document *Medical Device Malfunction* as the Provider Impression if the patient's presentation suggests malfunction of the medical device, otherwise treat as per applicable protocol, for example:
  - Insulin Pump: Check blood glucose prn and treat in conjunction with [TP 1203, Diabetic Emergencies](#)
  - Vagal Nerve Stimulation devices: Treat presenting symptoms; for seizure treat per [TP 1231, Seizure](#)
  - Ventricular Assist Device: **CONTACT BASE** and refer to [MCG 1325](#)
  - Ventriculoperitoneal (VP) Shunt: Treat presenting symptoms ❷
  - Pacemaker or Automated Internal Defibrillator: Treat presenting symptoms and obtain 12-lead ECG prn ([MCG 1308](#))



**SPECIAL CONSIDERATIONS**

- ❶ Most patients with an inserted medical device have medical complaints that are not related to the device itself and should be treated as per standard protocols based on presenting signs and symptoms. It is important to obtain a history of when the medical device was inserted as different complications occur depending on time since insertion.
- ❷ Patients with ventriculoperitoneal shunts can have breakage of the shunt connections, obstruction, or infection of the shunt, which may present as ALOC, headache, nausea and vomiting, or fever.

**BASE HOSPITAL CONTACT REQUIRED.**

1. Assess airway and initiate basic and/or advanced airway maneuvers prn ([MCG 1302](#))  
Continually assess patient's airway and ventilation status
2. Administer **Oxygen** prn ([MCG 1302](#))  
**High flow Oxygen 15 L/min** for all patients in shock, regardless of SpO<sub>2</sub> ❶
3. Maintain supine if respiratory status allows ❷
4. Establish vascular access ([MCG 1375](#))  
Large bore catheter (18G or 16G) preferred  
For patients with hypotension and clinical evidence of poor perfusion ([MCG 1355](#)) , establish IO catheter if unable to obtain peripheral venous access after 2 attempts  
  
For IO placement in alert patients administer **Lidocaine 2% 40mg (20mg/mL) slow IO push**, dose per [MCG 1317.23](#), may repeat once for infusion pain at half initial dose
5. Initiate cardiac monitoring ([MCG 1308](#))
6. Apply blanket to keep patient warm ❸
7. Consider etiology ❹  
Perform 12-lead ECG if cardiac ischemia suspected  
For patients with dysrhythmia, treat in conjunction with [TP 1212, Cardiac Dysrhythmia-Bradycardia](#) or [TP 1213, Cardiac Dysrhythmia-Tachycardia](#)  
For patients with traumatic injury, treat per [TP 1244, Traumatic Injury](#)  
For concern of overdose or toxic exposure, treat in conjunction with [TP 1241, Overdose/Poisoning/Ingestion](#)  
For patients with suspected sepsis, treat in conjunction with [TP 1204, Fever/Sepsis](#)
8. **Normal Saline 1L IV/IO rapid infusion**  
Reassess after each 250 mL increment for evidence of volume overload (pulmonary edema); stop infusion if pulmonary edema develops
9. **CONTACT BASE** for shock despite initial fluid resuscitation, and for order of additional **Normal Saline 1L IV/IO**
10. For patients with isolated hypotension without signs of poor perfusion and those who rapidly improve with or without the initial normal saline 250mL document *Hypotension (HOTN)* as Provider Impression. For patients with hypotension and poor perfusion, as well as patients with poor perfusion who do not respond to an initial Normal Saline 250mL infusion and/or require additional Normal Saline beyond 1L or Push-dose Epinephrine, document as *Shock (SHOK)*.
11. If clinical evidence of poor perfusion persists despite fluid infusion or pulmonary edema develops requiring cessation of fluid administration:  
**Push-dose Epinephrine** – mix 9mL Normal Saline with 1mL Epinephrine (0.1mg/mL) IV formulation in a 10mL syringe; administer **Push-dose Epinephrine (0.01mg/mL) 1mL IV/IO** every 1-5 minutes as needed to maintain SBP > 90mmHg until hospital arrival ❺  
**CONTACT BASE** concurrent with initial dose of **Push-dose Epinephrine**

**SPECIAL CONSIDERATIONS**

- ❶ Shock is inadequate tissue perfusion, equivalent to poor perfusion for the purposes of this protocol.
- ❷ Maintaining a patient supine improves perfusion to vital organs; raising the lower limbs does not provide additional benefit. However, not all patients will tolerate a supine position, which can further compromise respiratory function and airway patency.
- ❸ Exposure to cold increases the likelihood of bleeding complications.
- ❹ There are many etiologies of shock. The treatment protocols referenced here contain guidance on specific interventions beyond what is contained in this treatment protocol. Consider Base contact if hypotension/shock of unclear etiology
- ❺ **Push-dose Epinephrine** is appropriate for non-traumatic shock including cardiogenic shock. Additional doses beyond 10mL may need to be prepared for prolonged transports.

**Base Hospital Contact Required.**

1. Assess situation for safety; approach patient with caution and attempt verbal de-escalation ([MCG 1307](#))
2. Attain law enforcement (LE) assistance prior to approaching a patient if a weapon is visualized or the patient threatens violence ([MCG 1307](#))
3. Assess airway and initiate basic and/or advanced airway maneuvers prn ([MCG 1302](#))  
Continually assess patient's airway and ventilation status ❶
4. Administer **Oxygen** prn ([MCG 1302](#))
5. Patients with agitated delirium have confusion and extreme agitation along with any of the following: ❶
  - Diaphoresis
  - Elevated temperature, hot or flushed skin
  - Tachycardia
  - Rapid breathing

Agitated and/or combative patients without these signs/symptoms are not suffering agitated delirium, treat per the appropriate treatment protocol.

6. Apply physical restraints when indicated ([Ref. No. 838, Application of Patient Restraints](#)) ❷
7. For patients requiring medical management for agitated delirium, including patients requiring physical restraint for patient or EMS personnel safety:  
Administer **Midazolam 5mg (1mL) IM/IN/IV**  
Repeat x1 in 5 min prn, maximum total dose prior to Base contact 10mg ❸

**CONTACT BASE** for additional sedation

With Base Contact may repeat as above up to a maximum total dose of 20mg

8. Evaluate for physical trauma, if present treat in conjunction with [TP 1244, Traumatic Injury](#)
9. Establish vascular access prn ([MCG 1375](#))
10. Check blood glucose prn ❹  
If glucose < 60 mg/dL or > 400 mg/dL treat in conjunction with [TP 1203, Diabetic Emergencies](#)
11. Initiate cardiac monitoring after pharmacologic intervention ([MCG 1308](#))  
Assess for dysrhythmia or interval widening  
**CONTACT BASE** for QRS > 0.12 sec, QT > 500ms, or heart rate > 150 or < 50 to discuss need to administer **Sodium Bicarbonate 50mEq IV** ❺
12. For suspected ingestions, treat in conjunction with [TP 1241, Overdose/Poisoning/Ingestion](#)

**13. Normal saline 1L IV rapid infusion**

Reassess after each 250mL increment for evidence of volume overload (pulmonary edema); stop infusion if pulmonary edema develops

14. If patient hot to touch or has a measured fever with suspected hyperthermia (i.e., measured temperature greater than 39°C or 102°F), initiate cooling measures

**SPECIAL CONSIDERATIONS**

- ❶ Patients with Agitated/Excited Delirium are at risk for sudden cardiac arrest, often preceded by a brief, abrupt period of lethargy and decreased respirations. Careful observation of patient's activity level, vital signs, and airway are essential to patient safety. If patient develops cardiac arrest, treat in conjunction with [TP 1210, Cardiac Arrest – Non-traumatic](#)
- ❷ Use of restraints in patients with Agitated Delirium is associated with an increased risk of sudden death. Avoid using restraints in patients who do not present a threat to self or to EMS personnel. Never transport a patient in restraints in prone position.
- ❸ Patients who are agitated while in physical restraint and have the potential for injury due to the degree of agitation, should receive administration of medication by EMS personnel to reduce agitation with continued monitoring for respiratory depression, in accordance with [Ref. No. 838, Application of Patient Restraints](#).
- ❹ Agitation may be present after a seizure, or in the setting of hypo/hyperglycemia. Consider checking glucose early if the patient is a known diabetic or demonstrates clinical evidence of hypoglycemia, but only if safe to do so.
- ❺ Several drugs may cause life threatening cardiac arrhythmias after intentional or accidental overdose. These arrhythmias are often preceded by prolonged ECG intervals (particularly QRS > 0.12 sec or QT interval > 500ms). Cocaine intoxication is strongly associated with Agitated Delirium and may also produce cardiac effects similar to Tricyclic antidepressant (TCA) overdose (widened QRS progressing to malignant arrhythmia). These patients may require a large dose of sodium bicarbonate to prevent sudden cardiac death. Consult Base Physician immediately to discuss administration of Sodium Bicarbonate; may repeat x1 if QRS remains > 0.12 sec after initial sodium bicarbonate. Treat in conjunction with [TP 1241, Overdose/Poisoning/Ingestion](#)

1. Perform initial assessment of scene and patient situation for safety
2. Attain law enforcement (LE) assistance prior to approaching a patient if a weapon is visualized or the patient threatens violence or for potential assistance with application of an involuntary psychiatric hold **1 2**
3. Approach patient with caution, assess for agitation and treat accordingly including use of verbal de-escalation as needed ([MCG 1307, Care of the Psychiatric Patient with Agitation](#)) **3**
4. Assess airway and initiate basic and/or advanced airway maneuvers prn
5. Administer Oxygen prn ([MCG 1302](#))
6. Assess for agitated delirium; treat per [TP 1208, Agitated Delirium](#)
7. Evaluate for medical conditions, including those that may present with psychiatric features **4**
8. If ongoing agitation and the patient is cooperative:  
**Olanzapine 10mg Oral Disintegrating Tablet (ODT); given once** ([MCG 1317.32](#)) **5 6**

If ongoing agitation with safety risk to patient or EMS personnel **CONTACT BASE** for orders for treatment of agitation:

**Midazolam 5mg (1mL) IM/IN/IV**, repeat every 5 min prn

With Base orders may repeat as above up to a maximum total dose of 20mg **6 7**

9. Evaluate for physical trauma; if present treat in conjunction with [TP 1244, Traumatic Injury](#)
10. Establish vascular access prn ([MCG 1375](#))  
  
Check blood glucose prn **8**  
If glucose < 60 mg/dL or > 400 mg/dL treat in conjunction with [TP 1203, Diabetic Emergencies](#)
11. Initiate cardiac monitoring prn ([MCG 1308](#))  
Assess for dysrhythmia or interval widening  
**CONTACT BASE** for QRS > 0.12 sec or heart rate < 50 to discuss need to administer **Sodium Bicarbonate 50mEq (50mL) IV 9**
12. Evaluate for possible suicide attempt **10**  
For potential overdose, obtain patient and bystanders information about ingestions and treat in conjunction with [TP 1241, Overdose/Poisoning/Ingestion](#)
13. Evaluate for acute mental health and/or substance abuse crises  
Obtain relevant clinical history regarding patient's current psychiatric diagnoses, psychiatric and other medications, and any recent alcohol or recreational drug ingestions  
Obtain and document relevant third party or collateral data **11**

14. Patients who respond to verbal de-escalation or are treated only with olanzapine for agitation,

and are now cooperative, and who meet criteria in *Ref. No. 526, Behavioral/Psychiatric Crisis Patient Destination* and *Ref. 526.1 Medical Clearance Criteria Screening Tool for Psychiatric Urgent Care Center*, may be transported by Basic Life Support (BLS) or law enforcement (LE) to the MAR or to a Psychiatric Urgent Care Center.

15. Patients, evaluated by EMS personnel not yet approved for alternate destination transport, who receive olanzapine for agitation and are otherwise stable, and do not have an emergency medical condition, may be transported by BLS or law enforcement to the MAR only.



**SPECIAL CONSIDERATIONS**

- ❶ Scene safety includes the assessment for the presence of firearms or weapons, including observations and direct inquiry with the patient and any available/relevant third parties (e.g., family, caregivers, or witnesses). If a weapon is found on the scene, EMS personnel should notify all members on the scene, and contact law enforcement (LE) immediately.
- ❷ Psychiatric, including mental health and substance abuse, emergencies are medical emergencies, and as such are best treated by EMS personnel. Those patients with psychiatric emergencies presenting with agitation, violence, threats of harm to self or others, or criminal activity are best managed by an EMS and LE co-response.
- ❸ Always attempt verbal de-escalation first and avoid applying restraints to patients who do not present a threat to self or EMS personnel (*Ref. No. 838, Application of Patient Restraints*)
- ❹ Many medical causes of psychiatric symptoms exist:
  - Agitation ([see MCG 1307](#))
    - Acute pain
    - Head trauma
    - Infection
    - Encephalitis or Encephalopathy
    - Exposure to environmental toxins
    - Metabolic derangement
    - Hypoxia
    - Thyroid disease or other hormone irregularity
    - Neurological disease
    - Toxic levels of medications
    - Alcohol or recreational drugs: intoxication or withdrawal
    - Exacerbation of a primary psychiatric illness
    - Autism Spectrum Disorder
  - Psychosis
    - Delirium
    - Chronic neurological disease (dementia, seizures, parkinsonism, brain tumor)
    - Steroid use, other medication reactions
    - Alcohol or recreational drugs: intoxication or withdrawal
  - Mania
    - Delirium
    - Thyrotoxicosis
    - Alcohol or recreational drugs: intoxication or withdrawal
  - Anxiety
    - Respiratory disease
    - Cardiac disease
    - Thyroid disease
    - Toxic levels of medications
    - Alcohol or recreational drugs: intoxication or withdrawal
  - Depression
    - Reaction to medication
    - Chronic disease or chronic pain

Hormonal variations  
Subclinical / clinical hypothyroidism  
Alcohol or recreational drugs: intoxication or withdrawal

- 5 Olanzapine onset is 10-15 minutes with maximum effect at 45-60 minutes
- 6 Medications used for pharmacologic management of agitation may cause respiratory depression, and every individual who receives pharmacologic management should be continuously monitored and transported for additional clinical assessment and treatment.
- 7 Midazolam onset is 2 minutes with maximum effect at 5 minutes. The IM or IN route is preferred unless an IV has been previously established.
- 8 Agitation may be present after a seizure, or in the setting of hypo/hyperglycemia. Consider checking glucose early if the patient is a known diabetic or demonstrates clinical evidence of hypoglycemia, but only if safe to do so.
- 9 Several drugs that may cause agitation and present similarly to a psychiatric crisis may also cause life threatening cardiac arrhythmias after intentional or accidental overdose. These arrhythmias are often preceded by prolonged QRS intervals (> 0.12 sec) or bradycardia. Cocaine intoxication is strongly associated with Agitated Delirium and may also produce cardiac effects similar to Tricyclic antidepressant (TCA) overdose (widened QRS progressing to malignant arrhythmia). These patients may require a large dose of sodium bicarbonate to prevent sudden cardiac death. Consult Base Physician immediately to discuss administration of Sodium Bicarbonate; may repeat x1 if QRS remains > 0.12 sec after initial sodium bicarbonate. Treat in conjunction with [TP 1241, Overdose / Poisoning / Ingestion](#)
- 10 It is important to assess for any evidence of suicide attempt. If there is concern for overdose, ask the patient or bystanders to provide information on agents used (specifically what, when, and how much). Collect and transport any medication vials, or additional pills). This will assist in determining necessary antidote treatment and monitoring at the hospital. This information is often lost, if not obtained immediately on scene.
- 11 Patients with acute mental health or substance abuse crises may not be capable or willing to provide reliable information; therefore, it is important to obtain third party collateral information about the patient's condition (e.g., from family, caregivers, witnesses), including names and contact information for persons knowledgeable about the patient's illness, treatment and medications.

**Base Hospital Contact: Required prior to transport for all cardiac arrest patients who do not meet criteria for determination of death per [Ref. 814](#).**

1. For patients meeting [Ref. 814](#) Section I criteria for determination of death in the field – document Provider Impression as *DOA – Obvious Death*
2. Resuscitate cardiac arrest patients on scene ❶
3. Initiate chest compressions at a rate of 100-120 per min, depth 2 inches or 5 cm ❷  
Minimize interruptions in chest compressions
4. Assess airway and initiate basic and/or advanced airway maneuvers prn ❸ ❹ ([MCG 1302](#))  
Supraglottic airway (SGA), e.g., i-gel is the preferred advanced airway ❺  
Monitor waveform capnography throughout resuscitation ❻
5. Administer high-flow **Oxygen** (15L/min) ([MCG 1302](#))
6. Initiate cardiac monitoring ([MCG 1308](#))  
Briefly assess rhythm every 2 minutes, minimizing pauses, or continuously via rhythm display technology ❼

**V-FIB/PULSELESS V-TACH: ❸**

7. **Defibrillate biphasic at 200J** immediately or per manufacturer's instructions  
Repeat at each 2-minute cycle as indicated  
If persistent shockable rhythm after three shocks, change the pad position when feasible ❾
8. Establish vascular access ([MCG 1375](#))  
Establish IO if any delay in obtaining IV access
9. Begin **Epinephrine** after defibrillation x2:  
**Epinephrine (0.1mg/mL) administer 1mg (10mL) IV/IO**  
Repeat every 5 min x2 additional doses; maximum total dose 3mg ❿

**CONTACT BASE** to discuss additional epinephrine doses in cases where it may be indicated due to recurrent arrest or conversion to PEA

10. After defibrillation x3 (for refractory or recurrent V-Fib/V-Tach without pulses):  
**Amiodarone 300mg (6mL) IV/IO**  
Repeat **Amiodarone 150mg (3mL) IV/IO** x1 prn after additional defibrillation x2, maximum total dose 450mg

ASYSTOLE/PEA:

11. **Epinephrine (0.1mg/mL) administer 1mg (10mL) IV/IO**

Repeat every 5 min x2; administer first dose as early as possible; maximum total dose 3mg ⑩

**CONTACT BASE** to discuss additional epinephrine doses in cases where it may be indicated due to refractory PEA or recurrent arrest

12. Consider and treat potential causes ⑪

13. **Normal Saline 1L IV/IO rapid infusion**

Repeat x1 for persistent cardiac arrest

For suspected hypovolemia, administer both liters simultaneously

14. For patients with renal failure or other suspected hyperkalemia: ⑫

**Calcium Chloride 1gm (10mL) IV/IO**

**Sodium Bicarbonate 50mEq (50mL) IV/IO**

TERMINATION OF RESUSCITATION:

15. If resuscitative efforts are unsuccessful and the patient does not meet ALL criteria for Termination of Resuscitation in *Ref. 814, Section II.A.*, **CONTACT BASE** to consult with Base Physician ⑧

RETURN OF SPONTANEOUS CIRCULATION (ROSC): ⑫ ⑬

16. Initiate post-resuscitation care immediately to stabilize the patient prior to transport ⑬ ⑭

17. For SBP < 90 mmHg:

**Normal Saline 1L IV/IO rapid infusion**

If no response after **Normal Saline 250mL**, or worsening hypotension and/or bradycardia:

**Push-dose Epinephrine** – mix 9mL Normal Saline with 1mL Epinephrine 0.1mg/mL (IV formulation) in a 10mL syringe. Administer **Push-dose Epinephrine (0.01mg/mL) 1mL IV/IO** every 1-5 minutes as needed to maintain SBP > 90mmHg ⑯

18. Establish advanced airway prn ⑤

19. Raise head of stretcher to 30 degrees if blood pressure allows, otherwise maintain supine

20. Continue low volume ventilations at 10 per minute ⑮

21. Immediately resume CPR if patient re-arrests

22. Perform 12-lead ECG and transmit to the SRC ⑰

23. Check blood glucose  
For blood glucose < 60mg/dL  
**Dextrose 10% 125mL IV** and reassess  
If glucose remains < 60mg/dL, repeat 125mL for a total of 250mL
24. For suspected narcotic overdose: <sup>18</sup>  
**Naloxone 2-4mg (2-4mL) IV/IO/IM/IN** (For IN, 1mg per nostril or 4mg/0.1mL IN if formulation available)  
Maximum dose all routes 8mg
25. Contact **Public Health 213-989-7140** for all submersion incidents involving pools or spas after transfer of patient care in the emergency department or upon termination of resuscitation in the field (this requirement is effective 10/1/21). <sup>19</sup>

**SPECIAL CONSIDERATIONS**

- ❶ Maintaining perfusion with continuous high-quality CPR throughout resuscitation is essential to ensuring good patient outcome. Transporting the patient in cardiac arrest causes interruptions in CPR and reduces CPR quality. Patients who are resuscitated until ROSC on scene have higher neurologically intact survival.
- ❷ Chest compressions are the most important aspect of cardiac arrest resuscitation. Maintaining continuous chest compressions should take priority over any medication administration or transport.
- ❸ Hyperventilation reduces venous return and worsens patient outcomes. Both continuous and interrupted (30:2) compressions/ventilations are acceptable. Regardless of ventilation method used, ventilations should be no more frequent than 10 per minute with appropriate volume, just enough to see chest rise.
- ❹ Bag-mask ventilation (BMV) with a viral filter is the preferred method of airway management. BMV in cardiac arrest has been associated with improved patient outcomes and advanced airway placement should be deferred until after return of spontaneous circulation (ROSC) unless BMV is inadequate. If a decision is made to transport the patient in refractory cardiac arrest, consider advanced airway prior to transport.
- ❺ Supraglottic airway (SGA), e.g., i-gel is the preferred advanced airway unless specifically contraindicated. Paramedics should use judgment based on patient characteristics, circumstances, and skill level when selecting the advanced airway modality.
- ❻ ETCO<sub>2</sub> should be > 10 with a “box-shaped” waveform during effective CPR. A flat or wavy waveform or ETCO<sub>2</sub> < 10 may indicate ineffective compressions or airway obstruction. A sudden increase in ETCO<sub>2</sub> is suggestive of ROSC. The waveform can also be used to confirm ventilation rate if an advanced airway or asynchronous ventilation with continuous compressions is used.
- ❼ If you are able to observe the underlying rhythm display during compressions via rhythm display technology, do not pause for the rhythm check. In order to minimize pauses in chest compressions, pulse checks should only be performed during rhythm checks when there is an organized rhythm with signs of ROSC, such as normal capnography or sudden rise in capnography.
- ❽ Patients in persistent cardiac arrest with refractory V-Fib (persistent V-Fib after 3 unsuccessful shocks) or EMS-witnessed arrest of presumed cardiac etiology may have a good outcome despite prolonged resuscitation. For these patients, resuscitation may be continued on scene for up to 40 minutes, as long as resources allow, in order to maximize the chances for field ROSC, which is strongly associated with improved survival with good neurologic outcome. Earlier transport may be initiated for providers using mechanical compression device who are transporting a patient to a STEMI Receiving Center (SRC) for extracorporeal membrane oxygenation (ECMO) initiation.
- ❾ Changing the pad position, called vector change, from anterior-lateral to anterior-posterior or vice versa in patients who do not respond to initial defibrillation attempts, increases the chances of converting to a perfusing rhythm.
- ❿ Epinephrine may improve outcomes if given early in non-shockable rhythms, but can worsen outcomes early in shockable rhythms, where defibrillation is the preferred initial treatment. Epinephrine is most likely to be effective if it is given early and after chest compressions have begun. The likelihood of meaningful survival declines after three (3) doses of epinephrine. Resuscitation

should continue focused on quality CPR, defibrillation, and identifying reversible causes. Additional doses of epinephrine should only be administered with Base order.

- 11 Potential causes that can be treated in the field include hypoxia, hypovolemia, hyperkalemia, hypothermia, toxins, and tension pneumothorax. Hypoglycemia is a very rare cause of cardiac arrest and should not be assessed until after ROSC. If environmental hypothermia is suspected, resuscitation efforts should not be abandoned until the patient is re-warmed or after consultation with the Base Physician.
- 12 Treat suspected hyperkalemia with calcium and sodium bicarbonate as soon as possible. The sooner it is administered, the more likely it is to be effective. Flush the line between medication administration.
- 13 Approximately 40% of patients will re-arrest shortly after ROSC. Early indicators of impending re-arrest include falling EtCO<sub>2</sub> and progressive bradycardia. Anticipate this decline as the epinephrine administered during the resuscitation begins to lose effect. Fluid resuscitation, vasopressor support, and avoidance of hyperventilation are recommended to decrease the risk of re-arrest.. These steps take approximately 5 minutes and should be initiated immediately after ROSC to stabilize the patient prior to transport to reduce chances of re-arrest en route.
- 14 All cardiac arrest patients, with or without ROSC for whom the decision has been made to transport, shall be transported to the most accessible open SRC if ground transport is 30 minutes or less, as initiation of targeted temperature management and early coronary angiography in a specialty center have been shown to improve outcomes.
- 15 ETCO<sub>2</sub> can help guide your ventilation rate; target ETCO<sub>2</sub> 35-40 mmHg. Just after ROSC, the ETCO<sub>2</sub> may be transiently elevated. This will decrease appropriately with ventilation and does not require hyperventilation to normalize. Persistently elevated ETCO<sub>2</sub> and/or “sharkfin” waveform may indicate respiratory failure as cause of the cardiac arrest. Falsely low ETCO<sub>2</sub> measurements can occur if there is a leak with BMV or shock.
- 16 **Push-dose Epinephrine** is appropriate for non-traumatic shock including cardiogenic shock. Additional doses beyond 10mL may need to be prepared for prolonged transports.
- 17 An ECG with STEMI after ROSC requires notification of ECG findings to the SRC.
- 18 Narcotic overdose should be suspected in cases where there is drug paraphernalia on scene or there is a witness report. Pinpoint pupils may be present, but hypoxia during cardiac arrest can cause mydriasis (dilated pupils) instead.
- 19 EMS is assisting the Department of Public Health (DPH) in promptly investigating fatal or nonfatal drownings at public pools or spas in order to ensure safety can be verified before reopening. Contacting the on-call DPH officer will allow timely investigation of these incidents and prevent future incidents.

**Notify the closest STEMI Receiving Center (SRC) as soon as STEMI is identified. Notification shall be in accordance with [MCG 1303](#) and include immediate ECG transmission initiated prior to contact.**

1. Assess airway and initiate basic and/or advanced airway maneuvers prn ([MCG 1302](#))
2. Administer **Oxygen** prn ([MCG 1302](#))
3. Initiate cardiac monitoring ([MCG 1308](#)) ❶  
Assess cardiac rhythm and obtain 12-lead ECG ❷  
Transmit the ECG to the receiving SRC if STEMI is suspected ([MCG 1303](#))
4. For patients with dysrhythmias, treat in conjunction with [TP 1212, Bradycardia](#) or [TP 1213, Tachycardia](#)
5. **Aspirin 325mg chewable tablets PO** if alert ❸
6. For chest pain after 12-lead ECG:  
**Nitroglycerin 0.4mg SL** prn ❹ ❺  
Repeat every 5 min prn x2, total of 3 doses  
Hold if SBP < 100mmHg or patient has taken sexually enhancing medication within 48hrs
7. Establish vascular access ([MCG 1375](#))
8. For persistent chest pain after, or contraindication to, nitroglycerin: refer to [MCG 1345, Pain Management](#)
9. For nausea or vomiting:  
**Ondansetron 4mg ODT/IV/IM**, may repeat x1 in 15 min prn
10. For poor perfusion ([MCG 1355](#)):  
**Normal Saline 1L IV rapid infusion**  
Reassess after each 250 mL increment for evidence of volume overload (pulmonary edema); stop infusion if pulmonary edema develops  
  
For persistent poor perfusion, treat in conjunction with [TP 1207, Shock/Hypotension](#)



**SPECIAL CONSIDERATIONS**

- ❶ Patients may have a myocardial infarction (MI) with or without ST elevations on the ECG. You should review and interpret the ECG; the software interpretation is not always accurate. Include your impression of the patient and interpretation of the ECG when discussing destination decision with the base. Patients with ST elevation myocardial infarction (STEMI) require emergent treatment with percutaneous coronary intervention (PCI) in the catheterization lab to improve survival, so they require field routing directly to a STEMI center (SRC). If artifact inhibits your ability to interpret the ECG, the software cannot read it either. ECGs of such poor quality as to inhibit interpretation should not be used to determine destination and should be repeated.
- ❷ Obtain the ECG as soon as possible with initial vital signs. For patients in whom you have a high clinical suspicion for STEMI and the initial ECG does not meet STEMI criteria, you should repeat the ECG prior to transport and at any point that the patient's clinical status changes. Repeating the ECG increases your chances of detecting an evolving STEMI. Consider repeating the ECG in cases where you have a low clinical suspicion and the initial ECG software interpretation is STEMI, particularly if there is artifact present that may affect the interpretation.
- ❸ Aspirin is the most important medication for patients with acute myocardial infarction to improve outcomes and should be administered as soon as possible. All patients with cardiac chest pain should receive aspirin unless contraindicated due to active gastrointestinal bleeding or allergy, even if they already took aspirin at home or are prescribed anticoagulant medications. While there are other causes of chest pain that can present similarly to an MI, including aortic dissection, these causes are rare and the benefit of aspirin for patients with MI outweighs the risks of administration.
- ❹ Nitroglycerin can cause a severe drop in blood pressure in some patients and, while useful for treatment of pain, it has not been shown to improve survival. Use caution in patients with borderline or relative hypotension (patients with history of hypertension or taking antihypertensive medications and SBP < 110) and/or patients with abnormal heart rate < 50 or > 120. It is acceptable to hold nitroglycerin in these patients. Inferior MI alone is not a contraindication to nitroglycerin.
- ❺ Morphine or fentanyl is preferred for the treatment of cardiac chest pain that does not respond to nitroglycerin or when nitroglycerin is contraindicated: do not administer ketorolac. Morphine or fentanyl is also preferred over nitroglycerin to treat pain in patients with suspected aortic dissection. The classic presentation of acute aortic dissection is acute onset "tearing" chest pain radiating to the back. Other findings that raise concern for aortic dissection are chest pain associated with new focal neurologic abnormalities or with a difference in SBP of 20mmHg or more between arms. The primary treatment goal in the alert patient is to decrease heart rate by alleviating pain and anxiety. These patients are most often hypertensive. Treat hypotension only if SBP is < 90mmHg in both arms or if patient has other signs of poor perfusion.

**Base Hospital Contact: Required for all patients with symptomatic bradycardia.**

1. Assess airway and initiate basic and/or advanced airway maneuvers prn ([MCG 1302](#))
2. Administer **Oxygen** prn ([MCG 1302](#))
3. Initiate cardiac monitoring ([MCG 1308](#))  
Assess cardiac rhythm and obtain 12-lead ECG
4. If cardiac chest pain/STEMI suspected as cause of bradycardia, treat in conjunction with [TP 1211, Cardiac Chest Pain](#)
5. Maintain supine for patients with signs of poor perfusion, if respiratory status allows
6. Establish vascular access ([MCG 1375](#))  
Do not delay transcutaneous pacing (TCP) if indicated for vascular access
7. For suspected hyperkalemia ❶  
**Calcium Chloride 1gm (10mL) slow IV/IO push**, may repeat x1 for persistent symptoms  
**Albuterol 5mg (6mL) via neb**, repeat continuously until hospital arrival  
**CONTACT BASE** to obtain order for **Sodium Bicarbonate 50mEq (50mL) slow IVP** ❷
8. For poor perfusion ([MCG 1355](#)):  
**Atropine 1mg (10mL) IV/IO push**, repeat every 3-5 min prn, maximum total dose 3mg  
If IV cannot be rapidly established or if HR  $\leq$  40bpm in 2<sup>nd</sup> degree type II or 3<sup>rd</sup> degree heart block, proceed immediately to transcutaneous pacing ❸  
If no improvement after initial dose of **Atropine**, proceed to TCP
9. **TCP** for HR  $\leq$  40 with continued poor perfusion, initiate TCP as per [MCG 1365](#) ❹  
**CONTACT BASE** concurrent with initiation of TCP  
  
If TCP will be utilized for the awake patient, consider sedation and analgesia  
For sedation:  
**Midazolam 5mg (1mL) slow IV/IO push or IM/IN**  
May repeat in 5 min prn x1, maximum total dose prior to Base contact 10mg  
For pain management: refer to [MCG 1345, Pain Management](#)  
  
**CONTACT BASE** for additional sedation and/or pain management after maximum dose administered: May repeat as above to a maximum dose of Midazolam 20 mg, and Fentanyl 250mcg or Morphine 20mg
10. For signs of poor perfusion with HR > 40:  
**CONTACT BASE** to discuss appropriateness of TCP
11. For persistent poor perfusion after initiating TCP:  
**CONTACT BASE** to obtain order for **Normal Saline 1L IV/IO rapid infusion** and/or **Push-dose Epinephrine**

While infusing **Normal Saline**, reassess after each 250 mL increment for evidence of volume overload (pulmonary edema); stop infusion if pulmonary edema develops

**Push-dose Epinephrine** – mix 9mL Normal Saline with 1mL Epinephrine 0.1mg/mL (IV formulation) in a 10mL syringe. Administer **Push-dose Epinephrine (0.01mg/mL) 1mL IV/IO** every 1-5 min as needed to maintain SBP > 90mmHg ⑤

12. For suspected overdose, treat in conjunction with [TP 1241, Overdose/Poisoning/Ingestion](#) ⑥
13. For nausea or vomiting:  
**Ondansetron 4mg ODT/IV/IM**, may repeat x1 in 15 min prn ⑦

**SPECIAL CONSIDERATIONS**

- ❶ Patients at increased risk for hyperkalemia include those with history or clinical evidence of renal failure, missed dialysis or patients taking potassium-sparing diuretics such as spironolactone. ECG signs of hyperkalemia included peaked T-waves, wide QRS, bradycardia, long PR interval and absent P-waves.
- ❷ Sodium Bicarbonate is another rapid-acting treatment for suspected hyperkalemia. Due to the risk of pulmonary edema, contact Base to discuss administration.
- ❸ In patients with 2<sup>nd</sup> degree type II or 3<sup>rd</sup> degree heart block, atropine is unlikely to produce clinical improvement, therefore TCP should not be delayed for atropine administration.
- ❹ Electrical capture can occur without mechanical capture. Assess for electrical capture by reviewing the rhythm strip for a QRS complex and a T wave after each pacer spike. Assess for mechanical capture by palpating a pulse with each QRS complex.
- ❺ **Push-dose Epinephrine** is appropriate for non-traumatic shock including cardiogenic shock. Additional doses beyond 10mL may need to be prepared for prolonged transports.
- ❻ Consider calcium channel blocker and beta blocker overdose in patients with bradycardia and hypotension. Ask about potential exposures including medications in the home. Hyperglycemia is a common finding with calcium channel blocker overdose.
- ❼ Nausea and vomiting cause vagal stimulation, which can worsen bradycardia. Ondansetron may be administered to reduce potential for nausea or vomiting.

**Base Hospital Contact: Required for all patients with wide complex tachycardia.**

1. Assess airway and initiate basic and/or advanced airway maneuvers prn ([MCG 1302](#))
2. Administer **Oxygen** prn ([MCG 1302](#))
3. Initiate cardiac monitoring ([MCG 1308](#))  
Assess cardiac rhythm and obtain 12-lead ECG
4. If cardiac chest pain/STEMI suspected, treat in conjunction with [TP 1211, Cardiac Chest Pain](#)
5. Maintain supine for patients with signs of poor perfusion ([MCG 1355](#)), if respiratory status allows
6. Establish vascular access prn ([MCG 1375](#))
7. Advanced airway prn ([MCG 1302](#))

#### SINUS TACHYCARDIA ①

8. Consider possible underlying cause and treat as per applicable protocol ②
9. For sinus tachycardia of unclear etiology and suspected hypovolemia or signs of poor perfusion:  
**Normal Saline 1L IV/IO rapid infusion**  
Reassess after each 250 mL increment for evidence of volume overload (pulmonary edema); stop infusion if pulmonary edema develops  
  
For persistent poor perfusion, treat in conjunction with [TP 1207, Shock/Hypotension](#)  
  
Continue to assess for underlying cause ②

#### SVT – NARROW COMPLEX $\geq 150$ bpm ③

10. For adequate perfusion:  
Attempt **Valsalva maneuver**  
  
**Adenosine 6 or 12mg (2 or 4mL) rapid IV push ④**  
Immediately follow with Normal Saline rapid IV flush  
  
If no conversion:  
**Adenosine 12mg (4mL) rapid IV push ④**  
Immediately follow with Normal Saline rapid IV flush
11. For alert patients with poor perfusion:  
**Adenosine 12mg (4mL) rapid IV push ④**  
Immediately follow with Normal Saline rapid IV flush, may repeat x1 if persistent SVT

**CONTACT BASE** if no conversion after adenosine or if adenosine contraindicated to discuss order for **Synchronized Cardioversion at 120J**

12. For poor perfusion with ALOC: ⑤  
**Synchronized Cardioversion at 120J**, may repeat x2 with escalating doses of 150J followed by 200J, or per manufacturer's guidelines  
**CONTACT BASE** concurrent with initial cardioversion

Consider sedation prior to cardioversion:

**Midazolam 5mg (1mL) slow IV/IO push or IM/IN**

May repeat in 5min prn X1, maximum total dose prior to Base contact 10mg

**CONTACT BASE** for additional sedation after maximum dose administered:  
May repeat as above to a maximum total dose of Midazolam 20mg

#### ATRIAL FIBRILLATION

13. Consider possible underlying cause and treat as per applicable protocol ②
14. For poor perfusion:  
**CONTACT BASE** for treatment guidance ⑥

#### WIDE COMPLEX (WCT) – REGULAR/MONOMORPHIC

15. For adequate perfusion:  
**Adenosine 6 or 12mg (2 or 4mL) rapid IV push** ④ ⑦  
Immediately follow with Normal Saline rapid IV flush

If WCT persists:

**Adenosine 12mg (4mL) rapid IV push** ④ ⑦

Immediately follow with Normal Saline rapid IV flush

16. For alert patients poor perfusion:  
If vascular access available, **Adenosine 12mg (4mL) rapid IV push** ④ ⑦  
Immediately follow with Normal Saline rapid IV flush  
May repeat x1 for persistent WCT if mental status normal, or proceed directly to cardioversion

If no conversion with adenosine or no vascular access:

**Synchronized Cardioversion at 120J**, may repeat x2 with escalating doses of 150J followed by 200J, or per manufacturer's guidelines

**CONTACT BASE** concurrent with cardioversion

Consider sedation prior to cardioversion:

**Midazolam 5mg (1mL) slow IV/IO push or IM/IN**

May repeat in 5min prn X1, maximum total dose prior to Base contact 10mg

**CONTACT BASE** for additional sedation after maximum dose administered:  
May repeat as above to a maximum total dose of Midazolam 20mg

17. For poor perfusion with ALOC ⑤

**Synchronized Cardioversion at 120J**, may repeat x2 with escalating doses of 150J followed by 200J, or per manufacturer's guidelines

**CONTACT BASE** concurrent with cardioversion

Consider sedation prior to cardioversion:

**Midazolam 5mg (1mL) slow IV/IO push or IM/IN**

May repeat in 5min prn X1, maximum total dose prior to Base contact 10mg

**CONTACT BASE** for additional sedation after maximum dose administered:

May repeat as above to a maximum total dose of Midazolam 20mg

WIDE-COMPLEX – IRREGULAR

18. For adequate perfusion:

**CONTACT BASE** for treatment guidance ⑦

19. For poor perfusion:

**Synchronized Cardioversion at 120J**, may repeat x2 with escalating doses of 150J followed by 200J, or per manufacturer's guidelines

**CONTACT BASE** concurrent with cardioversion ⑦

Consider sedation prior to cardioversion:

**Midazolam 5mg (1mL) slow IV/IO push or IM/IN**

May repeat in 5min prn X1, maximum total dose prior to Base contact 10mg

**CONTACT BASE** for additional sedation after maximum dose administered:

May repeat as above to a maximum total dose of Midazolam 20mg

**SPECIAL CONSIDERATIONS**

- ① Treatment of sinus tachycardia should be directed at the underlying cause. Sinus tachycardia due to conditions such as hypovolemia, sepsis, or GI bleed can present as a wide complex tachycardia in patients with left or right bundle branch blocks. P waves should be visible before each QRS and a typical bundle branch block pattern noted on the ECG.
- ② Tachycardia is often a response to an underlying illness including but not limited to: sepsis, GI bleeding, respiratory distress, anaphylaxis, hyperthermia, and toxic ingestions. Sinus tachycardia may be a manifestation of pain and/or anxiety, but these should not be considered until other, more dangerous etiologies, are evaluated.
- ③ Sinus tachycardia can occur at a rate above 150 bpm. Sinus tachycardia does not respond to Adenosine, so it should not be administered, and treatment should be directed at the underlying cause.
- ④ Adenosine is contraindicated in patients with history of Wolf-Parkinson-White (WPW) Syndrome and atrial fibrillation, Sick Sinus Syndrome, or heart transplant; or if the patient's medications include carbamazepine (Tegretol) for seizure disorder. In these patients, adenosine may cause degeneration to a fatal dysrhythmia.
- ⑤ Altered level of consciousness (ALOC) refers to a decrease or depressed level of consciousness compared to the patient's baseline (secondary to shock or hypoperfusion).
- ⑥ Patients with atrial fibrillation (or flutter) have abnormal impulses generated by the atria. Adenosine is not effective to slow or terminate the rhythm and, in the presence of Wolf-Parkinson-White (WPW) Syndrome, can cause ventricular fibrillation. Further, these rhythms cause abnormal contraction of the atria that can lead to clot formation. Cardioversion increases the risk for stroke as these clots can be forced out of the atria into circulation after cardioversion. Consider and treat underlying causes of rapid atrial fibrillation (e.g. dehydration, sepsis) prior to cardioversion. Cardioversion is appropriate for cases of acute onset (<48 hours) atrial fibrillation with hemodynamic instability and without other apparent cause.
- ⑦ Regular monomorphic wide complex tachycardia may be supraventricular rhythm with a bundle branch block or aberrancy. In this case, Adenosine may convert the rhythm to sinus and AHA guidelines recommend its use for regular monomorphic wide complex tachycardia. Adenosine should not be used for irregular wide complex tachycardia, because this may represent atrial fibrillation with WPW and lead to degeneration to a fatal dysrhythmia (see ④ above).



**Base Hospital Contact: Required for severe respiratory distress unresponsive or not amenable to CPAP.**

1. Assess airway and initiate basic and advanced airway maneuvers prn ([MCG 1302](#))
2. Maintain patient in position of comfort ❶
3. Administer **Oxygen** prn ([MCG 1302](#))  
**High flow Oxygen 15 L/min** for patients with impending respiratory failure
4. CPAP for all alert patients with moderate or severe respiratory distress, SBP  $\geq$  90mmHg, and no other contraindications ([MCG 1315](#)) ❷
5. Initiate cardiac monitoring ([MCG 1308](#))
6. For associated chest pain and/or suspected cardiac ischemia ❸  
Perform 12-lead ECG  
**Aspirin 325mg chewable tablets PO** if alert  
Treat in conjunction with [TP 1211, Cardiac Chest Pain](#)
7. Establish vascular access ([MCG 1375](#))
8. For SBP > 100 with no sexually enhancing drugs within 48 hours: ❹  
**Nitroglycerin, 0.4mg SL**, for SBP  $\geq$  100mmHg  
**0.8mg SL**, for SBP  $\geq$  150mmHg  
**1.2mg SL**, for SBP  $\geq$  200mmHg  
Repeat every 3-5min prn x2 for persistent dyspnea  
Assess blood pressure prior to each administration and determine subsequent dose based on SBP as listed above  
Hold Nitroglycerin if SBP < 100mmHg ❺
9. If wheezing despite CPAP  
**Albuterol 5mg (6mL) via neb**  
May be given simultaneously with nitroglycerin based on clinical assessment of patient  
If patient reports history of COPD or asthma, treat in conjunction with [TP 1237, Respiratory Distress](#)
10. For patients who progress to respiratory failure and/or shock  
Assist ventilations and **CONTACT BASE**  
Treat in conjunction with [TP 1207, Shock/Hypotension](#)

**SPECIAL CONSIDERATIONS**

- ❶ Fowler's or Semi-Fowler's positioning is likely to be most comfortable for awake patients with pulmonary edema.
- ❷ Early use of CPAP has been shown to decrease hospital length of stay and risk of intubation for patients with pulmonary edema. Unless contraindicated, it should be initiated for all patients in moderate or severe respiratory distress from pulmonary edema regardless of SpO<sub>2</sub>.

Contraindications: refer to [MCG 1315](#)

- ❸ Cardiac ischemia should be suspected in patients complaining of chest pain or with new onset pulmonary edema without history of CHF/Heart failure. CHF is a common cause of ECG abnormalities that do not require transport to a SRC.
- ❹ In patients with recent use of sexually enhancing drugs, or systolic murmur and pulmonary edema due to critical aortic stenosis, nitroglycerin may precipitate significant hypotension and cardiovascular collapse. If patient with systolic murmur on exam, consider discussion with Base Physician prior to NTG administration.
- ❺ Sudden significant decreases in blood pressure may cause stroke symptoms in patients with previously uncontrolled hypertension. If blood pressure decreases > 40mmHg or patient develops neurologic abnormalities (stroke symptoms or ALOC) after nitroglycerin, hold additional doses. Reassess blood pressure after 5 minutes.

**Base Hospital Contact Required. ①**

1. Assess the mother's airway and initiate basic and/or advanced airway maneuvers prn ([MCG 1302](#))
2. Administer **Oxygen** prn ([MCG 1302](#))
3. Establish vascular access prn ([MCG 1375](#))  
Vascular access should not take precedence over controlled delivery or emergency transport
4. Place mother in Semi-Fowler's or Lateral Sims position
5. If mother has the urge to push or crowning is evident, prepare for delivery  
Prepare OB kit
6. If crown is showing with amniotic sac intact, pinch the sac and twist the membrane to rupture
7. If maternal hypertension, breech presentation, shoulder dystocia, or prolapsed or nuchal cord treat in conjunction with [TP 1217, Pregnancy Complication](#)
8. Once delivered, dry newborn with a towel, clamp and cut the cord ②  
Treat newborn per [TP 1216-P, Newborn/Neonate Resuscitation](#)
9. For management of the placenta:  
The placenta may deliver spontaneously; do not pull on cord but allow placenta to separate naturally  
Place placenta in plastic bag from the OB kit and bring to the hospital with the mother
10. Massage the mother's lower abdomen (fundus) after the placenta delivers  
For post-partum hemorrhage, treat in conjunction with [TP 1217, Pregnancy Complication](#) ③
11. For signs of poor perfusion ([MCG 1355](#)) in mother:  
**Normal Saline 1L IV rapid infusion**  
Reassess after each 250 mL increment for evidence of volume overload (pulmonary edema); stop infusion if pulmonary edema develops  
**CONTACT BASE** for persistent poor perfusion to obtain order for additional **Normal Saline 1L IV**
12. If delivery occurs in the field, determine destination based on stated or estimated gestational age and **CONTACT BASE**: ①  
Transport both patients to a Perinatal Center with an EDAP if newborn > 34 weeks gestation  
Transport both patients to a Perinatal Center with an EDAP and a NICU if ≤ 34 weeks gestation

**SPECIAL CONSIDERATIONS**

- ❶ Any delivery after the first trimester (12 weeks) should be considered childbirth for the purposes of this treatment protocol and paramedics should contact Base to discuss the management and transport. In general, delivery prior to 20 weeks gestation is nonviable and does not require resuscitation. However, dates can be incorrectly estimated, therefore, Base Contact is strongly encouraged. Any *potentially viable birth* should be resuscitated in the field and transported to a perinatal center that is also an EDAP (with a NICU if  $\leq 34$  weeks gestation). Births prior to 20 weeks do not necessarily require specialty center care and can be transported to the MAR.
- ❷ Delay in clamping and cutting the cord for up to 30 to 60 seconds is recommended unless newborn needs immediate resuscitation
- ❸ Some bleeding is normal during delivery, typically up to 500mL. Bleeding is reduced with fundal massage after placental delivery, which promotes contraction of the uterus. Post-partum hemorrhage is defined as blood loss with signs of poor perfusion and/or cumulative blood loss  $\geq 1000\text{mL}$ .

**Base Hospital Contact: Required for vaginal bleeding at > 20 weeks pregnancy or newborn delivery. ①②③**

1. Do not delay transport for treatment if suspected eclampsia; Manage delivery en route
2. Assess airway and initiate basic and/or advanced airway maneuvers prn ([MCG 1302](#))
3. Administer **Oxygen** prn ([MCG 1302](#))
4. Establish vascular access ([MCG 1375](#))  
Vascular access should not take precedence over controlled delivery or emergency transport
5. For poor perfusion ([MCG 1355](#)):  
**Normal Saline 1L IV rapid infusion**  
Reassess after each 250 mL increment for evidence of volume overload (pulmonary edema); stop infusion if pulmonary edema develops  
**CONTACT BASE** for persistent poor perfusion to obtain order for additional **Normal Saline 1L IV**
6. If crown is showing with amniotic sac intact, pinch sac and twist the membrane to rupture

#### BREECH DELIVERY

7. Support presenting part and allow newborn to deliver
8. If head does not deliver, place gloved hand inside mother and form “V” formed with fingers by baby’s face to provide an opening for the airway

#### PROLAPSED CORD

9. Manually elevate presenting fetal part off the umbilical cord; maintain elevation of the presenting part until transfer of care ④
10. Wrap cord with moist gauze

#### NUCHAL CORD

11. If nuchal cord is loose attempt slipping the cord over the head prior to delivery
12. If the cord is too tight to easily slip over the head, clamp the cord in two places 1 inch apart and cut the cord with scissors

#### SHOULDER DYSTOCIA

13. Perform McRoberts maneuver with suprapubic pressure in order to deliver the anterior shoulder ⑤

MATERNAL HYPERTENSION (BP  $\geq$  140/90mmHg) / ECLAMPSIA 5

14. Place mother in left lateral decubitus position
15. For seizure, treat in conjunction with *TP 1231, Seizure*

POST-PARTUM HEMORRHAGE 6

18. Massage the mother's lower abdomen (fundal massage)
19. Establish 2 IVs, large bore catheter (16g or 18g) preferred
20. Administer **Normal Saline 1L IV rapid infusion**  
Repeat x1 for ongoing hemorrhage and/or poor perfusion  
Reassess after each 250mL increment for evidence of volume overload (pulmonary edema); stop infusion if pulmonary edema develops
21. For patients within 3 hours post delivery with ongoing bleeding and one or more of the following:  
Systolic blood pressure (SBP) <90 mmHg, OR  
Heart rate > SBP, OR  
Estimated blood loss >500mL

**Tranexamic Acid (TXA) 1 gram in 50 or 100mL Normal Saline IV/IO, infuse over 10 minutes**

**SPECIAL CONSIDERATIONS**

- ❶ This protocol was intended for complications of pregnancy at the time of delivery; if patient is known to be pregnant and has complaints not associated with labor or delivery treat per [TP 1202, General Medical](#) or most applicable protocol.
- ❷ If the patient has vaginal bleeding associated with known pregnancy > 20 weeks, Contact Base and communicate signs and symptoms so that the receiving hospital can pre-notify OB consultants as needed.
- ❸ Any delivery after the first trimester (12 weeks) should be considered childbirth for the purposes of this treatment protocol and paramedics should contact Base to discuss the management and transport. In general, delivery prior to 20 weeks gestation is nonviable and does not require resuscitation. However, dates can be incorrectly estimated, therefore, Base Contact is strongly encouraged. Any *potentially viable birth* should be resuscitated in the field and transported to a perinatal center that is also an EDAP (with a NICU if ≤34 weeks gestation). Births prior to 20 weeks do not necessarily require specialty center care and can be transported to the MAR.
- ❹ In addition to manually elevating the presenting part from the umbilical cord, placing the patient in Trendelenburg position during transport can help to elevate the presenting part off the cord to maintain blood flow to the fetus. Do not attempt to push a prolapsed cord back in.
- ❺ Shoulder dystocia is inability to deliver the anterior shoulder, which usually occurs in large newborns. If delivery fails to progress after head delivers, hyperflex mother's hips tightly in knee to chest position (McRoberts maneuver) and apply firm suprapubic pressure in attempt to dislodge anterior shoulder.
- ❻ HTN in a pregnant or recently post-partum patient is a sign of pre-eclampsia, which required immediate emergency and obstetric care. Additional signs of pre-eclampsia are edema and headache which can progress to seizures (eclampsia). Patients who are ≥ 20 weeks pregnant or ≤ 6 weeks post-partum with hypertension (BP ≥ 140/90mmHg) should be transported to a Perinatal Center for evaluation.
- ❼ Some bleeding is normal during delivery, typically up to 500mL. Bleeding is reduced with fundal massage after placental delivery, which promotes contraction of the uterus. Post-partum hemorrhage is typically defined as blood loss with signs of poor perfusion and/or cumulative blood loss ≥1000mLs, however, if despite fundal massage the estimated blood loss is > 500 mLs and there is ongoing hemorrhage, initiate TXA and fluids concurrently.

1. Assess airway and initiate basic and/or advanced airway maneuvers prn ([MCG 1302](#))
2. Administer **Oxygen** prn ([MCG 1302](#))
3. Establish vascular access prn ([MCG 1375](#))
4. Monitor frequency and duration of contractions ❶
5. If delivery is imminent ❷, treat per [TP 1215, Childbirth \(Mother\)](#)
6. If breech presentation, shoulder dystocia, nuchal cord or prolapsed cord treat per [TP 1215, Childbirth \(Mother\)](#) in conjunction with [TP 1217, Pregnancy Complication](#)
7. Opiate and Ketorolac analgesia is contraindicated ([MCG 1345](#))



**SPECIAL CONSIDERATIONS**

- ❶ The more frequent the contractions, the closer the patient is to delivery; if the contractions are < 2 minutes apart or last > 60 seconds prepare for delivery. Women who have had prior vaginal deliveries can progress through labor very rapidly.
- ❷ Crowning, urge to push, or presentation of a presenting part indicate imminent delivery.

**Base Hospital Contact: Required for anaphylaxis.**

1. Assess airway and initiate basic and/or advanced airway maneuvers prn (*MCG 1302*)  
Continually assess patient's airway and ventilation status
2. Administer **Oxygen** prn (*MCG 1302*)  
**High flow Oxygen 15 L/min** for anaphylaxis with poor perfusion or airway compromise
3. Initiate cardiac monitoring prn (*MCG 1308*)
4. For anaphylaxis:  
**Epinephrine (1mg/mL) administer 0.5mg (0.5mL) IM** in the lateral thigh ❶  
**CONTACT BASE:** Repeat as above every 10 min x2 prn persistent symptoms, maximum total 3 doses
5. Establish vascular access prn (*MCG 1375*)  
Vascular access for all patients with anaphylaxis
6. For poor perfusion (*MCG 1355*):  
**Normal Saline 1L IV rapid infusion**  
Reassess after each 250 mL increment for evidence of volume overload (pulmonary edema); stop infusion if pulmonary edema develops.
7. For persistent poor perfusion after initial 250mL Normal Saline (anaphylactic shock):  
Continue **Normal Saline 1L IV rapid infusion**  
**Push-dose Epinephrine** – mix 9mL Normal Saline with 1mL Epinephrine (0.1mg/kg) IV formulations in a 10mL syringe; administer **Push-dose Epinephrine (0.01mg/mL) 1mL IV/IO** every 1-5 minutes as needed to maintain SBP > 90 mmHg until hospital arrival  
  
**CONTACT BASE** concurrent with initial dose of **Push-dose Epinephrine**  
  
Treat in conjunction with *TP 1207, Shock/Hypotension*
8. If wheezing: ❷  
**Albuterol 5mg (6mL) via neb or 4 puffs via MDI**  
Repeat x2 prn, maximum total prior to Base contact 3 doses
9. For itching/hives:  
**Diphenhydramine 50mg (1mL) slow IV push** one time ❸  
If unable to obtain venous access, **Diphenhydramine 50mg (1mL) deep IM**

**SPECIAL CONSIDERATIONS**

- ❶ Epinephrine is the drug of choice for allergic reactions with any one of the following: angioedema, respiratory compromise or poor perfusion. It should be given IM into a large muscle group, lateral thigh preferred or alternatively the lateral gluteus.
- ❷ Patients with wheezing due to allergic reaction should be treated with Epinephrine IM. Albuterol may be administered in addition to Epinephrine IM if wheezing persists.
- ❸ Diphenhydramine does not treat anaphylaxis. For patients in anaphylaxis, Epinephrine administration is the first priority. Diphenhydramine may be considered once other treatments are complete or in stable patients with discomfort for isolated hives.

**Base Hospital Contact: Required for burns meeting Trauma Center criteria, 2<sup>nd</sup> or 3<sup>rd</sup> degree burns ≥ 20% TBSA.**

1. Assess airway and initiate basic and advanced airway maneuvers prn ([MCG 1302](#))  
If evidence of inhalation injury, treat in conjunction with [TP 1236, Inhalation Injury](#)
2. Administer **Oxygen** prn ([MCG 1302](#))  
If carbon monoxide exposure suspected, provide **high flow Oxygen 15 L/min** and treat in conjunction with [TP 1238, Carbon Monoxide Poisoning](#) ①
3. Assess for signs of trauma  
If traumatic injury suspected, treat in conjunction with [TP 1244, Traumatic Injury](#)
4. Remove jewelry and clothing from involved area
5. Apply blanket to keep patient warm
6. For ELECTRICAL burns:  
Cover with dry dressing or sheet, treat in conjunction with [TP 1221, Electrocutation](#)
7. For THERMAL burns:  
Cover with dry dressing or sheet  
Consider cooling with water for burns isolated to less than 5% BSA
8. For CHEMICAL burns:  
If dry, brush and flush with copious amounts of water  
If liquid, flush with large amounts of water ②  
If eye involvement, irrigate eye with **Normal Saline 1L** during transport; allow patient to remove contact lenses if possible, treat in conjunction with [TP 1240, HAZMAT](#)
9. Establish vascular access prn ([MCG 1375](#))  
For IO placement in alert patients administer, **Lidocaine 2% 40mg (20mg/mL) slow IO push**, may repeat once for infusion pain at half initial dose
10. For partial/full thickness burn > 10% body surface area or poor perfusion ([MCG 1355](#)):  
**Normal Saline 1L IV/IO rapid infusion**  
Reassess after each 250 mL increment for evidence of volume overload (pulmonary edema); stop infusion if pulmonary edema develops  
**CONTACT BASE** for persistent poor perfusion to obtain order for additional **Normal Saline 1L IV/IO**
11. Elevate burned extremities as able for comfort
12. For pain management: refer to [MCG 1345, Pain Management](#)

**SPECIAL CONSIDERATIONS**

- ❶ Consider potential for carbon monoxide and/or cyanide toxicity in closed space fires. Pulse oximetry is not accurate in carbon monoxide poisoning ([TP 1238, Carbon Monoxide Poisoning](#))
- ❷ Observe for hypothermia; cooling large surface area burns (greater than 10% body surface area) may result in hypothermia.

1. Ensure source of electricity is turned off
2. Assess airway and initiate basic and/or advanced airway maneuvers prn ([MCG 1302](#))
3. For cardiac arrest, treat per [TP 1210 Cardiac Arrest](#) ②
4. Administer **Oxygen** prn ([MCG 1302](#))
5. Initiate cardiac monitoring ([MCG 1308](#))  
Perform 12-Lead ECG prn  
If cardiac dysrhythmia present, treat in conjunction with [TP 1212, Bradycardia](#) or [TP 1213, Tachycardia](#) ③
6. Assess for signs of trauma  
If traumatic injury suspected, treat in conjunction with [TP 1244, Traumatic Injury](#)
7. Remove jewelry and clothing from involved areas
8. Establish vascular access prn ([MCG 1375](#))
9. For burns, treat in conjunction with [TP 1220, Burns](#)  
Cover affected areas with dry dressing or sheet ④
10. For poor perfusion ([MCG 1355](#)):  
**Normal Saline 1L IV rapid infusion**  
Reassess after each 250 mL increment for evidence of volume overload (pulmonary edema); stop infusion if pulmonary edema develops  
  
For persistent poor perfusion, treat in conjunction with [TP 1207, Shock/Hypotension](#)
11. For pain management: refer to [MCG 1345, Pain Management](#)
12. For nausea or vomiting:  
**Ondansetron 4mg ODT/IV/IM**, May repeat x1 in 15 min prn

**SPECIAL CONSIDERATIONS**

- ❶ Do not touch the patient unless you have removed the source of the electricity. An electrical current can be conducted through water and skin. Ensure that area surrounding the patient is dry before approaching him/her.
- ❷ For young, healthy patients, especially in lightning injuries, consider prolonged cardio-pulmonary resuscitation.
- ❸ Electrocutation may result in ventricular tachycardia, ventricular fibrillation, asystole or other dysrhythmias. However, if the patient is in a regular rhythm on evaluation, they are unlikely to develop a dysrhythmia.
- ❹ Superficial skin findings do not correlate with the severity of an electrical burn. As the electrical current passes through tissue, it can cause more damage than is superficially present.

1. Assess airway and initiate basic and/or advanced airway maneuvers prn ([MCG 1302](#))
2. Administer **Oxygen** prn ([MCG 1302](#))
3. Initiate cardiac monitoring ([MCG 1308](#))  
For patients with dysrhythmias, treat in conjunction with [TP 1212, Bradycardia](#) or [TP 1213, Tachycardia](#)
4. Provide cooling measures ❶
5. For patients with fever due to presumed infection/sepsis, treat per [TP 1204, Fever/Sepsis](#) ❷
6. Establish vascular access prn ([MCG 1375](#))
7. For altered level of consciousness, treat in conjunction with [TP 1229, ALOC](#)
8. For adequate perfusion and normal mental status, encourage oral hydration
9. For poor perfusion ([MCG 1355](#)) or if unable to take fluids orally:  
**Normal Saline 1L IV rapid infusion**  
Reassess after each 250 mL increment for evidence of volume overload (pulmonary edema); stop infusion if pulmonary edema develops  
  
For persistent poor perfusion, treat in conjunction with [TP 1207, Shock/Hypotension](#)



**SPECIAL CONSIDERATIONS**

- ❶ Cooling measures should include moving patient to a cooler environment (e.g. ambulance with air conditioner), removing clothing, applying wet towels, and fanning/blowing cool air from air conditioning vents.
- ❷ This protocol is intended for hyperthermia due to environmental exposures and toxic ingestions.

1. Assess airway and initiate basic and/or advance airway maneuvers prn ([MCG 1302](#))
2. Administer **Oxygen** prn ([MCG 1302](#))
3. Initiate cardiac monitoring ([MCG 1308](#))  
For patients with dysrhythmias, treat in conjunction with [TP 1212, Bradycardia](#) or [TP 1213, Tachycardia](#)
4. Provide warming measures ❶
5. For frostbite:  
Handle affected area gently, remove jewelry, cover and protect the area ❷
6. Establish vascular access prn ([MCG 1375](#))
7. For altered level of consciousness, treat in conjunction with [TP 1229, ALOC](#)
8. For poor perfusion ([MCG 1355](#)):  
**Normal Saline 1L IV rapid infusion**; use warm saline if available  
Reassess after each 250 mL increment for evidence of volume overload (pulmonary edema); stop infusion if pulmonary edema develops  
  
For persistent poor perfusion, treat in conjunction with [TP 1207, Shock/Hypotension](#)
9. For cardiac arrest, treat in conjunction with [TP 1210, Cardiac Arrest](#)  
Initiate rewarming while resuscitation is ongoing ❸

**SPECIAL CONSIDERATIONS**

- ❶ Warming measures should include moving the patient to a warm environment as quickly as possible, removing wet clothing/items, covering with an emergency/rescue blanket or blanket/sheets, and using warm normal saline if available.
- ❷ Do not allow an area of frostbite to thaw and then refreeze as this causes more tissue damage.
- ❸ Follow usual protocols for resuscitation of patients with hypothermic cardiac arrest while rewarming. Patients with hypothermia may have good neurologic outcome despite prolonged resuscitation; resuscitative efforts should continue until the patient is rewarmed. Consultation with the Base Physician is required before consideration of termination of resuscitation.

1. Assess airway and initiate basic and advanced airway maneuvers prn ([MCG 1302](#))
2. Prioritize treatment of systemic symptoms  
For signs or symptoms of allergic reaction, treat in conjunction with [TP 1219, Allergy](#)  
For poor perfusion, treat in conjunction with [TP 1207, Shock/Hypotension](#)
3. Keep patient calm and limit activity  
Position affected extremity at or below level of the heart
4. For SNAKE bites:  
Splint the affected area  
Elevate affected extremity to the level of the heart
5. For INSECT (bee, wasp, ant), spider and scorpion stings:  
Remove stinger if visualized ❶  
Apply cold pack
6. For MARINE envenomation (e.g., jelly fish, stingrays and scorpion fish):  
Remove barb when applicable  
Soak area in hot water if available ❷
7. Establish vascular access prn ([MCG 1375](#))
8. For continued pain after specific measures above: refer to [MCG 1345, Pain Management](#)
9. For nausea or vomiting:  
[Ondansetron 4mg ODT/IV/IM](#), may repeat x1 in 15 min prn

**SPECIAL CONSIDERATIONS**

- ❶ Remove stinger by scraping patient's skin with the edge of a flat surface (credit card or similar). Do not attempt to pull the stinger out with fingernails or tweezers, as this may cause release of additional venom.
- ❷ Do not use vinegar given the type of jellyfish endemic to California.

**Base Hospital Contact: Required for ALOC and decompression emergencies ([Ref. 518](#)). If decompression emergency is suspected, Base Hospital shall contact the Medical Alert Center ([Ref. 518](#)).**

1. Assess airway and initiate basic and/or advanced airway maneuvers prn ([MCG 1302](#))
2. For cardiac arrest, treat per [TP 1210, Cardiac Arrest](#) ❶
3. Administer **Oxygen** prn ([MCG 1302](#))  
For suspected decompression illness ❷, provide **high flow Oxygen 15 L/min** and **CONTACT BASE**
4. Maintain supine if suspected decompression illness
5. Advanced airway prn ([MCG 1302](#))
6. Initiate cardiac monitoring ([MCG 1308](#))
7. Provide warming measures ❸
8. Establish vascular access prn ([MCG 1375](#))
9. For altered level of consciousness, treat in conjunction with [TP 1229, Altered Level of Consciousness \(ALOC\)](#)
10. For respiratory distress, treat in conjunction with [TP 1237, Respiratory Distress](#) ❹
11. For poor perfusion ([MCG 1355](#)) or for suspected decompression illness:  
**Normal Saline 1L IV rapid infusion**; use warm saline if available  
Reassess after each 250 mL increment for evidence of worsening respiratory distress and if noted **CONTACT BASE** to discuss need to continue or hold Normal Saline based on patient condition ❺  
  
For persistent poor perfusion, treat in conjunction with [TP 1207, Shock/Hypotension](#)
12. Contact **Public Health 213-989-7140** for all submersion incidents involving pools or spas after transfer of patient care in the emergency department or upon termination of resuscitation in the field. ❻

**SPECIAL CONSIDERATIONS**

- ❶ Cardiac arrest from drowning should be treated per [TP 1210, Cardiac Arrest](#). Ventilation is particularly important as the cardiac arrest is almost always due to respiratory failure. In cases of cold water drowning follow usual protocols for resuscitation while simultaneously rewarming the patient. Patients with hypothermia due to cold water drowning, may have good neurologic outcome despite prolonged resuscitation; resuscitative efforts should continue until the patient is rewarmed. Consultation with the Base Physician is required before consideration of termination of resuscitation in patients with suspected hypothermia.
- ❷ Decompression illness includes arterial gas embolism from barotrauma and decompression sickness (aka “the bends”) due to dissolved nitrogen in the blood coming out of solution. Decompression illness most frequently occurs in scuba divers after breathing compressed air at depth. While arterial gas embolism presents almost immediately after ascent, decompression sickness is often delayed and should be considered in any patient with symptoms (e.g. respiratory distress, ALOC, chest or body pain) within 24 hours of completing a dive. All patients with possible decompression illness need immediate evaluation for possible hyperbaric treatment. Per [Ref. 518](#), contact Base immediately to discuss.
- ❸ Warming measures should include moving the patient to a warm environment as quickly as possible, removing wet clothing/items, covering with an emergency/rescue blanket or other blankets/sheets, and using warm Normal Saline if available.
- ❹ Rales may be present in patients after submersion/drowning due to direct lung injury and/or aspiration of water. This is not an indication of cardiogenic pulmonary edema (such as from congestive heart failure) and does not prohibit administration of IV fluids. IV fluids should be initiated and continued unless respiratory status worsens during administration.
- ❺ EMS is assisting the Department of Public Health (DPH) in promptly investigating fatal or nonfatal drownings at public pools or spas in order to ensure safety can be verified before reopening. Contacting the on-call DPH officer will allow timely investigation of these incidents and prevent future incidents.

1. Assess airway and initiate basic and/or advanced airway maneuvers prn ([MCG 1302](#))
2. Administer **Oxygen** prn ([MCG 1302](#))
3. Assess for signs of trauma  
If traumatic injury suspected, treat in conjunction with [TP 1244, Traumatic Injury](#)
4. Control bleeding with direct pressure ❶
5. For epistaxis:  
Control bleeding by pinching nose just distal to nasal bone with head in neutral position and patient sitting forward ❷  
Document Provider Impression – [Epistaxis](#)
6. For tooth avulsion:  
Handle it by the enamel (crown) and do not touch the root  
Place in container with **Normal Saline**
7. For complaints of throat irritation and/or foreign body sensation:  
Assess for airway obstruction, if present treat as per [TP 1234, Airway Obstruction](#)  
For throat complaints without airway obstruction, document Provider Impression – [ENT/Dental Emergencies](#)
8. Establish vascular access prn ([MCG 1375](#))
9. For pain management: refer to [MCG 1345, Pain Management](#)
10. For nausea or vomiting:  
**Ondansetron 4mg ODT/IV/IM**, may repeat x1 in 15 min prn



**SPECIAL CONSIDERATIONS**

- ❶ If unable to sit upright due to poor perfusion or concerns for trauma with possible thoracic or lumbar spinal injury, consider log rolling on side to prevent airway compromise.
- ❷ To prevent aspiration and for patient comfort, sit patient in high Fowler's position leaning forward and suction prn

1. Assess airway and initiate basic and/or advanced airway maneuvers prn (*MCG 1302*)
2. Assess for additional signs of trauma  
If traumatic injury suspected, treat in conjunction with *TP 1244, Traumatic Injury*
3. If penetrating globe injury present/suspected, shield the eye and position patient at 45 degrees ①  
Do not put any pressure on the eye
4. Do not remove any impaled foreign bodies from eye; secure them in place
5. If contacts lenses are present and the patient is unable to remove them, leave in place
6. Establish vascular access prn (*MCG 1375*)
7. Burns to eye:  
Chemical Burn – Irrigate with **Normal Saline 1L**  
Thermal Burn – Cover with dry dressing  
Treat in conjunction with *TP 1220, Burns*
8. For eye pain: refer to *MCG 1345, Pain Management*
9. For nausea or vomiting:  
**Ondansetron 4mg ODT/IV/IM**, may repeat x1 in 15 min prn

**SPECIAL CONSIDERATIONS**

- ❶ Consider a penetrating globe injury with any eye trauma, especially penetrating trauma, large subconjunctival hemorrhage, abnormal shaped pupil or iris, or the appearance of fluid or tissue coming from the eye.

**Base Hospital Contact: Required for persistent ALOC of unclear etiology. ①**

1. Assess airway and initiate basic and/or advanced airway maneuvers prn ([MCG 1302](#))
2. Administer **Oxygen** prn ([MCG 1302](#))
3. Assess level of consciousness per [MCG 1320](#)
4. Initiate cardiac monitoring ([MCG 1308](#))  
Perform 12-lead ECG if cardiac ischemia suspected and treat in conjunction with [TP 1211, Cardiac Chest Pain](#)
5. Establish vascular access ([MCG 1375](#))
6. Check blood glucose  
If < 60mg/dL or > 400mg/dL, treat in conjunction with [TP 1203, Diabetic Emergencies](#)
7. For poor perfusion ([MCG 1355](#)):  
**Normal Saline 1L IV rapid infusion**  
Reassess after each 250 mL increment for evidence of volume overload (pulmonary edema); stop infusion if pulmonary edema develops  
  
For persistent poor perfusion, treat in conjunction with [TP 1207, Shock/Hypotension](#)
8. Assess for signs of trauma  
If traumatic injury suspected, treat in conjunction with [TP 1244, Traumatic Injury](#)
9. Perform mLAPSS  
If stroke is suspected, treat per [TP 1232, Stroke/CVA/TIA](#)
10. For suspected drug overdose or alcohol intoxication, treat in conjunction with [TP 1241, Overdose/Poisoning/Ingestion ②](#)
11. For suspected carbon monoxide exposure, treat in conjunction with [TP 1238, Carbon Monoxide Exposure](#)
12. **CONTACT BASE** if the etiology of the ALOC remains unclear

**SPECIAL CONSIDERATIONS**

- ❶ Consider all causes of ALOC using a mnemonic AEIOUTUIPS:

- A** – Alcohol, abuse, atypical migraine
- E** – Epilepsy, electrolytes
- I** – Insulin (hypoglycemia)
- O** – Oxygen, overdose
- U** – Uremia (kidney failure)
- T** – Trauma, tumor
- I** – Infection
- P** – Psych, poisoning
- S** – Seizure, Subarachnoid hemorrhage, Sepsis, Stroke

Once the cause for ALOC is determined, switch to the more specific protocol.

- ❷ Consider narcotic overdose for patients with hypoventilation (bradypnea), and pinpoint pupils, drug paraphernalia, or strong suspicion of narcotic use.

1. Assess airway and initiate basic and/or advanced airway maneuvers prn ([MCG 1302](#))
2. Administer **Oxygen** prn ([MCG 1302](#))
3. Initiate cardiac monitoring prn ([MCG 1308](#))
4. For poor perfusion, treat in conjunction with [TP 1207, Shock/Hypotension](#)
5. Establish vascular access prn ([MCG 1375](#))
6. Check blood glucose  
If < 60mg/dL or > 400mg/dL, treat in conjunction with [TP 1203, Diabetic Emergencies](#)
7. For vertigo: ❶  
Perform and document mLAPSS  
If mLAPSS positive and/or stroke suspected, treat per [TP 1232, Stroke/CVA/TIA](#) ❷ ❸
8. For nausea or vomiting:  
**Ondansetron 4mg ODT/IV/IM**, may repeat x1 in 15 min prn

**SPECIAL CONSIDERATIONS**

- ❶ Dizziness is often used to describe two different feelings; vertigo and lightheadedness. Vertigo is the sensation of a person or their surroundings moving when no actual movement is occurring. People often describe the feeling of spinning, falling, tilting, or being off balance. This is often associated with nausea/vomiting. Lightheadedness can lead to feeling faint or syncope, and the patient often reports improvement with supine position.
- ❷ Using a stroke scale, such as mLAPSS, increases the chances of diagnosing a stroke. However, stroke scales do not identify all strokes. Vertigo may be a symptom of a cerebellar stroke. If patient's coordination or gait is abnormal with complaint of vertigo, strongly consider stroke.
- ❸ Last known well time (LKWT) determines the patient's eligibility for TPA and/or interventional procedures for clot removal. Document the name and contact information of the family member, caregiver, or witness who can verify the patient's LKWT and report this information to ED providers. If possible, transport the witness with the patient.

**Base Hospital Contact: Required for status epilepticus or pregnant patients.**

1. Assess airway and initiate basic and/or advanced airway maneuvers prn ([MCG 1302](#))
2. Administer **Oxygen** prn ([MCG 1302](#))
3. Assess for signs of trauma  
If traumatic injury suspected, treat in conjunction with [TP 1244, Traumatic Injury](#)
4. Initiate cardiac monitoring prn ([MCG 1308](#))
5. For suspected eclampsia,  
**CONTACT BASE**, do not delay transport ❶
6. If seizure stops spontaneously prior to EMS arrival and no seizure witnessed by EMS:  
Document Provider Impression – [Seizure - Post](#)
7. For active seizure witnessed by EMS:  
**Midazolam 10mg (2mL) IM/IN, or**  
  
**Midazolam 5mg (1mL) IV/IO**, if existing vascular access, repeat x1 in 2 min prn  
  
Maximum total dose prior to Base contact 10mg all routes  
Document Provider Impression – [Seizure - Active](#), even if seizure spontaneously resolves ❷ ❸  
  
**CONTACT BASE** for persistent seizure and additional medication orders  
May repeat as above up to a maximum total dose 20mg
8. Establish vascular access prn ([MCG 1375](#))
9. For persistent seizure or persistent ALOC:  
Check blood glucose  
If < 60mg/dL or > 400mg/dL, treat in conjunction with [TP 1203, Diabetic Emergencies](#)



**SPECIAL CONSIDERATIONS**

- ❶ Preeclampsia and eclampsia may develop anytime between 20 weeks gestation and 6 weeks after delivery (postpartum). Signs/symptoms of preeclampsia include systolic blood pressure > 140, edema, changes in vision, headache and/or right upper quadrant pain. Treat seizures from eclampsia with Midazolam.
- ❷ Active seizures may include tonic and/or clonic activity or focal seizure with altered level of consciousness. Eye deviation, clenched jaw, lip smacking or focal twitching may be subtle signs of seizure.
- ❸ Seizures may occur as a result of underlying medical problems or toxic ingestions. Make every effort to obtain medical history and determine all medications/drugs that the patient may have taken.

**Base Hospital Contact: Required prior to transport for all patients with suspected Stroke or TIA.**

1. Assess airway and initiate basic and/or advanced airway maneuvers prn ([MCG 1302](#))
2. Administer **Oxygen** prn ([MCG 1302](#))
3. Initiate cardiac monitoring ([MCG 1308](#))  
Perform 12-lead ECG if concern for cardiac ischemia or dysrhythmia
4. Establish vascular access prn ([MCG 1375](#)) ❶  
Establish IV in all patients with LAMS 4 or 5, large bore catheter (16g or 18g) preferred
5. Check blood glucose  
If < 60mg/dL or > 400mg/dL, treat in conjunction with [TP 1203, Diabetic Emergencies](#)
6. Assess for signs of trauma  
If traumatic injury suspected, treat in conjunction with [TP 1244, Traumatic Injury](#)
7. Perform Modified Los Angeles Prehospital Stroke Screen (mLAPSS) on all patients exhibiting local neurologic signs. ❷ ❸  
The mLAPSS is positive if **all** of the following criteria are met:
  - i. No history of seizures or epilepsy
  - ii. Age 40 years or older
  - iii. At baseline, patient is not wheelchair bound or bedridden
  - iv. Blood glucose between 60 and 400 mg/dL
  - v. Obvious asymmetry-unilateral weakness with any of the following motor exams:
    - a. Facial Smile/Grimace
    - b. Arm Strength
    - c. Grip Strength
8. If mLAPSS is positive, or your provider impression remains stroke despite negative mLAPSS ❷ ❸, calculate Los Angeles Motor Score (LAMS) from the mLAPSS motor items:
  - i. Facial Droop
    - a. Absent = 0
    - b. Present = 1
  - ii. Arm Drift
    - a. Absent = 0
    - b. Drifts down = 1
    - c. Falls rapidly = 2
  - iii. Grip Strength
    - a. Normal = 0
    - b. Weak grip = 1
    - c. No grip = 2
9. Verify and document date and time of Last Known Well Time (LKWT) ❹

10. Determine patient destination based on mLAPSS, LAMS and LKWT: ④
  - mLAPSS positive, LAMS 4-5, LKWT < 24 hours → Transport to Comprehensive Stroke Center (CSC) if within 30 min
  - mLAPSS positive, LAMS < 4, LKWT < 24 hours → Transport to closest Stroke Center
  - mLAPSS negative but acute stroke suspected → **CONTACT BASE** for destination
11. Transport with head of bed elevated 30-45 degrees ⑤

**SPECIAL CONSIDERATIONS**

- ❶ If LAMS is 4 or greater, place 18 gauge IV if possible to facilitate advanced imaging studies at CSC.
- ❷ The Modified LAPSS (mLAPSS) is a validated tool that helps to identify stroke mimics and excludes patients that will not benefit from stroke care. Using a stroke scale, such as mLAPSS, increases the chances of diagnosing strokes. However, stroke scales do not catch all strokes, including presentations such as aphasia, ataxia and vertigo. For patients in whom you suspect stroke but are mLAPSS negative, calculate the LAMS and contact the Base to discuss the destination decision. History of prior stroke does not exclude the need to evaluate for possible new deficits. New findings in a patient with prior stroke should be managed similarly to first-time strokes and such patients should be routed to the closest appropriate approved stroke center as per Ref. 521.
- ❸ In patients with suspected stroke, the LAMS is performed by verbally requesting movement of face, arm, and grip or, if the patient is aphasic, by non-verbally encouraging such movement via pantomime and/or by gentle placement of limbs (painful stimulation is avoided). In patients with suspected stroke with ALOC (e.g., GCS <9) attempt neurologic assessment as noted above, alternatively, for patients unable to perform movements, compare tone and strength through passive movement of the limbs.
- ❹ LKWT determines the patient's eligibility for TPA and/or interventional procedures for clot removal. Document the name and contact information of the family member, caregiver, or witness who can verify the patient's LKWT and report this information to ED providers. If possible, transport the witness with the patient.
- ❺ Whenever possible transport patients with suspected stroke with head of bed elevated 30-45 degrees. This reduces risk of aspiration and also reduces elevation in intracranial pressure.

1. Assess airway and initiate basic and/or advanced airway maneuvers prn ([MCG 1302](#))
2. Administer **Oxygen** prn ([MCG 1302](#))
3. Establish vascular access prn ([MCG 1375](#))
4. For orthostasis signs of dehydration or fluid losses, or for poor perfusion ([MCG 1355](#)): ① ②  
**Normal Saline 1L IV rapid infusion**  
Reassess after each 250 mL increment for evidence of volume overload (pulmonary edema);  
stop infusion if pulmonary edema develops

For persistent poor perfusion, treat in conjunction with [TP 1207, Shock/Hypotension](#)

5. Initiate cardiac monitoring ([MCG 1308](#))  
Perform 12-Lead ECG and assess cardiac rhythm for patients >35 years of age and/or for those  
for which cardiac ischemia or dysrhythmia is suspected  
If cardiac dysrhythmia is present, treat per [TP 1212, Cardiac Dysrhythmia – Bradycardia](#) or [TP 1213, Cardiac Dysrhythmia – Tachycardia](#)  
If STEMI on 12-Lead ECG, treat per [TP 1211, Cardiac Chest Pain](#)
6. Assess for signs of trauma ③  
If traumatic injury suspected, treat in conjunction with [TP 1244, Traumatic Injury](#)
7. For persistent ALOC, treat in conjunction with [TP 1229, ALOC](#)

**SPECIAL CONSIDERATIONS**

- ❶ Patients who are lightheaded and/or tachycardic when sitting and/or standing compared to lying down, referred to as orthostatic, are likely dehydrated and in need for fluid resuscitation. Orthostatic vital signs provide little information and may result in harm so should not be performed. Syncope can result from a lack of adequate perfusion to the brain, and in the setting of suspected dehydration or fluid losses, this can be a sign of poor perfusion. Therefore, for patients who present with syncope with orthostasis and/or dehydration, fluid resuscitation is appropriate unless contraindicated. Use caution in patients with history or congestive heart failure or renal insufficiency.
- ❷ In a female with syncope, ask about possible pregnancy and any history of vaginal bleeding. One cause of syncope in females is a ruptured ectopic pregnancy. This can be life threatening and may present with poor perfusion and require fluid resuscitation with **Normal Saline**. Alert Base if patient known to be pregnant.
- ❸ Elderly patients should be evaluated carefully for traumatic injuries resulting from ground level falls. Common injuries include blunt head trauma and extremity fractures.

**Base Hospital Contact: Required for patients with severe respiratory distress and/or respiratory arrest.**

1. Assess airway and initiate basic and/or advanced airway maneuvers prn ([MCG 1302](#)) ❶ ❷
2. Administer **Oxygen** prn ([MCG 1302](#))  
**High flow Oxygen 15 L/min** for all patients with impending respiratory arrest due to severe airway obstruction
3. For physical obstruction from foreign body:  
If patient unable to speak but is conscious, perform 5 abdominal thrusts; reassess, if patient becomes unconscious lower to ground and begin chest compressions  
  
If patient is unconscious, initiate CPR X 2 minutes  
Perform direct laryngoscopy to visualize potential obstruction when indicated  
Remove visible foreign body with Magill forceps
4. If patient has an Unmanageable Airway ([MCG 1302](#)):  
Initiate immediate transport to MAR and **CONTACT BASE** en route
5. Initiate cardiac monitoring ([MCG 1308](#))
6. If patient is conscious and spontaneous ventilation is adequate:  
Monitor in position of comfort
7. Consider specific presentation:  
For suspected anaphylaxis treat per [TP 1219, Allergy](#)

For stridor:

**Epinephrine (1mg/mL solution) administer 5mg (5mL) via neb**

Repeat x1 in 10 min prn

Prepare to manage airway if patient's condition deteriorates

For visible airway/tongue swelling:

**Epinephrine (1mg/mL) administer 0.5mg (0.5mL) IM**

Repeat every 10 min prn x2, maximum total 3 doses

For patients with a tracheostomy and suspected obstruction: ❸

Attempt suctioning

Remove and clean inner cannula with saline if present; replace if positive-pressure ventilation required ❹

If the obstruction is not relieved, remove entire tracheostomy tube and replace with a new tracheostomy or 6.0mm endotracheal tube ❺

If a new tube cannot be placed, cover stoma and attempt BMV first via the mouth. If no chest rise attempt BMV over stoma with a small mask

8. Establish vascular access prn ([MCG 1375](#))

**SPECIAL CONSIDERATIONS**

- ❶ In evaluation of patient with suspected airway obstruction, assessment of the airway should include the tongue and posterior oropharynx, including uvula and tonsillar pillars.
- ❷ Supraglottic airway placement is contraindicated for patients with upper airway obstruction.
- ❸ Common tracheostomy emergencies include obstruction of the tracheostomy tube and bleeding. There are different types of tracheostomy tubes, some with an inner cannula and/or obturator. The obturator obstructs airflow and is only used during insertion. The inner cannula allows for connection to a ventilator or bag mask for positive pressure ventilation. There are both cuffed and uncuffed tracheostomy tubes. If the tracheostomy does not have a cuff (balloon inflated in the trachea indicated by a side port), the airway is not protected against aspiration and air can leak out through the mouth during positive-pressure ventilation. If respiratory failure occurs in a patient with an uncuffed tracheostomy tube, it should be replaced with a cuffed endotracheal tube if feasible in order to facilitate positive-pressure ventilation. For bleeding direct pressure should be applied and suctioning as needed to reduce aspiration of blood.
- ❹ The inner cannula is required to attach a ventilator or bag mask to a tracheostomy for positive-pressure ventilation. It may become obstructed with secretions; remove, clean with saline, and replace once obstruction relieved.
- ❺ Removal and reinsertion of the tracheostomy tube is contraindicated if the tracheostomy is < 1 week old because the stoma has not fully formed and a false tract may be created. Once the stoma has matured, a tracheostomy can be safely removed and replaced when necessary. If a flexible intubation guide (e.g., Bougie) can be inserted, it may be used to guide the removal and reinsertion of the tracheostomy or endotracheal tube.



**Base Hospital Contact: Required for severe respiratory distress unresponsive or not amenable to CPAP.**

1. Assess scene for safety
2. Use appropriate PPE
3. Remove patient from environment if potential for ongoing exposure
4. Assess airway and initiate basic and/or advanced airway maneuvers prn ([MCG 1302](#))
5. If patient awake and alert, place in position of comfort
6. Administer **Oxygen** prn ([MCG 1302](#))  
**High flow Oxygen 15 L/min** for all patients with smoke inhalation, carbon monoxide exposure, or severe respiratory distress due to airway injury, regardless of SpO<sub>2</sub> ❶
7. If patient has an Unmanageable Airway ([MCG 1302](#))  
Initiate immediate transport to the MAR and **CONTACT BASE** en route
8. Assess for signs of trauma  
If traumatic injury suspected, treat in conjunction with [TP 1244, Traumatic Injury](#)
9. For airway burns, treat in conjunction with [TP 1220, Burns](#)
10. For suspected carbon monoxide exposure, treat in conjunction with [TP 1238, Carbon Monoxide Poisoning](#)
11. For suspected exposure to hazardous materials, treat in conjunction with [TP 1240, HAZMAT](#)
12. For airway edema and/or stridor:  
**Epinephrine (1mg/mL solution) administer 5mg (5mL) via neb**  
Repeat x1 in 10 min prn
13. For wheezing/bronchospasm (consider also for cough):  
**Albuterol 5mg (6mL) via neb or 4 puffs via MDI**  
Repeat x2 prn, maximum total dose prior to Base contact 15mg
14. Initiate CPAP for patients with moderate or severe respiratory distress.  
Hold CPAP for patients with suspected pneumothorax, upper airway edema/obstruction, or other contraindications ([MCG 1315](#)) ❷

15. Initiate cardiac monitoring prn ([MCG 1308](#))
16. Perform 12-lead ECG if cardiac ischemia suspected ([MCG 1308](#))
17. Establish vascular access prn ([MCG 1375](#))
18. For poor perfusion ([MCG 1355](#)):  
**Normal Saline 1L IV rapid infusion**  
Reassess after each 250mL increment for evidence of volume overload (pulmonary edema); stop infusion if pulmonary edema develops  
  
For persistent poor perfusion, treat in conjunction with [TP 1207, Shock/Hypotension](#)

**SPECIAL CONSIDERATIONS**

- ❶ Suspect smoke inhalation and carbon monoxide exposure in setting of closed-space fires, carbonaceous sputum in mouth/nose, elevated carbon monoxide levels (if point of care testing available), and facial burns. For patients with ALOC or seizure after industrial or closed space fire, also consider cyanide toxicity; contact Base and ensure notification of the receiving hospital.
- ❷ CPAP is appropriate for undifferentiated respiratory distress and may be used if patient does not improve after initial albuterol. Contraindications to CPAP include: ALOC with inability to follow commands or hold head up independently, active vomiting, facial trauma, or inability to protect airway.

**Base Hospital Contact: Required for respiratory failure, severe respiratory distress unresponsive or not amenable to CPAP.**

1. Use appropriate PPE ❶
2. Assess airway and initiate basic and/or advanced airway maneuvers prn ([MCG 1302](#)) ❷ ❸
3. Maintain patient in position of comfort ❹
4. Administer **Oxygen** prn ([MCG 1302](#))  
**High flow Oxygen 15 L/min** for all patients with impending respiratory failure, suspected pneumothorax, inhalation injury, or carbon monoxide exposure
5. If patient with stridor or concern for airway obstruction, treat per [TP 1234, Airway Obstruction](#)
6. If pulmonary edema/CHF exacerbation suspected, treat per [TP 1214, Pulmonary Edema/CHF](#)
7. If anaphylaxis suspected, treat in conjunction with [TP 1219, Allergy](#)
8. Initiate CPAP for alert patients with moderate or severe respiratory distress and SBP  $\geq 90$ mmHg ❺  
Hold CPAP for patients with suspected pneumothorax, upper airway edema/obstruction, or other contraindications ([MCG 1315](#))
9. Capnography is encouraged for patients with moderate or severe respiratory distress ([MCG 1305](#)) ❻
10. Initiate cardiac monitoring prn ([MCG 1308](#))  
Perform 12-lead ECG if cardiac ischemia suspected and treat in conjunction with [TP 1211, Cardiac Chest Pain](#)
11. Consider the following etiologies of respiratory distress without pulmonary edema:  
Bronchospasm (asthma or COPD) – document Provider Impression as *Respiratory Distress / Bronchospasm*  
Pneumonia – document Provider Impression as *Respiratory Distress / Other*  
Pulmonary embolism – document Provider Impression as *Respiratory Distress / Other*  
Spontaneous pneumothorax – document Provider Impression as *Respiratory Distress / Other*
12. For bronchospasm, COPD or asthma exacerbation:  
**Albuterol 5mg (6mL) via neb or 4 puffs via MDI** ❼ ❸  
May repeat x2 prn wheezing  
May be administered in-line with CPAP for patients with moderate or severe respiratory distress  
Document Provider Impression as *Respiratory Distress / Bronchospasm*  
  
For deteriorating respiratory status despite albuterol:  
**Epinephrine (1mg/mL) administer 0.5mg (0.5mL) IM**  
Consider early in asthma exacerbation with poor perfusion or severe respiratory distress ❾  
Unlikely to benefit patients with COPD exacerbation

13. Establish vascular access prn ([MCG 1375](#))
14. For poor perfusion ([MCG 1355](#)):  
**Normal Saline 1L IV rapid infusion**  
Reassess after each 250mL increment for evidence of volume overload (pulmonary edema); stop infusion if pulmonary edema develops  
  
For persistent poor perfusion, treat in conjunction with [TP 1207, Shock/Hypotension](#)
15. If sepsis suspected, treat in conjunction with [TP 1204, Fever/Sepsis](#)
16. If overdose is suspected, treat in conjunction with [TP 1241, Overdose/Poisoning/Ingestion](#)
17. If inhalation injury suspected, treat in conjunction with [TP 1236, Inhalation Injury](#)
18. Perform needle thoracostomy for suspected tension pneumothorax ([MCG 1335](#))

**SPECIAL CONSIDERATIONS**

- ❶ Consider wearing surgical mask when caring for patients with respiratory distress of unclear etiology, which may be infectious.
- ❷ Initiate BMV to assess patient response. Effective BMV may improve the patient's respiratory status enough to restore adequate spontaneous respirations. Place advanced airway placement if BMV is ineffective or consider placement once assessment for rapidly reversible causes is complete. Paramedics should use judgment based on patient characteristics, circumstances, and skill level when selecting the advanced airway modality.
- ❸ If positive pressure ventilation is performed at any time, document Provider Impression as *Respiratory Arrest / Respiratory Failure*.
- ❹ Fowler's or Semi-Fowler's positioning is likely to be most comfortable for awake patients with respiratory distress.
- ❺ Early use of CPAP has been shown to decrease ICU length of stay and risk of intubation for patients with severe respiratory distress. It should be strongly considered for patients in moderate-to-severe respiratory distress, based on assessment of work of breathing, regardless of SpO<sub>2</sub>.

CPAP is appropriate for undifferentiated respiratory distress. It is the treatment of choice for patients with COPD exacerbation and may be used in conjunction with albuterol or if patient does not improve after initial albuterol.

Contraindications to CPAP include: ALOC with inability to follow commands or hold head up independently, active vomiting, facial trauma, or inability to protect airway.

- ❻ Persistently high or increasing end-tidal CO<sub>2</sub> (EtCO<sub>2</sub>) readings above normal in a spontaneously ventilating patient with reduced respiratory rate indicates bradypneic hypoventilation; whereas low EtCO<sub>2</sub> readings with a slow respiratory rate represents hypopneic hypoventilation; consider the need for assisted ventilation in these cases. In a patient with respiratory distress of unclear etiology, a "shark-fin" capnography waveform indicates likely Bronchospasm/COPD exacerbation. Gradually elevating EtCO<sub>2</sub> waveforms ("stacking") in a patient with BMV indicates excessive ventilation by the provider, resulting in inadequate exhalation; in this case, decrease ventilation rate significantly to avoid progression to cardiopulmonary arrest.
- ❼ Wheezing may also be caused by pulmonary edema; reassess breath sounds frequently for patients without history of asthma or with other concerns for volume overload (edema, etc.), because as air entry improves with treatment, rales may be more easily heard. If pulmonary edema/CHF exacerbation suspected, treat per [TP 1214, Pulmonary Edema/CHF](#).
- ❽ Administration of albuterol via a metered-dose inhaler (MDI) with spacer is considered equivalent to nebulized albuterol; a spacer is typically required for this route to be effective in novice users. MDIs are single use and should be left with the hospital staff upon handoff of the patient.
- ❾ Epinephrine may be administered prior to albuterol as initial drug therapy in patients with Respiratory Failure due to bronchospasm.

**Treatment Protocol: CARBON MONOXIDE EXPOSURE**

**Ref. No. 1238**

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1. Assess scene for potential hazards and number of patients
2. Remove patient from the source of carbon monoxide ❶
3. Assess airway and initiate basic and/or advanced airway maneuvers prn ([MCG 1302](#))
4. Administer **high flow Oxygen 15 L/min** ([MCG 1302](#))
5. Initiate cardiac monitoring prn ([MCG 1308](#))  
Perform 12-lead ECG to assess for cardiac ischemia ❷
6. If carbon monoxide monitor available, consider measuring CO level ❸  
Report and document results
7. Establish vascular access prn ([MCG 1375](#))
8. For altered level of consciousness, treat in conjunction with [TP 1229, ALOC](#)
9. Assess for signs of trauma  
For traumatic injury, treat in conjunction with [TP 1244, Traumatic Injury](#)
10. For poor perfusion ([MCG 1355](#)):  
**Normal Saline 1L IV rapid infusion**  
Reassess after each 250 mL increment for evidence of volume overload (pulmonary edema);  
stop infusion if pulmonary edema develops  
  
For persistent poor perfusion, treat in conjunction with [TP 1207, Shock/Hypotension](#)
11. For suspected exposure to hazardous materials, treat in conjunction with [TP 1240, HAZMAT](#) ❹

**SPECIAL CONSIDERATIONS**

- ❶ Symptoms of carbon monoxide poisoning include headache, altered level of consciousness, malaise, nausea, dizziness and unresponsiveness. Consider carbon monoxide when multiple persons in same location present with any of these symptoms.
- ❷ Patients with carbon monoxide poisoning have impaired oxygen delivery and are at high risk for cardiac ischemia.
- ❸ The measured CO level should not impact the transport decision. It will be helpful for hospital treatment of the exposure.
- ❹ Exposures to certain chemicals can be associated with carbon monoxide poisoning. For example, methylene chloride (dichloromethane) is an industrial solvent and a component of paint remover. It is metabolized to carbon monoxide by the liver and may cause carbon monoxide toxicity if inhaled or ingested.



**Base Hospital Contact Required.**

1. Assess airway and initiate basic and/or advanced airway maneuvers prn ([MCG 1302](#))
2. Establish vascular access prn ([MCG 1375](#))
3. Assess for medication exposure as the potential cause of the dystonic reaction ① ②
4. **CONTACT BASE** to confirm Provider Impression of Dystonic Reaction
5. **Diphenhydramine 50mg (1mL) slow IV push**  
If unable to obtain venous access, **Diphenhydramine 50mg (1mL) deep IM**

**SPECIAL CONSIDERATIONS**

- ❶ The table below shows common medications that can cause an acute dystonic reaction.

Generic Name	Trade Name	General Use
Prochlorperazine	Compazine	Antiemetic, migraine headache
Hydroxyzine	Vistaril, Atarax	Antiemetic, antipruritic
Promethazine	Phenergan	Antiemetic, antipsychotic
Haloperidol	Haldol	Antipsychotic, Tourette's syndrome
Thioridazine	Mellaril	Antipsychotic
Alprazolam	Xanax	Antianxiety
Metoclopramide	Reglan	Antiemetic
Droperidol	Inapsine	Antiemetic, antipsychotic
Fluphenazine	Prolixin	Neuralgia, antipsychotic

- ❷ Signs and symptoms of a dystonic reaction include anxiety, agitation and associated involuntary muscle spasms of the head, neck, face, eyes or trunk. This often results in an inability to retract the tongue into the mouth, forced jaw opening, facial grimacing, and/or eye deviation.

**Contact Medical Alert Center (MAC) for all MCIs prior to transport otherwise notify the receiving hospital. ①**

1. Secure area, establish incident site, and don protective equipment/gear appropriate for hazardous material exposure according to the provider agency protocol
2. If MCI, begin triage ([Ref. 519.2 and Ref. 519.5](#))  
Provide MAC with the following incident information: properties of contaminant, type of decontamination performed, signs/symptoms, and smells
3. Remove patient from source if safe to do so, and move to decontamination area prn
4. Assess airway and initiate basic and/or advanced airway maneuvers prn ([MCG 1302](#))
5. Administer **Oxygen** prn ([MCG 1302](#))
6. Remove patient's clothing
7. Flush skin, eyes and mucous membranes with copious amounts of water  
For eye involvement, irrigate with **Normal Saline 1L** during transport; allow patient to remove contact lenses if possible.
8. Initiate cardiac monitoring ([MCG 1308](#))  
Perform 12-lead ECG prn  
For patients with dysrhythmias, treat in conjunction with [TP 1212, Cardiac Dysrhythmia-Bradycardia](#) or [TP 1213, Cardiac Dysrhythmia- Tachycardia](#)
9. Establish vascular access prn ([MCG 1375](#))
10. Assess for signs of trauma  
If traumatic injury suspected, treat in conjunction with [TP 1244, Traumatic Injury](#)
11. For poor perfusion ([MCG 1355](#)):  
**Normal Saline 1L IV rapid infusion**  
Reassess after each 250 mL increment for evidence of volume overload (pulmonary edema); stop infusion if pulmonary edema develops  
  
For persistent poor perfusion, treat in conjunction with [TP 1207, Shock/Hypotension](#)
12. Consider contacting the Poison Control Center in conjunction with the Base Hospital for assistance with management of toxins ([Ref. 805](#))

### NERVE AGENT EXPOSURE

13. If multiple symptomatic patients with > 50 victims involved, request EMS Chempack from the MAC ([Ref. 1108](#))

14. For SEVERE EXPOSURE: ❷  
Begin treatment immediately (concurrent with decontamination) and transport after decontamination procedures are completed  
**DuoDote (Atropine 2.1mg and Pralidoxime Chloride 600mg) IM x3**, one after another  
  
For seizure, treat in conjunction with [TP 1231, Seizure](#)
15. For MODERATE EXPOSURE: ❷  
Ensure decontamination procedures are completed before treatment or transport to facility  
**DuoDote IM x2, one after another**
16. For MILD EXPOSURE: ❷  
Ensure decontamination procedures are completed before treatment or transport to facility  
**DuoDote IM x1**
17. If symptoms in MILD or MODERATE exposures progress after initial evaluation, administer additional **DuoDote IM for a total of 3 doses**

#### ORGANOPHOSPHATE EXPOSURE

18. For heart rate < 60bpm, hypotension, respiratory depression and/or extreme salivation  
**Atropine 2mg (20mL) IV/IO ❸**  
May be repeated every 5 min until patient is asymptomatic  
  
For seizure, treat in conjunction with [TP 1231, Seizure](#)

#### RADIOLOGIC EXPOSURE

19. If radiation contamination is suspected, confirm by using appropriate detection devices available through Department of Public Health (DPH), Radiation Management at (213) 989-7140
20. If radiation contamination present, identify the cause of the contamination ❹  
Internal Radiation is exposure through open wound, ingestion or inhalation of radioactive materials  
External Radiation is exposure through a Radiological Dispersal Device (RDD), Radiological Material Release (RMR) or Radiological Exposure Device (RED)
21. For External Radiation:  
If a RDD is used and in the absence of any other information, evacuate 1,650 feet in all directions from the detonation site and then contact the MAC ❹  
Notify DPH Radiation Management at (213) 989-7140 if departmental HAZMAT team is not available and prolonged exposures are expected ❺
22. For patients with a life threatening condition:  
Treat using appropriate treatment protocol based on complaints in conjunction with decontamination  
Remove the outer clothing and utilize containment mitigation techniques before transport

23. For patients without a life threatening condition:  
Decontaminate using departmental protocols  
Treat using appropriate treatment protocol based on complaints
24. Asymptomatic and minimal exposure suspected:  
Decontaminate and release patient if appropriate ⑥

**SPECIAL CONSIDERATIONS**

- ❶ If MCI, MAC should be contacted for 5 or more patients and coordinate all destination decisions otherwise the Base Hospital should be notified as specified in this protocol, and if no Base Hospital required then the receiving hospital will be notified.
- ❷ Nerve agent exposure symptom severity:  
SEVERE: severe respiratory distress, respiratory arrest, cyanosis, extreme SLUDGE (salivation, lacrimation, urination, defecation, gastrointestinal distress and emesis) seizures, unconsciousness  
MODERATE: miosis, rhinorrhea, shortness of breath, vomiting, diarrhea  
MILD: miosis, rhinorrhea and increased salivation
- ❸ High cumulative doses may be required, maximum single dose 2mg.
- ❹ Radiation Exposure Safety:  
Exposure to victims with internal radiation poses low-to-no risk to EMS personnel  
Exposure to victims with external radiation exposure poses low-to-moderate risk to EMS personnel  
Remember the following principles:  
    *Time*: limit time with the victim to a minimum  
    *Distance*: the further away from the source, the smaller the dose received.  
    *Shielding*: "Turnouts" will protect from alpha and beta emitters, wear respiratory protection if particulate matter (i.e., dust or powder) present
- ❺ The HazMat team, MAC, or DPH Radiation Management will be able to redefine boundaries, establish radiation dose guidelines, assist with monitoring and decontamination procedures, and provide support to on-scene responders. These resources may also refer to *Emergency Response Guidebook* for other recommended scene precautions.
- ❻ If number of patients exceeds available resources, asymptomatic patients with minimal exposure may be released for home decontamination.

1. Assess airway and initiate basic and/or advanced airway maneuvers prn ([MCG 1302](#))
2. Administer **Oxygen** prn ([MCG 1302](#))
3. Establish vascular access prn ([MCG 1375](#)) ❶
4. For suspected opioid overdose with altered mental status and hypoventilation/apnea:  
**Naloxone 2-4 mg IN** (1mg per nostril or 4mg/0.1 mL IN depending on formulation available) or  
**Naloxone 2mg IM** or  
**Naloxone 0.8-2mg IV push**, maximum dose all routes 8 mg  
Titrate to adequate respiratory rate and tidal volume ❶
5. For patients whose medical condition improves after naloxone and who demonstrate decision-making capacity, offer “Leave Behind Naloxone” ([MCG 1337](#))
6. If partial response to Naloxone and strong suspicion for opioid overdose:  
**CONTACT BASE** for additional doses of **Naloxone**
7. If available, consider capnography to monitor ventilations ([MCG 1305](#)) ❷
8. For respiratory distress, treat in conjunction with [TP 1237, Respiratory Distress](#)
9. Initiate cardiac monitoring prn ([MCG 1308](#))  
For suspected cardiac ischemia, treat in conjunction with [TP 1211, Cardiac Chest Pain](#)  
For patients with dysrhythmias, treat in conjunction with [TP 1212, Cardiac Dysrhythmia - Bradycardia](#) or [TP 1213, Cardiac Dysrhythmia - Tachycardia](#)
10. Evaluate for other causes of altered level of consciousness ([MCG 1320](#))
11. Assess for signs of trauma  
If traumatic injury suspected, treat in conjunction with [TP 1244, Traumatic Injury](#)
12. Check blood glucose  
If < 60mg/dL or > 200mg/dL, treat in conjunction with [TP 1203, Diabetic Emergencies](#)
13. For alcohol intoxication, document Provider Impression – *Alcohol Intoxication*  
For other intoxications, including overdose or ill effects of prescription medications and illicit substance, document Provider Impression – *Overdose/Poisoning/Ingestion*
14. For poor perfusion ([MCG 1355](#)):  
**Normal Saline 1L IV rapid infusion**  
Reassess after each 250 mL increment for evidence of volume overload (pulmonary edema); stop infusion if pulmonary edema develops  
  
For persistent poor perfusion, treat in conjunction with [TP 1207, Shock/Hypotension](#)
15. **CONTACT BASE** to discuss antidote administration

Calcium channel blocker overdose: **Calcium chloride 1g (10mL) IV push over 60 seconds**  
Tricyclic antidepressant overdose: **Sodium bicarbonate 50mEq (50mL) IV push over 60 seconds**

16. Assess for co-ingestion of other substances
17. Consider contacting the Poison Control Center (1-800-222-1222) in conjunction with Base for assistance with identification and management of unknown medications/toxins ([Ref. 805](#))
18. Bring containers of ingested substances to the Emergency Department with patient
19. If patient refuses recommended treatment or transport, **CONTACT BASE**  
Patient must demonstrate decision making capacity ([Ref. 834](#))  
If EMS personnel or Base Hospital determines it is necessary to transport the patient against their will, contact law enforcement for assistance



**SPECIAL CONSIDERATIONS**

- ❶ The first priority for apneic patients after narcotic overdose is to begin positive pressure ventilation. Once ventilations are established, naloxone should be administered with the goal of restoring spontaneous ventilations. Vascular access should not take priority over initial treatment with Naloxone (IN or IM) for patients with suspected opiate overdose. Patients who are awake and alert with normal respirations after naloxone therapy may not require IV access or additional doses of naloxone.
- ❷ Persistently high or increasing end-tidal CO<sub>2</sub> (EtCO<sub>2</sub>) readings above normal with low respiratory rate indicate respiratory failure (bradypneic hypoventilation); whereas low EtCO<sub>2</sub> readings with a low respiratory rate may also represent respiratory failure due to low tidal volumes (hypopneic hypoventilation); consider the need for assisted ventilation in these cases.
- ❸ Signs of calcium channel overdose include bradycardia along with hypotension and hyperglycemia. Consider when the patient is taking or has access to a calcium channel blocker medication. Ask about potential exposures including medications in the home.
- ❹ ECG findings consistent with tricyclic overdose include wide QRS (>0.12mm) and terminal R in aVR. Consider when the patient is taking or has access to a tricyclic medication. Ask about potential exposures including medications in the home.

**Treatment Protocol: CRUSH INJURY / SYNDROME**

**Ref. No. 1242**

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**Base Hospital Contact: Required for patients at risk for crush syndrome ❶ or prolonged entrapment > 30 minutes. ❷**

1. For multi-system trauma, treat in conjunction with [TP 1244, Traumatic Injury](#)
2. Assess airway and initiate basic and/or advanced airway maneuvers prn ([MCG 1302](#))
3. Provide spinal motion restriction (SMR) if indicated ([MCG 1360](#))  
For alert patients, logroll patient off backboard (if used during extrication) and onto gurney prior to transport ❸
4. Administer **Oxygen** prn ([MCG 1302](#))
5. For anticipated prolonged extrication (> 30 minutes)  
Consider activating the Hospital Emergency Response Team (HERT), [Ref. 817](#)
6. Establish vascular access immediately ([MCG 1375](#))  
**CONTACT BASE** to discuss placement of an IO if unable to establish IV access ❹
7. **Normal Saline 1L IV/IO rapid infusion** as soon as possible and prior to release of compressive force  
Repeat x1 for a **total of 2 liters**  
Reassess after each 250 mL increment for evidence of volume overload (pulmonary edema); stop infusion if pulmonary edema develops  
**CONTACT BASE** to obtain order for additional **Normal Saline** if persistent entrapment ❺
8. Initiate cardiac monitoring ([MCG 1308](#))  
Assess for signs of hyperkalemia
9. Apply blanket to keep patient warm
10. If evidence of hyperkalemia (peaked T-waves in multiple leads, absent p-waves, and/or widened QRS complex) administer: ❻  
**Calcium Chloride 1gm (10mL) slow IV/IO push**, repeat x1 for persistent ECG abnormalities  
**Sodium Bicarbonate 50mEq (50mL) slow IV/IO push**, repeat x1 for persistent ECG abnormalities  
**Albuterol 5mg (6mL) via nebulizer**, repeat continuously until hospital arrival  
**CONTACT BASE** for persistent ECG abnormalities to obtain order for additional medications ❻
11. For pain management: refer to [MCG 1345, Pain Management](#)
12. For CRUSH INJURY without risk of crush syndrome  
Release compression and extricate patient  
Monitor cardiac rhythm for signs of hyperkalemia
13. Consider pre-positioning a tourniquet prior to extrication in order to prevent hemorrhage upon release of compression

14. For patients at risk for CRUSH SYNDROME ①, administer the following medications 5 minutes prior to extrication: ⑤ ⑥ ⑦

**Calcium Chloride 1gm (10mL) slow IV/IO push**

**Sodium Bicarbonate 50mEq (50mL) slow IV/IO push**

**Albuterol 5mg (6mL) via mask nebulization** x2 for a total dose of 10mg

If unable to establish vascular access while entrapped

Place tourniquet PRIOR to extrication ⑧

15. For patients within 3 hours of injury with uncontrolled extremity hemorrhage despite pressure and tourniquets ([MCG 1370](#))

**Tranexamic Acid (TXA) 1 gram in 50-100mL Normal Saline IV/IO, infuse over 10 minutes ⑨**

**SPECIAL CONSIDERATIONS**

- ❶ Crush syndrome is a systemic illness characterized by dysrhythmias and shock. It results from toxins released from crushed muscle tissue into the blood stream. Patients are at risk for crush syndrome if they have all of the following: 1) circumferential compression causing crush injury; AND 2) involvement of a large muscle group (lower extremity including the thigh(s) and/or pelvic girdle or upper extremity including the pectoral girdle); AND 3) entrapment for at least 1 hour. The risk of crush syndrome increases with the amount of muscle involved and the duration of the entrapment.
- ❷ For patients requiring transport to a Trauma Center per [Ref. 506](#), contact the receiving Trauma Center for Base Medical Direction and notification. If the Base Hospital is contacted and the Base redirects transport to a Trauma Center, Base personnel will notify the Trauma Center.
- ❸ A backboard is not required for spinal motion restriction (SMR) and may cause harm as well as increased pain. Patients should not be transported on a backboard for the purpose of SMR. If a backboard is used for extrication, patients who are alert should then be logrolled onto the gurney prior to transport. The backboard may be used during patient transport for splinting of multiple simultaneous extremity fractures or to assist with maneuvering the unconscious patient. In all cases, the backboard should be removed immediately if causing respiratory compromise.
- ❹ Patients with crush injury require large volumes of fluid resuscitation. Patients with prolonged entrapment will require maintenance fluids. IO access should be considered when attempts at IV access are not successful if: 1) prolonged entrapment is likely (> 30 minutes) and/or 2) there are signs of hyperkalemia and/or 3) there is risk of crush syndrome requiring medication administration.
- ❺ Flush the IV line with normal saline after each medication. Administration of Calcium and Bicarbonate together will cause precipitation of the medication.
- ❻ The duration of action of the medications is approximately 30 minutes. Contact Base to discuss re-dosing the medications if persistent signs of hyperkalemia or if the patient will not arrive at the hospital within 30 minutes.
- ❼ These medications should be administered prior to release of the compressive force to prevent complications from the cellular toxins that enter the circulation upon extrication of the patient. Calcium stabilizes the cardiac muscle and should be administered first.
- ❽ Tourniquet placement PRIOR to extrication is a last resort for patients who are at risk for crush syndrome in whom vascular access cannot be established or when transport time is anticipated to be > 30 minutes. The tourniquet must completely occlude venous and arterial flow in order to protect the patient from crush syndrome. Establish vascular access and cardiac monitoring immediately after extrication and be prepared to treat symptoms of crush syndrome.
- ❾ In patients meeting an indication for TXA, administer fluid resuscitation with Normal Saline and TXA concurrently.

**Base Hospital Contact: Contact the Trauma Center for patients not meeting criteria for determination of death per [Ref 814](#).**

1. Prioritize rapid transport for patients who do not meet [Ref. 814](#) ❶
2. Immediately control major bleeding ([MCG 1370](#))  
Apply tourniquet prn
3. Assess airway and initiate basic and/or advanced airway maneuvers prn ([MCG 1302](#)) ❷  
Ventilate with **high flow Oxygen 15 L/min**
4. Begin chest compressions
5. Perform bilateral needle thoracostomy for suspected tension pneumothorax ([MCG 1335](#))
6. Initiate cardiac monitoring ([MCG 1308](#))  
Assess cardiac rhythm
7. If shockable rhythm (V-Fib/V-Tach) identified:  
Defibrillate V-Fib/V-Tach at 200J or per manufacturer's instructions

For penetrating trauma: ❸

Defibrillate while prioritizing immediate transport

For blunt trauma: ❹ ❺

Initiate resuscitation on scene

If organized rhythm is not restored after defibrillation x3 or patient converts to nonshockable rhythm, refer to [Ref. No. 814](#) for determination of death

**CONTACT BASE** if needed for guidance on continued resuscitation or transport

8. Provide spinal motion restriction (SMR) if indicated ([MCG 1360](#))  
Do not delay transport for SMR ❻
9. Establish vascular access en route ([MCG 1375](#))  
Two large bore IV catheters (16 or 18 gauge) preferred  
Establish IO if unable to establish IV access
10. **Normal Saline 2L IV/IO rapid infusion**  
Administer through two sites simultaneously if possible

**SPECIAL CONSIDERATIONS**

- ❶ Rapid transport after hemorrhage control is the priority for all patients with severe trauma. With the exception of hemorrhage control, needle thoracostomy, and initiation of CPR, all other procedures may be deferred for immediate ambulance loading of patient and performed en route.
- ❷ Bag-mask ventilation (BMV) with a viral filter is the preferred initial method of airway management. An advanced airway may be placed during transport or if BMV is difficult or ineffective. Supraglottic airway is preferred unless contraindicated. Paramedics should use judgment based on patient characteristics, circumstances, and skill level when selecting the advanced airway modality.
- ❸ Patients with penetrating trauma should receive defibrillation while still prioritizing early transport.
- ❹ Patients in cardiac arrest with hanging or submersion mechanisms are asphyxial in the large majority of cases and should be considered a medical cardiac arrest, and therefore managed in accordance with TP-1210-Cardiac Arrest with transport destination per Ref. No. 516. Trauma center destination in cases with ROSC should only be considered if there is strong evidence of cervical spine injury.
- ❺ Sudden cardiac death can result from blunt cardiac injury (commotio cordis) triggering V-fib/V-tach. Unlike major trauma resulting in hemorrhagic shock, patients with this mechanism typically have **minimal external trauma** and should be treated with immediate defibrillation on scene. Patients with multisystem blunt trauma in persistent cardiac arrest without organized rhythm should generally not be transported. If commotio cordis is the suspected mechanism with minimal external trauma and the patient remains in V-fib/V-tach after three defibrillations, contact Base to discuss timing of transport versus termination for futility.
- ❻ For patients in traumatic arrest, spinal motion restriction (SMR) using a backboard causes harmful delays in care. However, a backboard may be helpful to assist in patient movement and to support chest compressions.

**Base Hospital Contact: Required for patients who meet Trauma Center criteria or guidelines. ①**  
**Notify the receiving Trauma Center as soon as possible for all patient transports.**

1. Immediately control major bleeding ([MCG 1370](#))  
Apply tourniquet prn
2. Assess airway and initiate basic and/or advanced airway maneuvers prn ([MCG 1302](#)) ②
3. For traumatic arrest, treat per [TP 1243, Traumatic Arrest](#)
4. Provide spinal motion restriction (SMR) if indicated ([MCG 1360](#))  
For alert patients, logroll off the backboard (if used during extrication) and onto gurney prior to transport ③
5. Administer **Oxygen** prn ([MCG 1302](#))  
**High flow Oxygen 15 L/min** for all patients with shock or with suspected traumatic brain injury
6. If patient has an Unmanageable Airway ([MCG 1302](#)):  
Initiate immediate transport to MAR and **CONTACT BASE** en route
7. For anticipated prolonged extrication (> 30 minutes)  
Consider activating the Hospital Emergency Response Team (HERT), [Ref. 817](#)
8. For crush injury, treat in conjunction with [TP 1242, Crush Injury/Syndrome](#)
9. Initiate cardiac monitoring prn ([MCG 1308](#))
10. Establish vascular access prn ([MCG 1375](#))
11. Apply blanket to keep patient warm
12. Consider medical condition preceding accident and refer to appropriate treatment protocol prn ④

#### **MULTI-SYSTEM TRAUMA**

13. Perform needle thoracostomy for suspected tension pneumothorax ([MCG 1335](#))
14. For an open or sucking chest wound, cover with a commercially available vented chest seal or vented (3-sided) occlusive dressing ⑤
15. For poor perfusion with hypotension ([MCG 1355](#)):  
**Normal Saline 250mL IV/IO rapid infusion ⑥**  
**CONTACT BASE** to discuss further fluid resuscitation
16. For patients within 3 hours of injury and one or more of the following:  
Systolic blood pressure (SBP) <90 mmHg, OR  
Heart Rate > SBP, OR

Uncontrolled external hemorrhage ([MCG 1370](#))

**Tranexamic Acid (TXA) 1 gram in 50-100mL Normal Saline IV/IO, infuse over 10 minutes 7**

17. Cover eviscerated organs with a moist non-adhering dressing

18. For pain management prn ([MCG 1345](#))

**Fentanyl 50mcg (1mL) slow IV/IO push or IM/IN**

**Morphine 4mg (1mL) slow IV/IO push or IM**

**Ketorolac** is contraindicated for multi-system trauma

**CONTACT BASE** for additional pain management:

May repeat as above up to maximum total dose Fentanyl 250mcg or Morphine 20mg

19. For nausea or vomiting: **8**

**Ondansetron 4mg ODT/IV/IM**, may repeat x1 in 15 min prn

#### ISOLATED HEAD INJURY

20. Administer **high flow Oxygen 15 L/min** for all patients with suspected traumatic brain injury **9**  
Continually assess patient's airway and ventilation status, assist prn **10**

21. For SBP ≤ 90mmHg:

**Normal Saline 1L IV/IO rapid infusion 11**

Reassess after each 250 mL increment for evidence of volume overload (pulmonary edema); stop infusion if pulmonary edema develops

**CONTACT BASE** for persistent poor perfusion ([MCG 1355](#)) after **Normal Saline 1L**

22. For nausea or vomiting: **7**

**Ondansetron 4mg ODT/IV/IM**, may repeat x1 in 15 min prn

23. Transport with head of gurney elevated to 30 degrees when possible **12**

24. If patient develops seizure activity, treat in conjunction with [TP 1231, Seizure](#)

25. For pain management prn ([MCG 1345](#))

For an alert and oriented patient with GCS 15:

**Fentanyl 50mcg (1mL) slow IV/IO push or IM/IN**

**Morphine 4mg (1mL) slow IV/IO push or IM**

**Ketorolac** is contraindicated for head injury

**CONTACT BASE** for additional pain management or for initial orders if patient not alert and oriented with GCS 15



May provide or repeat as above up to maximum total dose Fentanyl 250mcg or Morphine 20mg

**ISOLATED EXTREMITY INJURY**

26. For pain management prn ([MCG 1345](#))
27. For poor perfusion ([MCG 1355](#)):  
**Normal Saline 1L IV/IO rapid infusion**  
Reassess after each 250 mL increment for evidence of volume overload (pulmonary edema); stop infusion if pulmonary edema develops  
**CONTACT BASE** for persistent poor perfusion to obtain order for additional **Normal Saline 1L IV/IO**
28. For patients within 3 hours of injury with uncontrolled extremity hemorrhage despite pressure and tourniquets ([MCG 1370](#))  
**Tranexamic Acid (TXA) 1 gram in 50-100mL Normal Saline IV/IO, infuse over 10 minutes ⑦**
29. Splint and dress injuries prn  
For distal extremity fractures with poor neurovascular status distal to injury – realign and stabilize extremity  
Mid-shaft femur – apply traction splint per manufacturer guidelines<sup>13</sup>  
All other fractures/dislocations – splint in position of comfort  
For amputations – rinse off debris (do not manually debride), wrap with saline-moistened sterile gauze and ace wrap, then apply a splint for potential underlying fracture<sup>14</sup>

**SPECIAL CONSIDERATIONS**

- ❶ For patients requiring transport to a Trauma Center per [Ref. 506](#), contact the receiving Trauma Center for Base Medical Direction and notification. If the Base Hospital is contacted and the Base redirects transport to a Trauma Center, Base personnel will notify the Trauma Center.
- ❷ Transport should be prioritized over advanced airway placement unless BMV is ineffective. Advanced airway may be placed during transport; supraglottic airway is preferred unless contraindicated. Paramedics should use judgment based on patient characteristics, circumstances, and skill level when selecting the advanced airway modality.
- ❸ A backboard is not required for spinal motion restriction (SMR) and may cause harm as well as increased pain. Patients should not be transported on a backboard for the purpose of SMR. If a backboard is used for extrication, patients who are alert should then be logrolled onto the gurney prior to transport. The backboard may be used during patient transport for splinting of multiple simultaneous extremity fractures or to assist in maneuvering the unconscious patient. In all cases, the backboard should be removed immediately if causing respiratory compromise.
- ❹ Traumatic events may be due to a medical emergency, particularly single-vehicle accidents and unexplained falls.
- ❺ Placement of a vented dressing can prevent conversion of an open pneumothorax to a tension pneumothorax. However, tension pneumothorax may still develop in the presence of a vented dressing and should be treated with needle thoracostomy. Furthermore, needle thoracostomy in a patient with evidence of tension pneumothorax should not be delayed for placement of dressing.
- ❻ Aggressive fluid resuscitation increases vascular pressure and dilutes clotting factors, which may increase internal bleeding.
  - In patients with blunt trauma and poor perfusion: administer fluids to target SBP  $\geq$  90mmHg.
  - In patients with penetrating trauma and poor perfusion: administer fluids to target SBP  $\geq$  70mmHg if patient has normal mental status (permissive hypotension). Patients with ALOC or SBP  $<$  70mmHg should receive fluids until their mental status and SBP improve.
  - In patients with possible traumatic brain injury: permissive hypotension is contraindicated and SBP should be maintained  $\geq$  90mmHg.
- ❼ In patients meeting an indication for TXA, administer fluid resuscitation with normal saline and TXA concurrently.
- ❽ Vomiting should be prevented and/or immediately treated in patients with head injury, since it increases intra-cranial pressure and can compromise the patient's airway.
- ❾ Traumatic brain injury presents with altered mental status after head injury. Any hypoxic episode, even brief, is associated with worse patient outcome for patients with traumatic brain injury.
- ❿ Hyperventilation reduces blood flow to the brain by reducing CO<sub>2</sub> and is associated with worse outcomes in severe head injuries. The exception to this is presence of elevated intra-cranial pressure (ICP) with signs of impending herniation (severe ALOC without motor response or with posturing and a unilateral 'blown pupil'). In this case, **mild** hyperventilation of approximately 20 breaths per minute should be used to maintain an ETCO<sub>2</sub> of 30-35mmHg. This mild hyperventilation reduces blood flow

to the brain to decrease ICP until the patient receives definitive surgical care. For patients without elevated ICP, hyperventilation is harmful.

- ⑪ Any hypotension increases mortality in patients with traumatic brain injury. Normal Saline should be initiated to maintain SBP  $\geq$  90mmHg at all times but can be withheld if the blood pressure is normal.
- ⑫ A head-elevated position at about 30 degrees reduces intra-cranial pressure and improves respiratory status. Patients in a cervical collar may have their head elevated if there is no concern for thoracic or lumbar spine injury. Reverse Trendelenburg is another option for patients that cannot be seated. Patients who are hypotensive should be maintained supine unless airway compromise requires repositioning.
- ⑬ Open femur fracture is not a contraindication to apply the traction splint. If the bone is protruding and there is gross contamination, wash with saline prior to applying the splint.
- ⑭ If the amputated part is available, similar care should be taken to rinse off any gross debris, wrap the part with saline-moistened sterile gauze, seal in plastic and place indirectly on ice after wrapping; do not submerge in water or place directly on ice. Transport the amputated part with the patient and leave it with hospital staff.

Steps 1-7 apply to **all** patient contacts. For patients with suspected COVID-19 infection, the remainder of this protocol should be used in addition to the appropriate Treatment Protocol(s) based on Provider Impression(s).

**Base Hospital Contact: Required for severe respiratory distress and respiratory failure.**

1. Assume that all patients, regardless of dispatch complaint, may have COVID-19 ❶  
Minimum recommended Personal Protective Equipment (PPE) for ALL patient encounters is a surgical mask, eye protection, and gloves ❷
2. Utilize this TP in addition to the appropriate TPs based on provider impression(s)
3. Don PPE prior to approaching the patient, including surgical mask or N95 as appropriate, eye protection, and gloves, and gown if available ❸ ❹
4. Perform an initial screening of all patients for COVID-19 ❺
5. Hand the patient a surgical mask to self-apply ❻
6. For patients in cardiac arrest, an N95 or P100 mask is required along with eye protection and gloves, and gown if available, prior to approaching the patient ❹
7. Assess airway and initiate basic and/or advanced airway maneuvers prn ([MCG 1302](#))  
Aerosol-generating procedures (including suctioning, CPAP, bag-mask ventilation, and advanced airway placement) require N95 masks and gowns for all providers ❸  
If advanced airway is required, Supraglottic Airway is preferred to endotracheal intubation  
Use of a viral filter is encouraged for all positive-pressure ventilation
8. For suspected COVID-19 patients with respiratory distress, use in conjunction with [TP 1237, Respiratory Distress](#)
9. Administer **Oxygen** for O<sub>2</sub> sat <94% at the lowest flow possible to achieve O<sub>2</sub> sat ≥94%  
Place a surgical mask on the patient over the oxygen delivery device
10. For hypoxic patients without severe distress provide supplemental oxygen, consider positioning right or left lateral decubitus or prone during transport if COVID-19 is suspected.
11. For poor perfusion:  
**Normal Saline 1L IV rapid infusion ❼**  
Reassess after each 250mL increment for evidence of volume overload (pulmonary edema); stop infusion if pulmonary edema develops
12. During transport, minimize possible exposures by ensuring appropriate PPE for EMS personnel in the patient compartment and, if possible, adjust the ventilation system air changes/hour to the highest rate and consider opening windows ❸ ❾
13. Notify the receiving hospital for any patient with positive COVID-19 screening  
Provide notification for all patients, including those who are transported BLS

Prior to entry into the hospital, unless transitioning care outside of ED, one provider should doff any contaminated PPE (gloves/gown) to enter and discuss plan for handoff with the triage RN. You may be directed to an alternative triage area or handoff may occur outside the hospital.

14. Discontinue all aerosol-generating procedures (including nebulized medication and/or CPAP prior to entry into the hospital triage area); discuss with the triage RN before entry for patients in severe distress requiring these interventions so that appropriate handoff can be arranged<sup>10</sup>
15. For documentation:
  - 1) Positive COVID-19 screening
  - 2) Level of PPE worn in your narrative summary
  - 3) Consider the following Provider Impressions and document as appropriate:

Cold / Flu Symptoms (COFL) - For minor respiratory illness in a patient without shortness of breath or wheezing; must have normal respiratory rate and O<sub>2</sub> sat.

Respiratory Distress / Bronchospasm (SOBB) - For COPD/asthma exacerbations and any bronchospasms/wheezing not from pulmonary edema.

Respiratory Distress / Other (RDOT) - For patients with pulmonary disease that is not edema or bronchospasm, includes suspected pneumonia, PE, pneumothorax and non-pulmonary and unknown causes of respiratory distress.

Respiratory Arrest / Failure (RARF) - For patients requiring positive-pressure ventilation and/or hypoxia despite 100% oxygen.

Fever (FEVR) - For reported or tactile fever that is NOT suspected sepsis. For sepsis use PI Sepsis.

Sepsis (SEPS) - For patients with suspected sepsis (i.e., signs suggestive of sepsis including fever, tachycardia, suspected infection).

Other Provider Impressions may apply for patients with other primary complaints who also have signs and symptoms potentially consistent with COVID-19

**SPECIAL CONSIDERATIONS**

- ❶ Do not rely on dispatch pre-arrival screening to catch all possible screened positive patients, repeat screening yourself. Patients with COVID-19 may present with complaints other than shortness of breath or fever. Travel or contact with a known case is NOT required for a positive screen.
- ❷ This PPE is recommended as the supply chain allows. It is preferable to change the mask after every encounter with a patient who screens positive. If supplies are limited, masks, including surgical masks and N95 masks, may be considered for limited reuse on up to 5 patient encounters unless it is visibly soiled, contaminated with bodily fluids, or used in a high-risk situation (i.e., aerosolizing procedures). More information on reuse and extended use can be found at:  
<https://www.cdc.gov/coronavirus/2019-ncov/hcp/ppe-strategy/decontamination-reuse-respirators.html>
- ❸ Droplet and contact precautions should be taken for all potential COVID-19 patients. Airborne and contact precautions should be taken for all aerosolizing procedures including suctioning, CPAP, nebulized medications, bag-mask ventilation, advanced airway placement and chest compression, this includes an N95 or P100 respirator and gown, in addition to the eye protection and gloves required for all patients screening positive for potential COVID-19. Goggles are the preferred eyewear. For airway management, a face shield worn over the eyewear of the operator can provide additional protection during this high-risk procedure. If no gowns are available, wear EMS issued raincoat; doff it in ambulance bay into a bio-container bag; prior to reuse, wipe it down with the same cleaners used to decon the ambulance and then rinse with water.
- ❹ N95 masks are preferred but should be prioritized for use during high-risk aerosolizing procedures if supplies are limited.
- ❺ A positive screen is any patient with any ONE of the following:  
Symptom suggestive of COVID-19: fever (reported or tactile), chills, cough, shortness of breath, body aches, nausea, vomiting, and/or diarrhea, OR  
Under quarantine/isolation for potential or confirmed COVID-19, OR  
Had any contact with a person who is undergoing testing or confirmed to have COVID-19
- ❻ Patients may be contagious and transmit COVID-19 even before developing symptoms, mask ALL patients, not just those who have a positive COVID-19 screen, as supply chain allows. For patients requiring supplemental oxygen, place the surgical mask over the oxygen delivery device. This does not apply to patients requiring positive-pressure ventilation.
- ❼ Potential COVID-19 patients should receive IVF if they have signs of poor perfusion. Patients with suspected sepsis should continue to be managed with IVF per [TP 1204, Sepsis](#). Patients remain undifferentiated in the field. If in doubt, it is reasonable to administer Normal Saline up to 1L.
- ❽ Allow one family member (parent or caregiver) to be transported, if possible. If riding in the transport vehicle, they should wear a surgical mask.
- ❾ All areas of the transport cabin are exposed (as well as the driver compartment if connected). The higher air changes/hour may reduce the concentration of infectious particles, but does not eliminate risk.

- ⑩ All aerosol generating procedures must be discontinued while moving through the ED hallways, except in the case of an intubated patient with use of a viral filter, in which case chest compressions and ventilations may continue.



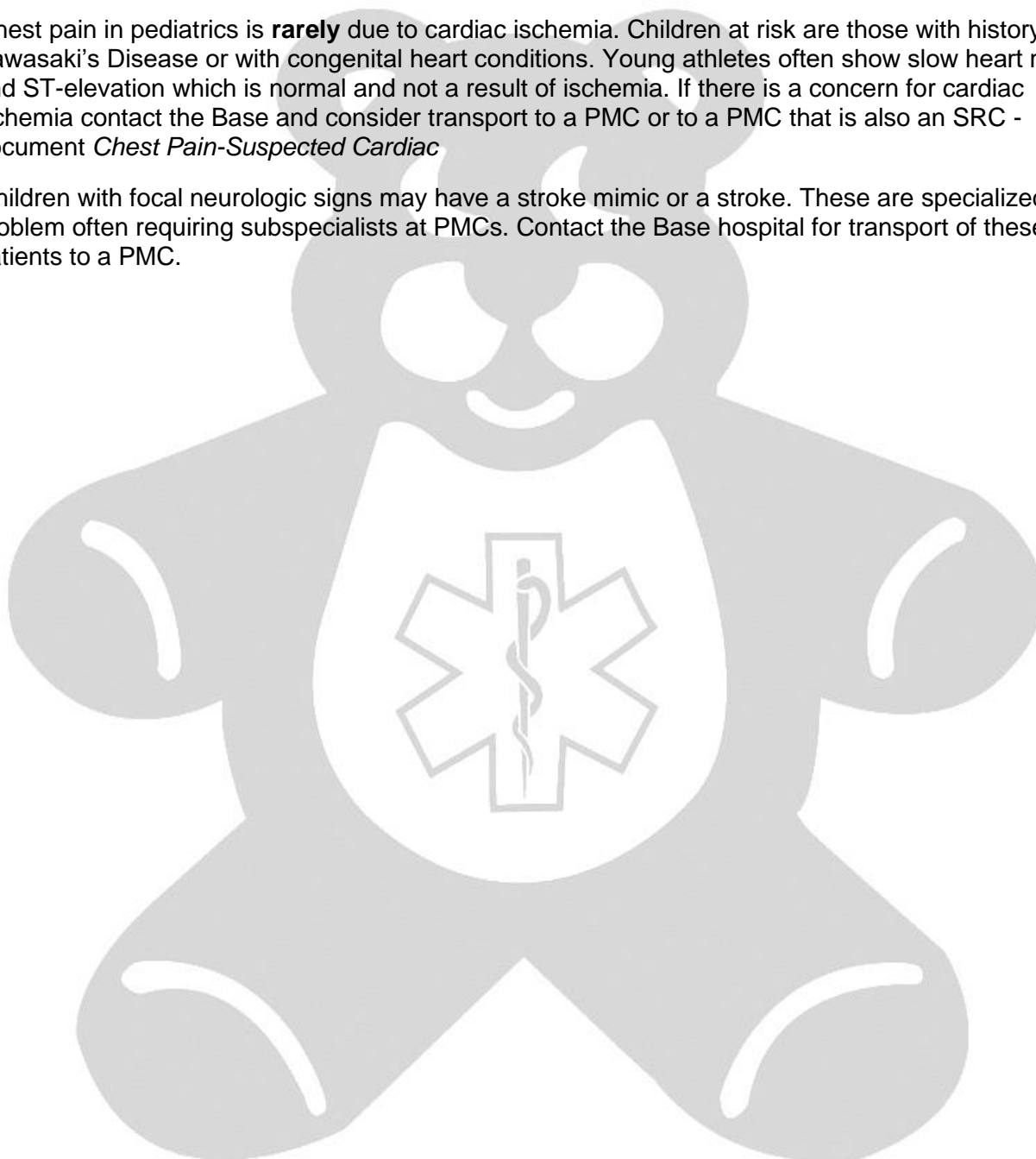
1. Assess airway and initiate basic and/or advanced airway maneuvers prn ([MCG 1302](#))
2. Control external hemorrhage/bleeding prn ([MCG 1370](#))
3. Administer **Oxygen** prn ([MCG 1302](#))
4. Assess for signs of trauma  
For traumatic injury, treat in conjunction with [TP 1244-P, Traumatic Injury](#)
5. Initiate cardiac monitoring prn ([MCG 1308](#))  
For suspected cardiac ischemia or dysrhythmia, perform 12-lead ECG and **CONTACT BASE ①**  
For patients with dysrhythmias, treat per [TP 1212-P, Cardiac Dysrhythmia - Bradycardia](#) or [TP 1213-P, Cardiac Dysrhythmia - Tachycardia](#)  
If patient with palpitations but normal sinus rhythm on 12-lead ECG – document Provider Impression as *Palpitations*
6. Establish vascular access prn ([MCG 1375](#))
7. Assess and document pain ([MCG 1345](#))  
Consider the following Provider Impressions:  
If chest pain present without suspicion of cardiac cause – document *Chest Pain – Not Cardiac*  
If pain in neck or back without trauma – document *Body Pain – Non-traumatic*  
If headache and no report or signs of trauma and normal physical assessment – document *Headache – Non-traumatic*
8. For pain management: refer to [MCG 1345, Pain Management](#)  
Dose per [MCG 1309](#)
9. For nausea or vomiting in patients  $\geq 4$  years old:  
**Ondansetron 4mg ODT** and treat in conjunction with [TP 1205-P, GI/GU Emergencies](#)
10. For patients with complaints of weakness  
Assess neurologic exam; if focal findings present or stroke suspected, treat in conjunction with [TP 1232-P, Stroke/ CVA/ TIA](#). **CONTACT BASE** and transport to a PMC **②**  
If no focal weakness present and complaint of generalized weakness – document *Weakness – General*
11. Consider the following Provider Impressions:  
If cold/cough symptoms without respiratory distress or wheezing – document *Cold/Flu Symptoms*  
If isolated pain or swelling in extremity – document *Extremity Pain/Swelling – Non-traumatic*





**SPECIAL CONSIDERATIONS**

- ❶ Chest pain in pediatrics is **rarely** due to cardiac ischemia. Children at risk are those with history of Kawasaki's Disease or with congenital heart conditions. Young athletes often show slow heart rates and ST-elevation which is normal and not a result of ischemia. If there is a concern for cardiac ischemia contact the Base and consider transport to a PMC or to a PMC that is also an SRC - document *Chest Pain-Suspected Cardiac*
- ❷ Children with focal neurologic signs may have a stroke mimic or a stroke. These are specialized problem often requiring subspecialists at PMCs. Contact the Base hospital for transport of these patients to a PMC.





**Treatment Protocol: DIABETIC EMERGENCIES**

**Ref. No. 1203-P**

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1. Assess airway and initiate basic and/or advanced airway maneuvers prn ([MCG 1302](#))
2. Administer **Oxygen** prn ([MCG 1302](#))
3. Initiate cardiac monitoring prn ([MCG 1308](#))
4. Establish vascular access prn ([MCG 1375](#))
5. Check blood glucose
6. For blood glucose < 60 mg/dL:  
**Oral glucose preparation or Glucopaste 15gm PO (4 years or older)** if patient awake and alert  
OR  
**Dextrose 10% 5mL/kg IV/IO** ①  
≤ 24kg: **Dextrose 10% 5mL/kg IV/IO in 1mL/kg** increments, dose per [MCG 1309](#), reassess for clinical improvement after every 1mL/kg. Administer slow IVP. May repeat as needed, maximum total dose 5mL/kg. Recheck glucose prn after 3mL/kg infused  
> 24kg: **Dextrose 10% administer 125mL IV/IO** and reassess, continue infusion as needed with maximum dose of 5mL/kg  
  
**CONTACT BASE** for persistent hypoglycemia for repeat dose of Dextrose 10% 5mL/kg IV in 1mL/kg increments  
  
Document Provider Impression as *Hypoglycemia* ②  
If unable to obtain venous access, **Glucagon (1mg/mL) IM** per [MCG 1309](#)  
<1 year of age: **Glucagon 0.5mL IM**, may repeat x1 in 20 min prn  
≥1 year of age: **Glucagon 1.0mL IM**, may repeat x1 in 20 min prn
7. For blood glucose > 200 mg/dL:  
Document Provider Impression as *Hyperglycemia* ③  
  
For blood glucose > 250 mg/dL:  
**Normal Saline 10mL/kg IV rapid IV infusion** per [MCG 1309](#)
8. For poor perfusion ([MCG 1355](#)):  
**Normal Saline 20mL/kg IV/IO rapid infusion** per [MCG 1309](#)  
For persistent poor perfusion, treat in conjunction with [TP 1207-P, Shock/Hypotension](#)
9. For nausea or vomiting in patients ≥ 4 years old:  
**Ondansetron 4mg ODT**



**SPECIAL CONSIDERATIONS**

- ① Use judgment based on the clinical status of the patient to determine whether IO placement for dextrose and/or fluid administration prior to hospital arrival is warranted. For altered patients who show signs of shock/poor perfusion and/or extremis with severe *HYPERglycemia* or *HYPOglycemia* and an IV cannot be obtained, an IO may be placed for fluid resuscitation or treatment with dextrose. Refer to ([MCG 1375](#)).
- ② Pediatric patients with hypoglycemia who are successfully treated with oral glucose or Dextrose 10% IV and then their parent wishes to decline transport to the hospital should be discouraged to do so, especially if they have abnormal vital signs, fever, are taking long acting hypoglycemic agents possible ingestion or poisoning, or if they DO NOT have a history of diabetes mellitus as these patients are at high risk for recurrent hypoglycemic episodes.  
  
Long Acting hypoglycemic agents
  - Sulfonylureas: gliclazide, glimepiride, glipizide, gliquidone, glyburide, glycopyramide,
  - Thiazolidinediones (TZDs): pioglitazone (Actos), rosiglitazone (Avandia), troglitazone (Rezulin)
  - Alpha-glucosidase inhibitors: acarbose, miglitol, voglibose
  - Meglitinides – nateglinide, repaglinide
  - Combination drugs: glipizide and metformin (Metaglip), glyburide and metformin (Glucovance), pioglitazone and glimepiride (Duetact), pioglitazone and metformin (ACTOplus Met), rosiglitazone and metformin (Avandamet), rosiglitazone and glimepiride (Avandaryl)
- ③ Glucagon is effective only if there are sufficient glycogen stores in the liver. Patients with low glycogen stores such as young infant, severe malnutrition, cirrhosis, or adrenal insufficiency may not respond to glucagon.
- ④ In pediatric patients with hypoglycemia consider causes such as medication error or medication given without appropriate oral intake, infection, or toxins. Survey scene and ask family for types of medications in the home including those in various forms (e.g., pill, patch, drops, salves, inhaled or herbal). Caretakers of pediatric patients should always be encouraged to have patient be transported to the hospital for evaluation as hypoglycemia in this population is rare as compared to adults and is often caused by serious disease or poisonings.
- ⑤ Patients with hyperglycemia are at risk for significant volume losses leading to dehydration and electrolyte abnormalities. Fluid resuscitation with **Normal Saline** is recommended until their glucose can be lowered with medications. Hyperglycemia can also be associated with trauma, infection, or other serious illness. For patients with elevated glucose requiring fluids IV Normal Saline should be given – only those patients who show signs of poor perfusion and an IV cannot be obtained would have an IO placed for fluid resuscitation.



**Treatment Protocol: FEVER / SEPSIS**

**Ref. No. 1204-P**

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1. Assess airway and initiate basic and/or advanced airway maneuvers prn ([MCG 1302](#))
2. Administer **Oxygen** prn ([MCG 1302](#))
3. Advanced airway prn ([MCG 1302](#))
4. Initiate cardiac monitoring prn ([MCG 1308](#))
5. Establish vascular access prn ([MCG 1375](#))
6. For suspected sepsis: ❶  
**Normal Saline 20mL/kg IV/IO rapid infusion** per [MCG 1309](#)  
**CONTACT BASE** to obtain order for additional **Normal Saline 20mL/kg IV/IO** per [MCG 1309](#)  
Document Provider Impression of [Sepsis](#) ❶  
For persistent poor perfusion ([MCG 1355](#)), treat in conjunction with [TP 1207-P](#),  
[Shock/Hypotension](#)
7. Check blood glucose prn;  
< 60mg/dL or >250mg/dL treat in conjunction with [TP 1203-P, Diabetic Emergencies](#)
8. If fever present without signs of sepsis or poor perfusion:  
Perform passive cooling measures and cover with blankets if shivering occurs  
Document Provider Impression of [Fever](#) ❷ ❸ ❹
9. For nausea or vomiting in patients ≥ 4 years old:  
**Ondansetron 4mg ODT**
10. For pain management: refer to [MCG 1345, Pain Management](#)  
Dose per [MCG 1309](#)



**SPECIAL CONSIDERATIONS**

- ❶ Sepsis is defined as the body's response to infection and *may* include fever, tachycardia or bradycardia, tachypnea, and signs of poor perfusion. Other signs of infection may be present such as cough (e.g., pneumonia), painful urination (e.g., urinary tract infection), abdominal pain (e.g., appendicitis), headache (e.g., meningitis), or a red swollen extremity (e.g., cellulitis, or necrotizing fasciitis). Septic shock is a continuum of signs and symptoms which includes the presence of hypotension or evidence of poor perfusion. If infection is present and sepsis with or without shock is present document provider impression as *Sepsis*.
- ❷ Fever is a natural response of the body to fight infection and may be present without signs of sepsis. Often children with a fever have tachycardia, however if tachycardia is greater than that explained by the fever (>180 in infants and >140 in children) consider sepsis. If fever is present without signs of sepsis (skin hot to touch and tachycardia) or septic shock (signs of poor perfusion), document the provider impression as *Fever*.
- ❸ For patients presenting with fever, obtain travel history, and if travel history positive contact the Medical Alert Center to determine risk for infectious disease requiring special isolation procedures or transport.
- ❹ Infants and small children are at high risk for hypothermia due to their large surface area to body mass ratio, reduced ability to shiver, and limited body fat. Infants with sepsis may present with fever or hypothermia.

For Ebola Virus Disease: Patient Assessment and Transportation Guidelines can be accessed at the EMS Agency website or the following link

[https://file.lacounty.gov/SDSInter/dhs/1040046\\_LACoEbola911FlowChart-CongoDRC20180524FINAL.pdf](https://file.lacounty.gov/SDSInter/dhs/1040046_LACoEbola911FlowChart-CongoDRC20180524FINAL.pdf)





**Treatment Protocol: GI / GU EMERGENCIES**

**Ref. No. 1205-P**

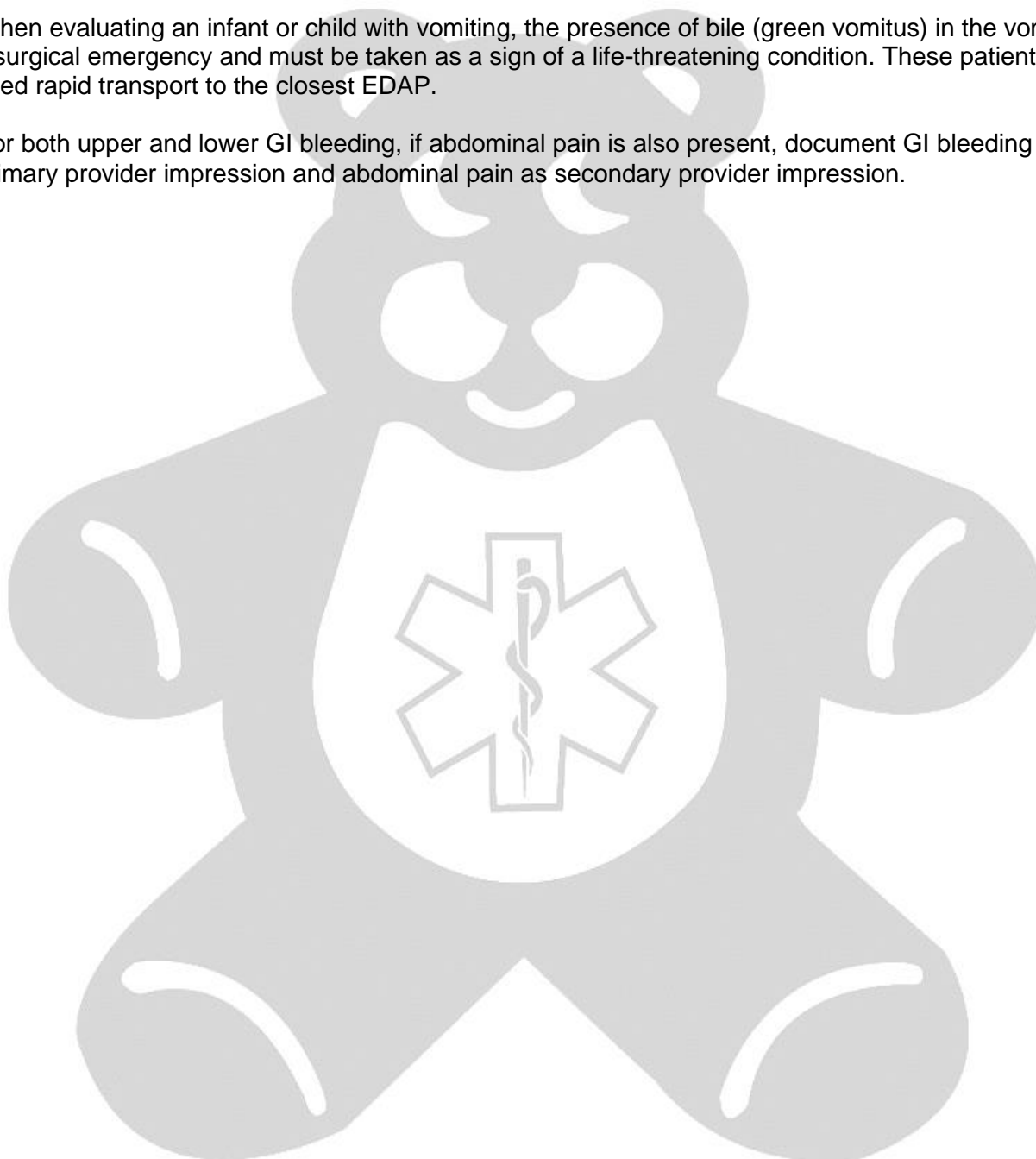
[1200 Table of Contents](#)

1. Assess airway and initiate basic and/or advanced airway maneuvers prn ([MCG 1302](#))
2. Administer **Oxygen** prn ([MCG 1302](#))
3. Initiate cardiac monitoring prn ([MCG 1308](#))
4. Establish vascular access prn ([MCG 1375](#))
5. For poor perfusion ([MCG 1355](#)):  
**Normal Saline 20mL/kg IV rapid infusion** per [MCG 1309](#)  
For persistent poor perfusion, treat in conjunction with [TP 1207-P, Shock/Hypotension](#)
6. Assess and document pain ([MCG 1345](#))  
If abdominal or pelvic pain during pregnancy, or vaginal bleeding with known or suspected pregnancy treat per [TP 1217-P, Pregnancy Complications](#)  
Consider the following Provider Impressions:  
If abdominal or pelvic pain – document [Abdominal Pain/Problems](#)  
If pain in penis, scrotum or testes in a male or complaints of vaginal symptoms in a female, or if for sexual assault – document [Genitourinary Disorder](#)
7. For pain management: refer to [MCG 1345, Pain Management](#)  
Dose per [MCG 1309](#)
8. For nausea or vomiting in patients  $\geq 4$  years old:  
**Ondansetron 4mg ODT**
9. Consider the following Provider Impressions:
  - If nausea or vomiting present in the absence of abdominal pain or diarrhea – document [Nausea/Vomiting 1](#)
  - If vomiting blood or coffee ground material and/or tarry/black stools – document [Upper GI Bleeding 2](#)
  - If vaginal bleeding without known pregnancy – document [Vaginal Bleeding](#)
  - If diarrhea without hypotension – document [Diarrhea](#)
  - If bleeding per rectum, or tarry/black stools – document [Lower GI Bleeding 2](#)



**SPECIAL CONSIDERATIONS**

- ❶ When evaluating an infant or child with vomiting, the presence of bile (green vomitus) in the vomit is a surgical emergency and must be taken as a sign of a life-threatening condition. These patients need rapid transport to the closest EDAP.
- ❷ For both upper and lower GI bleeding, if abdominal pain is also present, document GI bleeding as primary provider impression and abdominal pain as secondary provider impression.





**Treatment Protocol: MEDICAL DEVICE MALFUNCTION**

**Ref. No. 1206-P**

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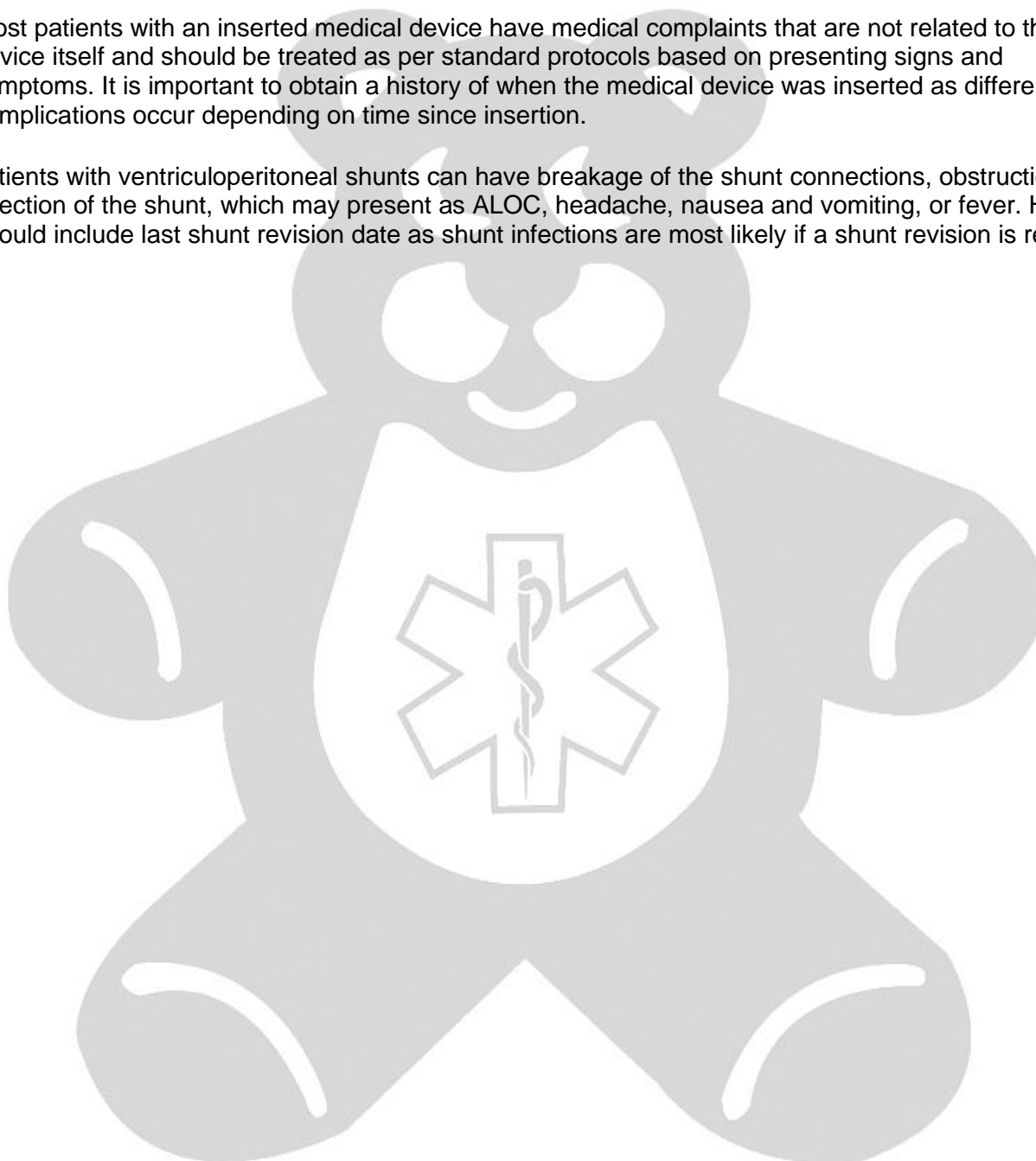
1. Assess airway and initiate basic and/or advanced airway maneuvers prn ([MCG 1302](#))
2. Administer **Oxygen** prn ([MCG 1302](#))
3. Establish type of medical device inserted ❶
4. Establish vascular access prn ([MCG 1375](#))
5. For poor perfusion ([MCG 1355](#)):  
**Normal Saline 20mL/kg IV rapid infusion** per [MCG 1309](#)  
For persistent poor perfusion, treat in conjunction with [TP 1207-P, Shock/Hypotension](#)
6. Assess and document pain ([MCG 1345](#))
7. For pain management: refer to [MCG 1345, Pain Management](#)  
Dose per [MCG 1309](#)
8. For nausea or vomiting in patients  $\geq 4$  years old:  
**Ondansetron 4mg ODT**
9. Document *Medical Device Malfunction* as the Provider Impression if the patient's presentation suggests malfunction of the medical device, otherwise treat as per applicable protocol
  - Insulin Pump: Check blood glucose prn and treat in conjunction with [TP 1203-P, Diabetic Emergencies](#)
  - Vagal Nerve Stimulation devices: Treat presenting symptoms; for seizure treat per [TP 1231-P, Seizure – Active](#)
  - Ventricular Assist Device: **CONTACT BASE** and refer to [MCG 1325](#)
  - Ventriculoperitoneal (VP) Shunt: Treat presenting symptoms ❷
  - Pacemaker or Automated Internal Defibrillator: Treat presenting symptoms and obtain 12-lead ECG prn ([MCG 1308](#))





**SPECIAL CONSIDERATIONS**

- ❶ Most patients with an inserted medical device have medical complaints that are not related to the device itself and should be treated as per standard protocols based on presenting signs and symptoms. It is important to obtain a history of when the medical device was inserted as different complications occur depending on time since insertion.
- ❷ Patients with ventriculoperitoneal shunts can have breakage of the shunt connections, obstruction, or infection of the shunt, which may present as ALOC, headache, nausea and vomiting, or fever. History should include last shunt revision date as shunt infections are most likely if a shunt revision is recent.





**Treatment Protocol: SHOCK / HYPOTENSION**

**Ref. No. 1207-P**

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**BASE HOSPITAL CONTACT REQUIRED.**

1. Assess airway and initiate basic and/or advanced airway maneuvers prn ([MCG 1302](#))  
Continually assess patient's airway and ventilation status
2. Administer **Oxygen** prn ([MCG 1302](#))  
**High-flow Oxygen 15L/min** for all patients in shock, regardless of SpO<sub>2</sub> ❶
3. Maintain supine if respiratory status allows ❷
4. Establish vascular access ([MCG 1375](#))  
For patients with hypotension and clinical evidence of poor perfusion ([MCG 1355](#)), establish IO catheter if unable to obtain peripheral venous access after 2 attempts ❸  
  
For IO placement in alert patients administer **Lidocaine 2% 0.5mg/kg (20mg/mL) slow IO push**, dose per [MCG 1309](#), may repeat once for infusion pain at half initial dose
5. Initiate cardiac monitoring ([MCG 1308](#))
6. Apply blanket to keep patient warm ❹
7. Consider etiology ❺  
For neonates, treat in conjunction with [TP 1216-P, Newborn/Neonatal Resuscitation](#)  
For patients with dysrhythmia, treat in conjunction with [TP 1212-P, Cardiac Dysrhythmia – Bradycardia](#) or [TP 1213-P, Cardiac Dysrhythmia – Tachycardia](#)  
For patients with traumatic injury, treat per [TP 1244-P, Traumatic Injury](#)  
For concern of overdose or toxic exposure, treat in conjunction with [TP 1241-P, Overdose/Poisoning/Ingestion](#)  
For patients with suspected sepsis, treat in conjunction with [TP 1204-P, Fever/Sepsis](#)
8. **Normal Saline 20mL/kg IV/IO rapid infusion** per [MCG 1309](#)
9. For patients with isolated hypotension without signs of poor perfusion and those who rapidly respond without intervention or to <20mL/kg Normal Saline document *Hypotension (HOTN)* as Provider Impression. For patients with hypotension with poor perfusion that require additional Normal Saline or Push-dose Epinephrine document as *Shock (SHOK)*
10. **CONTACT BASE** for shock and for additional **Normal Saline 20mL/kg IV/IO** per [MCG1309](#)
11. If clinical evidence of poor perfusion persists despite fluid infusion or pulmonary edema develops requiring cessation of fluid administration:  
**Push-dose Epinephrine** – mix 9mL Normal Saline with 1mL Epinephrine (0.1mg/mL) IV formulation in a 10mL syringe; administer **Push-dose Epinephrine (0.01mg/mL)**, dose per [MCG 1309](#) every 1-5 minutes as needed to maintain SBP > 70mmHg until hospital arrival ❻  
**CONTACT BASE** concurrent with initial dose of **Push-dose Epinephrine**



**SPECIAL CONSIDERATIONS**

- ① Shock is inadequate tissue perfusion, equivalent to poor perfusion for the purposes of this protocol. Consider Base Hospital Contact if hypotension/shock of unclear etiology. Use caution if the patient has known cyanotic congenital heart disease. Newborns requiring positive-pressure ventilation should receive 90 seconds of room air, and then start oxygen 15L/min if heart rate remains < 100 beats per minute and/or persistent shock.
- ② Maintaining a patient supine improves perfusion to vital organs; raising the lower limbs does not provide additional benefit. However, not all patients will tolerate a supine position, which can further compromise respiratory function and airway patency.
- ③ Peripheral venous access may be difficult to obtain in infants and small children. Consider IO placement as primary vascular access in extremis patients for whom venous access is unlikely to be achieved rapidly. For older children, make two attempts at venous access and, if unsuccessful, place an IO for vascular access.
- ④ Exposure to cold increases the likelihood of bleeding complications.
- ⑤ There are many etiologies of shock. The treatment protocols referenced here contain guidance on specific interventions beyond what is contained in this treatment protocol. Although <70 mmHg is used as a generic cut-off for hypotension in pediatric patients the level of systolic blood pressure varies by age and those thresholds are found in [MCG 1309](#) and can be used in decisions for fluid resuscitation. Consider Base Hospital Contact if hypotension/shock of unclear etiology.
- ⑥ Push-dose Epinephrine is appropriate for non-traumatic shock including cardiogenic shock. Additional doses beyond 10mL may need to be prepared for prolonged transports. For patients < 10kg, transfer the diluted Push-dose Epinephrine to a smaller (1mL or 3mL) syringe in order to administer the dose accurately.



**Treatment Protocol: AGITATED DELIRIUM**

**Ref. No. 1208-P**

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**Base Hospital Contact Required.**

1. Assess situation for safety; approach patient with caution and attempt verbal de-escalation ([MCG 1307](#))
2. Attain law enforcement (LE) assistance for physical restraint prior to approaching a patient if a weapon is visualized or the patient threatens violence. ([MCG 1307](#))
3. Assess airway and initiate basic and/or advanced airway maneuvers prn ([MCG 1302](#))  
Continually assess patient's airway and ventilation status ❶
4. Administer **Oxygen** prn ([MCG 1302](#))
5. Patients with agitated delirium have agitation along with two or more of the following:
  - Diaphoresis
  - Elevated temperature, hot or flushed skin
  - Tachycardia
  - Rapid breathing

Agitated and/or combative patients without these signs/symptoms are not suffering from agitated delirium, treat per the appropriate treatment protocol

6. Apply physical restraints when indicated ([Ref. No. 838, Application of Patient Restraints](#)) ❷
7. For patients requiring medical management for agitated delirium including patients requiring physical restraint for patient or EMS personnel safety:

Administer **Midazolam (5mg/mL) 0.2 mg/kg IM/IN**, dose per [MCG 1309](#)

Repeat x1 in 5 min prn, maximum single dose 5mg, up to a total dose of 10mg prior to Base Contact ❸

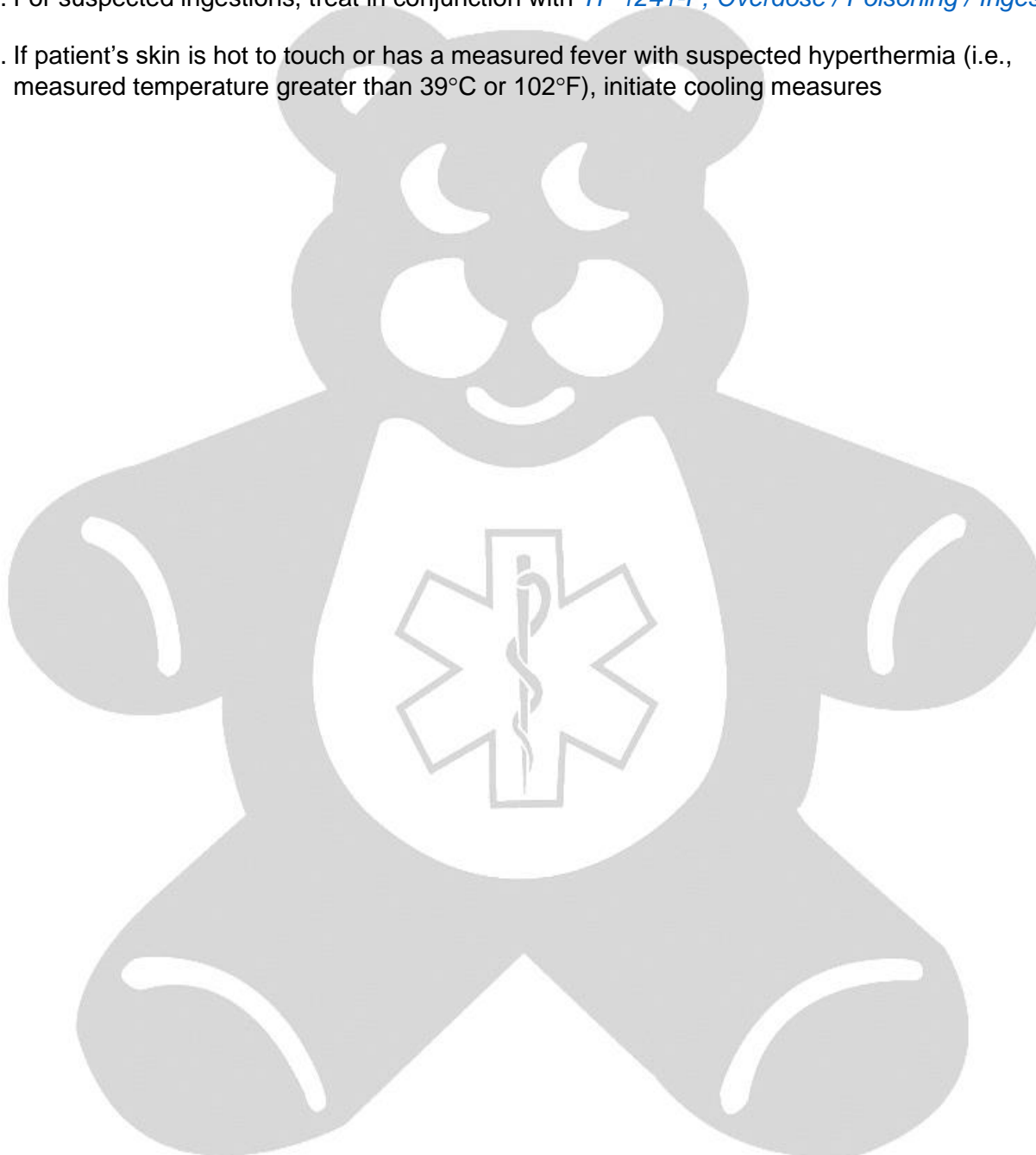
**CONTACT BASE** for additional sedation:

With Base contact may repeat as above up to a maximum total dose of 15mg

8. Evaluate for physical trauma; if present treat in conjunction with [TP-1244-P, Traumatic Injury](#)
9. Establish vascular access prn ([MCG 1375](#))
10. Check blood glucose prn ❹  
If glucose < 60 mg/dL or > 250 mg/dL treat in conjunction with [TP 1203-P, Diabetic Emergencies](#)
11. Initiate cardiac monitoring after sedation ([MCG 1308](#))  
Assess for dysrhythmia or interval widening  
**CONTACT BASE** for QRS >0.12 sec, QT >500 ms, or heart rate >150 or <50 to discuss need to administer **Sodium Bicarbonate (1mEq/mL) 1mEq/kg IV**, dose per [MCG 1309](#) ❺
12. **Normal saline 20mL/kg IV rapid infusion** per [MCG 1309](#)



13. For suspected ingestions, treat in conjunction with [TP 1241-P, Overdose / Poisoning / Ingestion](#)
14. If patient's skin is hot to touch or has a measured fever with suspected hyperthermia (i.e., measured temperature greater than 39°C or 102°F), initiate cooling measures





**SPECIAL CONSIDERATIONS**

- ❶ Pediatric patients with Agitated/Excited Delirium are infrequently encountered by EMS personnel and therefore Base Contact is required. These patients are at risk for sudden cardiac arrest, often preceded by a brief, abrupt period of lethargy and decreased respirations. Careful observation of patient's activity level, vital signs, and airway are essential to patient safety. If patient develops cardiac arrest, treat in conjunction with [TP 1210-P, Cardiac Arrest – Non-traumatic](#)
- ❷ Use of restraints in patients with Agitated Delirium is associated with an increased risk of sudden death. Avoid using restraints in patients who do not present a threat to self or to EMS personnel. Never transport a patient in restraints in prone position. ([Ref. 838](#))
- ❸ Patients who are agitated while in physical restraint and have the potential for injury due to the degree of agitation, should receive administration of medication by EMS personnel to reduce risk of self-injury. These patients should be continually monitored for respiratory depression, in accordance with [Ref. 838, Application of Patient Restraints](#).
- ❹ Agitation may be present after a seizure, or in the setting of hypo/hyperglycemia. Consider checking glucose early if the patient is a known diabetic, but only if safe to do so.
- ❺ Several drugs may cause life threatening cardiac arrhythmias after intentional or accidental overdose. These arrhythmias are often preceded by prolonged ECG intervals (particularly QRS > 0.12 sec or QT interval > 500ms). Cocaine intoxication is strongly associated with Agitated Delirium and may also produce cardiac effects similar to Tricyclic antidepressant (TCA) overdose (widened QRS progressing to malignant arrhythmia). These patients may require a large dose of sodium bicarbonate to prevent sudden cardiac death. Consult Base Physician immediately to discuss administration of Sodium Bicarbonate; may repeat x1 if QRS remains > 0.12 sec after initial sodium bicarbonate. Treat in conjunction with [TP 1241-P, Overdose/Poisoning/Ingestion](#)





**Treatment Protocol: BEHAVIORAL / PSYCHIATRIC CRISIS**

**Ref. No. 1209-P**

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1. Perform initial assessment of scene and patient situation for safety
2. Attain law enforcement assistance for assistance prior to approaching a patient if a weapon is visualized or the patient threatens violence or for potential assistance with application of an involuntary psychiatric hold **1 2**
3. Approach patient with caution, assess for agitation and treat accordingly including use of verbal de-escalation as needed ([MCG 1307 Care of the Psychiatric Patient with Agitation](#)) **3**
4. Assess airway and initiate basic and/or advanced airway maneuvers prn
5. Administer **Oxygen** prn ([MCG 1302](#))
6. Assess for agitated delirium; treat per [TP 1208-P, Agitated Delirium](#)
7. Evaluate for acute medical conditions, including those that may present with psychiatric features **4**
8. If ongoing agitation and the patient is cooperative:  
  
**Olanzapine 10mg ODT** for pediatric patients longer than the length-based resuscitation tape per [MCG 1309](#); [MCG 1317.32](#); given once **5 6**
18. If ongoing agitation with safety risk to patient or EMS personnel  
**CONTACT BASE** for orders for treatment of agitation:  
  
**Midazolam (5mg/mL) 0.2 mg/kg IM/IN**, dose per [MCG 1309](#)  
Repeat every 5 min prn; maximum single dose 5mg  
With Base orders may repeat as above to a total maximum dose of 15mg **6 7**
19. Evaluate for physical trauma; if present treat in conjunction with [TP-1244-P, Traumatic Injury](#)
20. Establish vascular access prn ([MCG 1375](#))  
  
Check blood glucose prn **8**  
If glucose < 60mg/dL or > 250mg/dL treat in conjunction with [TP 1203-P, Diabetic Emergencies](#)
21. Initiate cardiac monitoring prn ([MCG 1308](#))  
Assess for dysrhythmia or interval widening  
**CONTACT BASE** for QRS > 0.12 sec, QT > 500ms, or heart rate > 150 or < 50 to discuss need to administer **Sodium Bicarbonate (1mEq/mL) 1mEq/kg IV** per [MCG 1309](#) **5**
22. Evaluate for a possible suicide attempt **10**  
For potential overdose, obtain patient and bystanders information about ingestions and treat in conjunction with [TP 1241-P, Overdose/Poisoning/Ingestion](#)

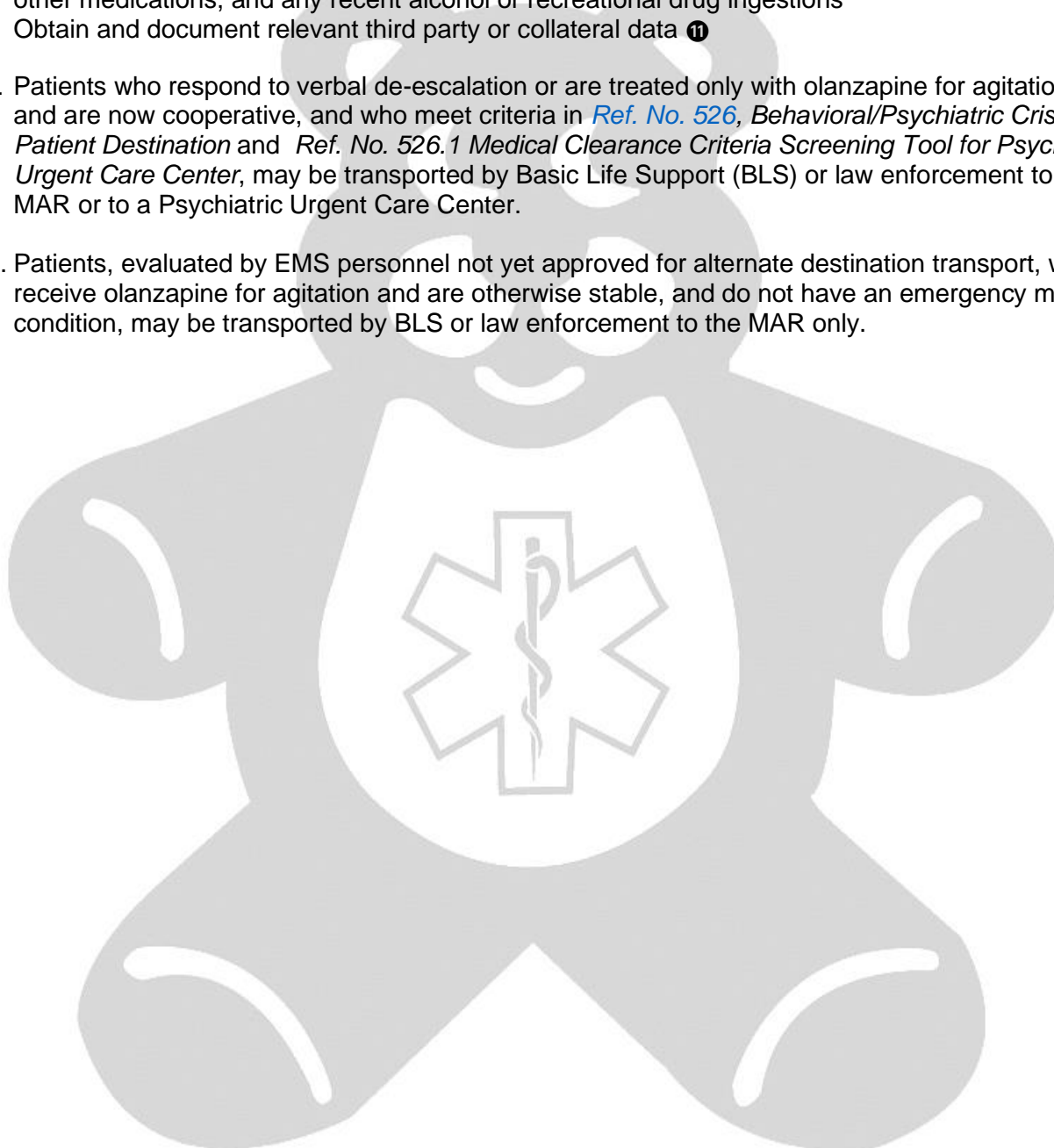


**Treatment Protocol: BEHAVIORAL / PSYCHIATRIC CRISIS**

**Ref. No. 1209-P**

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23. Evaluate for acute mental health and/or substance abuse crises  
Obtain relevant clinical history regarding patient's current psychiatric diagnoses, psychiatric and other medications, and any recent alcohol or recreational drug ingestions  
Obtain and document relevant third party or collateral data **11**
24. Patients who respond to verbal de-escalation or are treated only with olanzapine for agitation, and are now cooperative, and who meet criteria in [Ref. No. 526](#), *Behavioral/Psychiatric Crisis Patient Destination* and *Ref. No. 526.1 Medical Clearance Criteria Screening Tool for Psychiatric Urgent Care Center*, may be transported by Basic Life Support (BLS) or law enforcement to the MAR or to a Psychiatric Urgent Care Center.
16. Patients, evaluated by EMS personnel not yet approved for alternate destination transport, who receive olanzapine for agitation and are otherwise stable, and do not have an emergency medical condition, may be transported by BLS or law enforcement to the MAR only.







**SPECIAL CONSIDERATIONS**

- ❶ Scene safety includes the assessment for the presence of firearms or weapons, including observations and direct inquiry with the patient and any available/relevant third parties (e.g., family, caregivers, or witnesses). If a weapon is found on the scene, EMS personnel should notify all members on the scene, and contact law enforcement (LE) immediately.
- ❷ Psychiatric, including mental health and substance abuse, emergencies are medical emergencies, and as such are best treated by EMS personnel. Those patients with psychiatric emergencies presenting with agitation, violence, threats of harm to self or others, or criminal activity are best managed by an EMS and LE co-response.
- ❸ Always attempt verbal de-escalation first and avoid applying restraints to patients who do not present a threat to self or EMS personnel ([Ref. 838, Application of Patients Restraints](#))
- ❹ Many medical causes of psychiatric symptoms exist:
  - Agitation (see [MCG 1307](#))
    - Acute pain
    - Head trauma
    - Infection
    - Encephalitis or Encephalopathy
    - Exposure to environmental toxins
    - Metabolic derangement
    - Hypoxia
    - Thyroid disease or other hormone irregularity
    - Neurological disease
    - Toxic levels of medications
    - Alcohol or recreational drugs: intoxication or withdrawal
    - Exacerbation of a primary psychiatric illness
    - Autism Spectrum Disorder
  - Psychosis
    - Delirium
    - Chronic neurological disease (dementia, seizures, parkinsonism, brain tumor)
    - Steroid use, other medication reactions
    - Alcohol or recreational drugs: intoxication or withdrawal
  - Mania
    - Delirium
    - Thyrotoxicosis
    - Alcohol or recreational drugs: intoxication or withdrawal
  - Anxiety
    - Respiratory disease
    - Cardiac disease
    - Thyroid disease
    - Toxic levels of medications
    - Alcohol or recreational drugs: intoxication or withdrawal
  - Depression
    - Reaction to medication
    - Chronic disease or chronic pain



Hormonal variations  
Subclinical / clinical hypothyroidism  
Alcohol or recreational drugs: intoxication or withdrawal

- 5 Olanzapine onset is 5-15 minutes with maximum effect at 45-60 minutes.
- 6 Medications used for pharmacologic management of agitation may cause respiratory depression, and every individual who receives pharmacologic management should be continuously monitored and transported for additional clinical assessment and treatment.
- 7 Midazolam onset is 2 minutes with maximum effect at 5 minutes. The IM or IN route is preferred unless an IV has been previously established.
- 8 Agitation may be present after a seizure, or in the setting of hypo/hyperglycemia. Consider checking glucose early if the patient is a known diabetic or demonstrates clinical evidence of hypoglycemia, but only if safe to do so.
- 9 Several drugs that may cause agitation and present similarly to a psychiatric crisis may also cause life threatening cardiac arrhythmias after intentional or accidental overdose. These arrhythmias are often preceded by prolonged QRS intervals ( $> 0.12$  sec ) or bradycardia . Cocaine intoxication is strongly associated with Agitated Delirium and may also produce cardiac effects similar to Tricyclic antidepressant (TCA) overdose (widened QRS progressing to malignant arrhythmia). These patients may require a large dose of sodium bicarbonate to prevent sudden cardiac death. Consult Base Physician immediately to discuss administration of Sodium Bicarbonate; may repeat x1 if QRS remains  $> 0.12$  sec after initial sodium bicarbonate. Treat in conjunction with [TP 1241-P, Overdose / Poisoning / Ingestion](#)
- 10 It is important to assess for any evidence of suicide attempt. If there is concern for overdose, ask the patient or bystanders to provide information on agents used (specifically what, when, and how much). Collect and transport any medication vials, or additional pills). This will assist in determining necessary antidote treatment and monitoring at the hospital. This information is often lost, if not obtained immediately on scene.
- 11 Patients with acute mental health or substance abuse crises may not be capable or willing to provide reliable information, therefore, it is important to obtain third party collateral information about the patient's condition (e.g., from family, caregivers, witnesses), including names and contact information for persons knowledgeable about the patient's illness, treatment and medications.



**Treatment Protocol: CARDIAC ARREST**

**Ref. No. 1210-P**

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**Base Hospital Contact Required.**

1. For patients meeting [Ref. 814](#) Section I criteria for determination of death in the field – document *DOA – Obvious Death* ❶
2. Resuscitate cardiac arrest patients on scene ❷
3. Assess airway and initiate bag-mask ventilation; escalate to advanced airway prn ([MCG 1302](#)) ❸ ❹  
Monitor waveform capnography throughout resuscitation
4. Assist respirations with bag-mask-ventilations (BMV) with viral filter using **high-flow Oxygen 15L/min**; squeeze bag just until chest rise and then release; state “squeeze, release, release” to avoid hyperventilation ❹
5. For advanced airway, Supraglottic airway is preferred when indicated ❸
6. For suspected foreign body (no chest rise with BMV): ❺  
Perform direct laryngoscopy and use pediatric Magill forceps to remove visible obstruction(s)
7. Initiate chest compressions at a rate of 100-120 compressions per minute with a compression to ventilation rate of 15:2 ❻
8. Initiate cardiac monitoring ([MCG 1308](#))  
Briefly assess rhythm every 2 minutes, minimizing pauses, or continuously via rhythm display technology ❼ ❽
9. Establish vascular access ([MCG 1375](#)) ❾
10. **CONTACT BASE** concurrent with ongoing management

**ASYSTOLE/PEA**

11. **Epinephrine (0.1mg/mL) 0.01mg/kg IV/IO**, dose per [MCG 1309](#)  
May repeat every 5 min x2, maximum single dose 1mg ❿  
**CONTACT BASE** for additional epinephrine doses

12. Consider and treat potential causes ⓫
13. **Normal Saline 20mL/kg IV/IO** per [MCG 1309](#)  
May repeat x2

**V-FIB/PULSELESS V-TACH**

14. **Defibrillate at 2J/kg**, dose per [MCG 1309](#)  
Repeat at **4J/kg** at each 2-minute cycle as indicated



**Treatment Protocol: CARDIAC ARREST**

**Ref. No. 1210-P**

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If persistent shockable rhythm after three shocks, change the pad position when feasible and without pads touching <sup>12</sup>

15. **Epinephrine (0.1mg/mL) 0.01mg/kg IV/IO**, dose per [MCG 1309](#)  
Begin after second defibrillation  
May repeat every 5 min x2, maximum single dose 1mg <sup>10</sup>

**CONTACT BASE** for additional epinephrine doses

16. For persistent or recurrent V-Fib/V-Tach without pulses:  
**Amiodarone (50mg/mL) 5 mg/kg IV/IO**, dose per [MCG 1309](#)

**RETURN OF SPONTANEOUS CIRCULATION**

17. Initiate post-resuscitation care on scene to stabilize the patient prior to transport <sup>13 14</sup>

18. For SBP < 70mmHg:  
**Normal Saline 20mL/kg IV/IO rapid infusion** per [MCG 1309](#)  
Repeat x1 for persistent poor perfusion ([MCG 1355](#))

If no response after **Normal Saline 20mL/kg**, or worsening hypotension and/or bradycardia:  
**Push-dose Epinephrine** – mix 9mL Normal Saline with 1mL Epinephrine (0.1mg/mL) IV formulation in a 10mL syringe; administer **Push-dose Epinephrine (0.01mg/mL)** per [MCG 1309](#) every 1-5 minutes as needed to maintain SBP > 70mmHg <sup>15</sup>

19. Continue ventilation at 20 breaths per minute or every 2-3 seconds

20. Establish advanced airway prn ([MCG 1302; 1309](#)) <sup>16</sup>

21. Raise head of stretcher to 30 degrees if blood pressure allows, otherwise maintain supine

22. Check blood glucose  
For blood glucose < 60mg/dL  
**Dextrose 10% 5mL/kg IV/IO**  
≤24kg: **Dextrose 10% 5mL/kg IV in 1mL/kg** increments dose per [MCG 1309](#), reassess for clinical improvement after every 1mL/kg. Administer slow IVP. May repeat as needed, maximum total dose 5mL/kg. Recheck glucose prn after 3mL/kg infused  
>24kg: **Dextrose 10% administer 120mL IV/IO** and reassess, continue infusion as needed with maximum dose of 5mL/kg

23. For suspected narcotic overdose: <sup>17</sup>  
**Naloxone (1mg/mL) 0.1mg/kg IM/IN/IO/IV**, dose per [MCG 1309](#)

24. Contact **Public Health 213-989-7140** for all submersion incidents involving pools or spas after transfer of patient care in the emergency department or upon termination of resuscitation in the field (this requirement is effective 10/1/21). <sup>18</sup>





**SPECIAL CONSIDERATIONS**

- ① EMS Personnel are mandated reporters of child abuse and neglect, and a report should be made when suspected as per [Ref. 822](#). Communicate suspicion for child abuse and/or neglect to accepting ED staff when home suggests children could be at risk for harm (e.g., unkept home, evidence of drug or alcohol abuse, unsafe living conditions, known or suspected domestic violence), when the history does not match with the severity of physical findings (e.g., child posturing after a roll off the couch), when patterned injury or burns are noted (e.g., circular burns as from a cigarette, whip marks on the skin, burns of both hands or feet), or when child reports physical or sexual abuse. Children < 3 years of age and those with developmental delay are at increased risk of abuse. This must also be accompanied by notification to the Department of Children and Family Services (DCFS).
- ② Maintaining perfusion with high-quality CPR throughout resuscitation is essential to ensuring good patient outcome. Chest compressions are the most important aspect of cardiac arrest resuscitation. Maintaining chest compressions should take priority over any medication administration or transport. Transporting the patient in cardiac arrest causes interruptions in CPR and reduces CPR quality. Similar to adults in OHCA, pediatric patients who are resuscitated on scene have higher neurologically intact survival. Transport may be initiated sooner if scene safety concerns.
- ③ Bag-mask ventilation (BMV) with a viral filter is the preferred initial method of airway management for pediatric patients. BMV in cardiac arrest has been associated with improved patient outcomes; the role of the supraglottic airway (SGA) in pediatric patients is still unknown. SGA placement should be performed if BMV is ineffective and otherwise deferred until initial resuscitation priorities are complete (i.e., at least 2 defibrillations for shockable rhythms and first dose of epinephrine IV for nonshockable rhythms). Sizing of the SGA per *MCG 1309*. When authorized, intubation should not be performed until after return of spontaneous circulation (ROSC) unless ventilation with BMV and SGA is ineffective and/or contraindicated.
- ④ Hyperventilation reduces venous return and worsens patient outcomes. Both continuous and interrupted (15:2) compressions/ventilations are acceptable. Regardless of ventilation method used, ventilations should be no more frequent than 10 per minute with a volume just enough to see chest rise and then release the bag to allow for exhalation ("squeeze, release, release"). Once ROSC is achieved ventilation rates can increase to 20 per minute.
- ⑤ Children < 3 years of age are at high risk for foreign body aspiration. Foreign body aspiration should be suspected if there is a history of possible aspiration or when there is no chest rise with BMV after repositioning of the airway.
- ⑥ EMS personnel should remain on scene up to 20 minutes to establish chest compressions, vascular access and epinephrine administration for nonshockable rhythms or until return of spontaneous circulation (ROSC) is achieved; for shockable rhythms, remain on scene until 3 defibrillations or until ROSC is achieved. The best results occur when resuscitation is initiated and maintained on scene, and post ROSC care is initiated.
- ⑦ If you are able to observe the underlying rhythm during compressions via rhythm display technology, do not pause for the rhythm check.
- ⑧ ETCO<sub>2</sub> should be > 10 with a "box-shaped" waveform during effective CPR. A flat or wavy waveform



or  $\text{ETCO}_2 < 10$  may indicate ineffective compressions or airway obstruction. A sudden increase in  $\text{ETCO}_2$  is suggestive of ROSC. The waveform can also be used to confirm ventilation rate if an advanced airway or asynchronous ventilation with continuous compressions is used.

- 9 Peripheral venous access may be difficult to obtain in infants and small children. Consider IO placement as primary vascular access in patients for whom venous access is unlikely to be achieved rapidly. For older children, make two attempts at venous access and, if unsuccessful, place an IO for vascular access.
- 10 Epinephrine may improve outcomes if given *early* in nonshockable rhythms and should be given within 5 minutes of the resuscitation. For shockable rhythms, where defibrillation is the preferred initial treatment, epinephrine should be given after the second defibrillation. Epinephrine is most likely to be effective if it is given early and after chest compressions have begun. The likelihood of meaningful survival declines after three (3) doses of epinephrine. Resuscitation should continue focused on quality CPR, defibrillation, and identifying reversible causes. Additional doses of epinephrine should only be administered with Base order if indicated, based on the individual patient.
- 11 Potential causes that can be treated in the field include hypoxia, hypovolemia, hyperkalemia, hypothermia, toxins, and tension pneumothorax. Hypoxia and Hypovolemia are common causes of PEA arrest in children. Hypoglycemia is a very rare cause of cardiac arrest and should not be assessed until after ROSC.
- 12 Changing the pad position, called vector change, from anterior-lateral to anterior-posterior or vice versa in patients who do not respond to initial defibrillation attempts, increases the chances of converting to a perfusing rhythm.
- 13 Re-arrest shortly after ROSC is common. Early indicators of impending re-arrest include falling  $\text{EtCO}_2$  and progressive bradycardia. Initiate post-resuscitation care prior to transport, if the scene allows, in order to reduce chances of re-arrest en route. Fluid resuscitation, vasopressor support, and avoidance of hyperventilation are recommended to decrease the risk of re-arrest. Transport considerations include suspected cause of arrest and anticipated transport time to a Pediatric Medical Center. Pediatric patients with ROSC should be transported to a Pediatric Medical Center if within 30 minutes.
- 14  $\text{ETCO}_2$  can help guide your ventilation rate; target  $\text{ETCO}_2$  35-45 mmHg. Just after ROSC, the  $\text{ETCO}_2$  may be transiently elevated. This will decrease appropriately with ventilation and does not require hyperventilation to normalize. Persistently elevated  $\text{ETCO}_2$  and/or “sharkfin” waveform may indicate respiratory failure as cause of the cardiac arrest. Falsely low  $\text{ETCO}_2$  measurements can occur if there is a leak with BMV or shock.
- 15 **Push-dose Epinephrine** is appropriate for non-traumatic shock including cardiogenic shock. Additional doses beyond 10mL may need to be prepared for prolonged transports. For patients < 10kg, transfer the diluted **Push-dose Epinephrine** to a smaller (1mL or 3mL) syringe in order to administer the dose accurately.
- 16 Consider SGA placement if needed to facilitate effective ventilations during transport. In patients longer than the length-based resuscitation tape (e.g., Broselow tape) for whom intubation is also in scope of practice, SGAs are the preferred advanced airway unless specifically contraindicated.



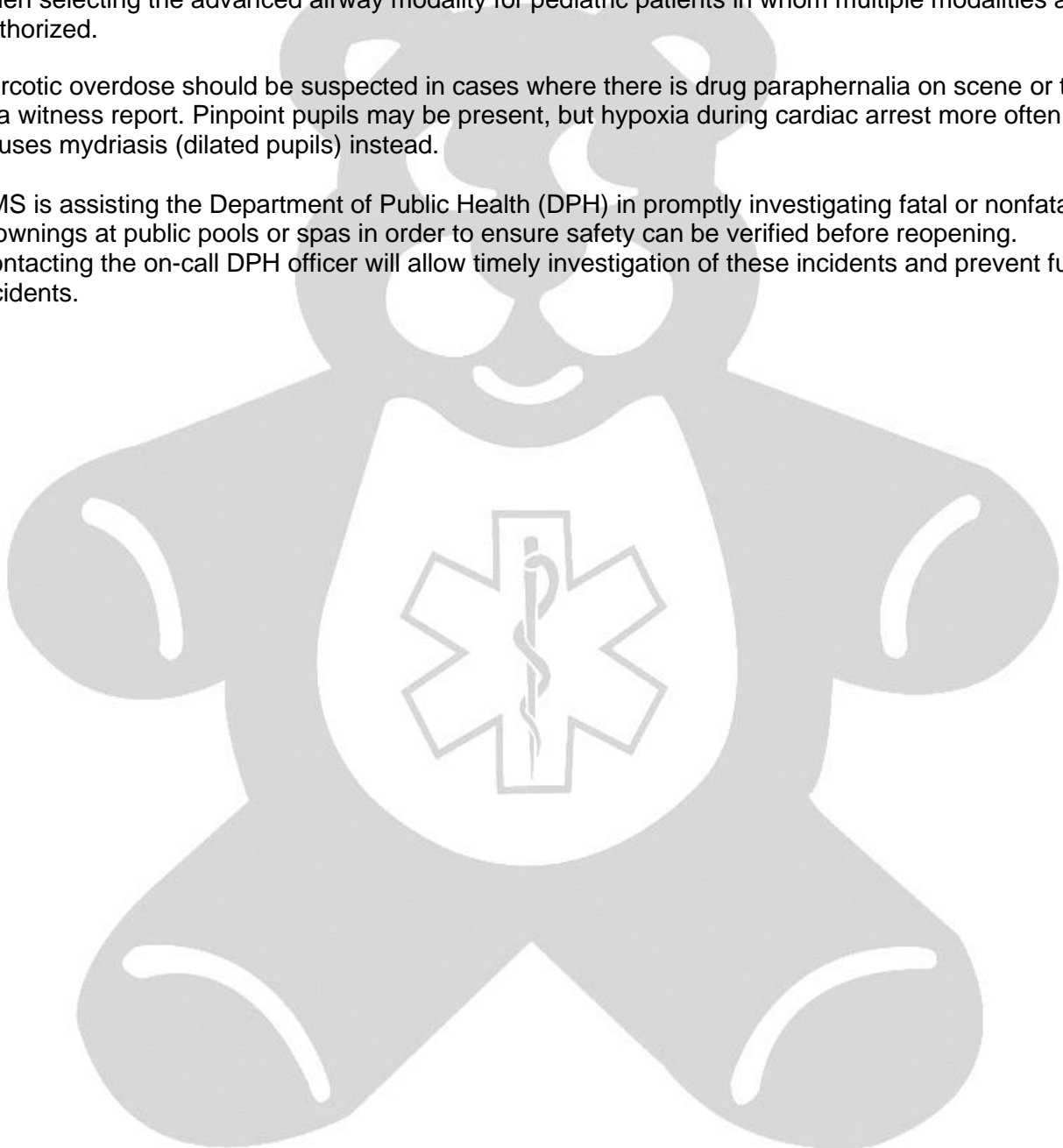
**Treatment Protocol: CARDIAC ARREST**

**Ref. No. 1210-P**

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Paramedics should use judgment based on patient characteristics, circumstances, and skill level when selecting the advanced airway modality for pediatric patients in whom multiple modalities are authorized.

- ⑰ Narcotic overdose should be suspected in cases where there is drug paraphernalia on scene or there is a witness report. Pinpoint pupils may be present, but hypoxia during cardiac arrest more often causes mydriasis (dilated pupils) instead.
- ⑱ EMS is assisting the Department of Public Health (DPH) in promptly investigating fatal or nonfatal drownings at public pools or spas in order to ensure safety can be verified before reopening. Contacting the on-call DPH officer will allow timely investigation of these incidents and prevent future incidents.





**Treatment Protocol: CARDIAC DYSRHYTHMIA - BRADYCARDIA**

**Ref. No. 1212-P**

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**Base Hospital Contact: Required for all patients with symptomatic bradycardia**

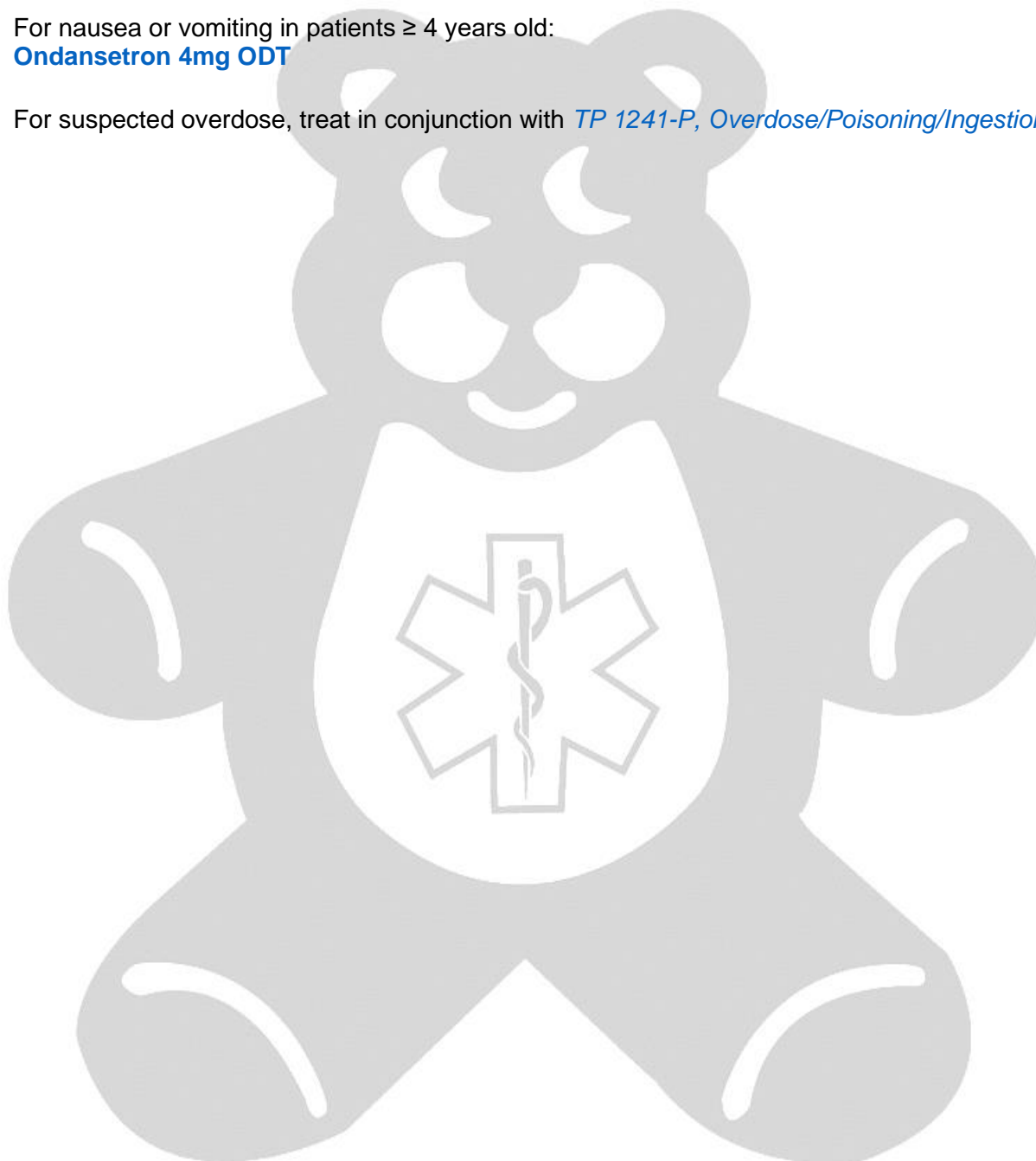
1. Assess patient's airway and initiate basic and/or advanced airway maneuvers prn ([MCG 1302](#))
  2. If foreign body suspected, perform direct laryngoscopy for foreign body removal and treat in conjunction with [TP 1234-P, Airway Obstruction](#)
  3. Administer **Oxygen** prn ([MCG 1302](#))  
**High-flow Oxygen 15L/min** for poor perfusion ❶
  4. Initiate cardiac monitoring ([MCG 1308](#))  
Perform 12-lead ECG if dysrhythmia suspected prn
  5. For poor perfusion ([MCG 1355](#)):  
Begin bag-mask-ventilation (BMV) ❶
  6. Establish vascular access prn ([MCG 1375](#))
  7. **Normal Saline 20mL/kg IV/IO rapid infusion** per [MCG 1309](#)
  8. For persistent poor perfusion and alert: ❷  
**Epinephrine (0.1mg/1mL) 0.01mg/kg slow IV/IO push**, dose per [MCG 1309](#)  
Repeat every 3-5 min  
**CONTACT BASE** for Physician Consultation concurrent with above treatment
  9. For persistent poor perfusion and ALOC: ❷  
Begin chest compressions  
**Epinephrine (0.1mg/1mL) 0.01mg/kg slow IV/IO push**, dose per [MCG 1309](#)  
Repeat every 3-5 min  
**CONTACT BASE** for Physician Consultation concurrent with above treatment
  10. If suspected AV Block or patient unresponsive to epinephrine: ❸  
**Atropine (0.1mg/mL) 0.02 mg/kg IV/IO push**, dose per [MCG 1309](#)  
May repeat x1 in 5 min
  11. Consider **Transcutaneous Pacing (TCP)** for HR ≤ 40 with continued poor perfusion, initiate TCP as per [MCG 1365](#). ❹  
Recommended initial settings: rate 70bpm (100 bpm if < 12 months old) initial current 40mA and slowly increase mAs until capture is achieved  
**CONTACT BASE** concurrent with initiation of TCP
- If TCP will be utilized for the awake patient, consider sedation and analgesia  
For sedation:  
**Midazolam (5mg/mL) 0.1mg/kg IV/IO or 0.2mg IM/IN**, dose per [MCG 1309](#)  
May repeat in 5 min prn x1 with Base order, maximum single dose 5mg  
For pain management: refer to [MCG 1345, Pain Management](#)  
Dose per [MCG 1309](#)





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12. For nausea or vomiting in patients  $\geq 4$  years old:  
[Ondansetron 4mg ODT](#)
13. For suspected overdose, treat in conjunction with [TP 1241-P, Overdose/Poisoning/Ingestion](#) 5





**SPECIAL CONSIDERATIONS**

- ❶ Management of oxygenation and ventilation is the most important aspect of treatment of bradycardia in children. Squeeze the bag mask device just until chest rise is initiated and then release; state “Squeeze, Release, Release” to prevent hyperventilation. Young athletes, typically adolescents may have normal resting heart rates < 60 bpm, treat only if signs of poor perfusion.
- ❷ For pediatric patients with bradycardia (HR <60 bpm) unresponsive to bag-mask ventilation and continued poor perfusion who remain alert, support perfusion with fluid resuscitation and epinephrine administration. For patients with persistent poor perfusion and ALOC, begin chest compressions, administer epinephrine and assess need for TCP. If you have concerns about initiating these therapies contact Base Physician for further guidance.
- ❸ Potential causes of unresponsiveness to epinephrine in children include increased intracranial pressure, beta blocker/calcium channel overdose, hypothyroidism, infection, congenital heart disease, and sleep apnea where administration of atropine could be theoretically benefit.
- ❹ There are minimal data on the use of TCP in infants and children in the out-of-hospital setting. Patients unresponsive to BMV and epinephrine may be candidates. Base Physician consultation is recommended in these patients.
- ❺ Consider calcium channel blocker and beta blocker overdose in patients with bradycardia and hypotension. Ask about potential exposure including medications in the home. Hyperglycemia is a common finding with calcium channel blocker overdose.



**Treatment Protocol: CARDIAC DYSRHYTHMIA - TACHYCARDIA**

**Ref. No. 1213-P**

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**Base Hospital Contact: Required for patients with cardiac dysrhythmias (excludes sinus tachycardia)**

1. Assess airway and initiate basic and advanced airway maneuvers ([MCG 1302](#))
2. Administer **Oxygen** prn ([MCG 1302](#))
3. Initiate cardiac monitoring ([MCG 1308](#))  
Document cardiac rhythm and obtain 12-lead ECG if dysrhythmia suspected
4. Maintain supine for patients with signs of poor perfusion if respiratory status allows
5. Establish vascular access prn ([MCG 1375](#))

**SINUS TACHYCARDIA** (Infants: heart rate < 220bpm, Children: heart rate < 180bpm) ❶

6. For adequate perfusion:  
Monitor closely for potential deterioration, rapid transport
7. For poor perfusion ([MCG 1355](#)):  
**Normal Saline 20mL/kg IV** per [MCG 1309](#)

**SVT - NARROW COMPLEX** (Infants: heart rate ≥ 220bpm, Children: heart rate ≥ 180bpm)

8. **Adenosine (3mg/mL) 0.1mg/kg rapid IV push**, dose per [MCG 1309](#), maximum 6mg ❷  
Immediately follow with 10mL Normal Saline rapid IV flush

If SVT persists:

**Adenosine (3mg/mL) 0.2mg/kg rapid IV push**, dose per [MCG 1309](#), maximum 12mg

**CONTACT BASE** concurrent with adenosine treatment

9. For persistent poor perfusion ([MCG 1355](#)) after adenosine:  
**CONTACT BASE** to discuss order for synchronized cardioversion:  
Synchronized cardioversion 1.0J/kg, dose per [MCG 1309](#) ❹  
May repeat x2 at 2.0J/kg, dose per [MCG 1309](#)

Consider sedation prior to cardioversion:

**Midazolam (5mg/mL) 0.1mg/kg slow IV/IO push** or **0.2mg/kg IM/IN**, dose per [MCG 1309](#)  
May repeat in 5 min prn x1, with Base order, maximum single dose 5mg

**WIDE COMPLEX (WCT) – REGULAR/MONOMORPHIC**

10. For adequate perfusion:  
**Adenosine (3mg/mL) 0.1mg/kg rapid IV push**, dose per [MCG 1309](#), maximum 6mg ❷ ❸  
Immediately follow with 10mL Normal Saline rapid IV flush



**Treatment Protocol: CARDIAC DYSRHYTHMIA - TACHYCARDIA**

**Ref. No. 1213-P**

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If WCT persists:

**Adenosine (3mg/mL) 0.2mg/kg rapid IV push**, dose per [MCG 1309](#), maximum 12mg ③  
**CONTACT BASE** concurrent with adenosine treatment

11. For poor perfusion ([MCG 1355](#)):  
**CONTACT BASE** to discuss order for:  
**Adenosine (3mg/mL) 0.2mg/kg rapid IV push**, dose per [MCG 1309](#), maximum 12mg and/or  
**Synchronized cardioversion 1.0J/kg**, dose per [MCG 1309](#) ③ ④  
May repeat x2 at **2.0J/kg**, dose per [MCG 1309](#)

Consider sedation prior to cardioversion:

**Midazolam (5mg/mL) 0.1mg/kg slow IV/IO push** or **0.2mg/kg IM/IN**, dose per [MCG 1309](#)  
May repeat in 5 min prn x1, with Base order, maximum single dose 5mg

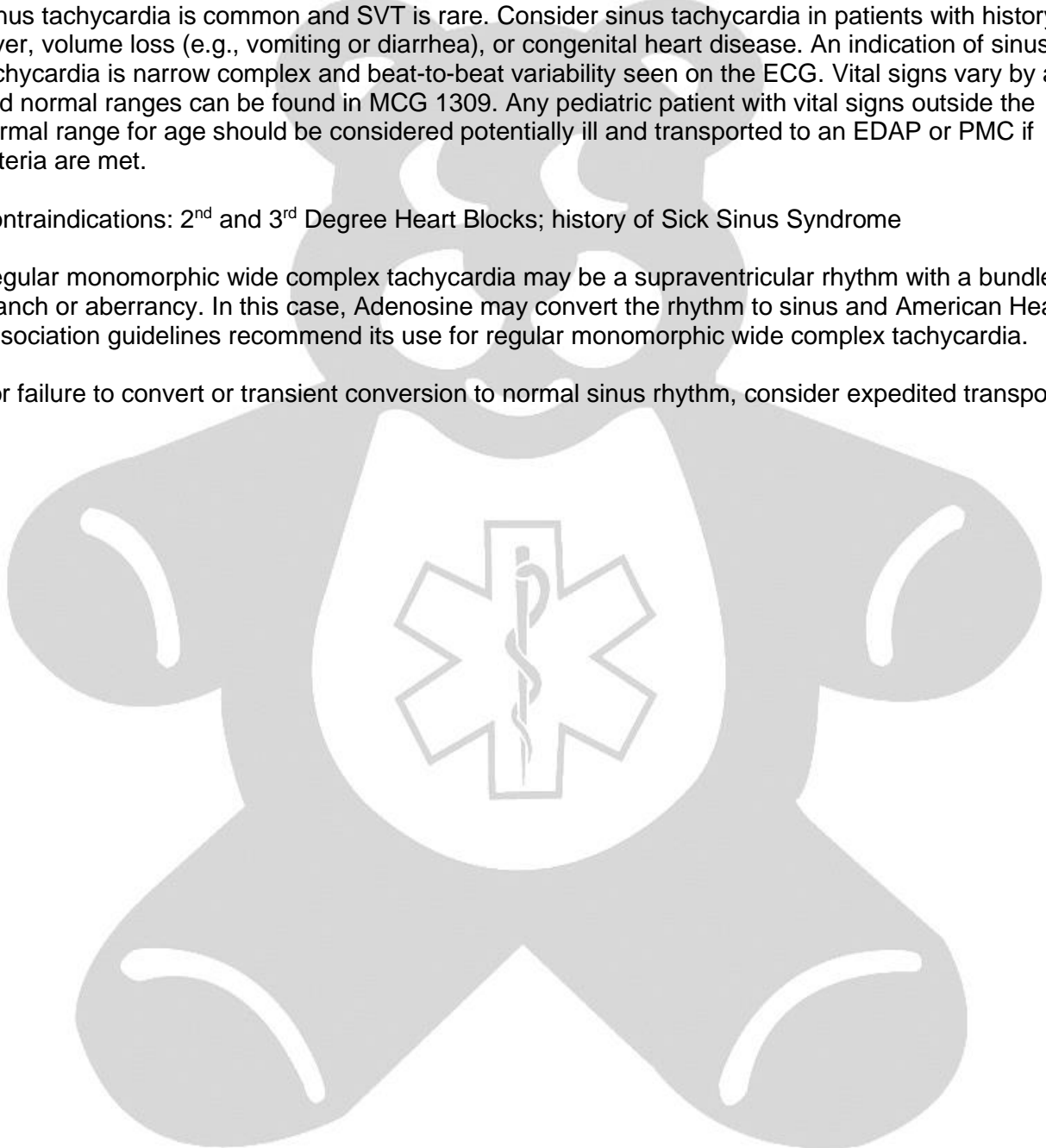
**WIDE-COMPLEX – IRREGULAR**

12. For adequate perfusion:  
**CONTACT BASE** and monitor closely for potential deterioration, rapid transport
13. For poor perfusion ([MCG 1355](#)):  
**CONTACT BASE** to discuss order for synchronized cardioversion 1.0J/kg, dose per [MCG 1309](#) ④  
May repeat x2 at 2.0J/kg, dose per [MCG 1309](#)
- Consider sedation prior to cardioversion:  
**Midazolam (5mg/mL) 0.1mg/kg slow IV/IO push** or **0.2mg/kg IM/IN**, dose per [MCG 1309](#)  
May repeat in 5 min prn x1, with Base order, maximum single dose 5mg



**SPECIAL CONSIDERATIONS**

- ❶ Sinus tachycardia is common and SVT is rare. Consider sinus tachycardia in patients with history of fever, volume loss (e.g., vomiting or diarrhea), or congenital heart disease. An indication of sinus tachycardia is narrow complex and beat-to-beat variability seen on the ECG. Vital signs vary by age and normal ranges can be found in MCG 1309. Any pediatric patient with vital signs outside the normal range for age should be considered potentially ill and transported to an EDAP or PMC if criteria are met.
- ❷ Contraindications: 2<sup>nd</sup> and 3<sup>rd</sup> Degree Heart Blocks; history of Sick Sinus Syndrome
- ❸ Regular monomorphic wide complex tachycardia may be a supraventricular rhythm with a bundle branch or aberrancy. In this case, Adenosine may convert the rhythm to sinus and American Heart Association guidelines recommend its use for regular monomorphic wide complex tachycardia.
- ❹ For failure to convert or transient conversion to normal sinus rhythm, consider expedited transport.





**Treatment Protocol: CHILDBIRTH MOTHER**

**Ref. No. 1215-P**

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**Base Hospital Contact Required ①**

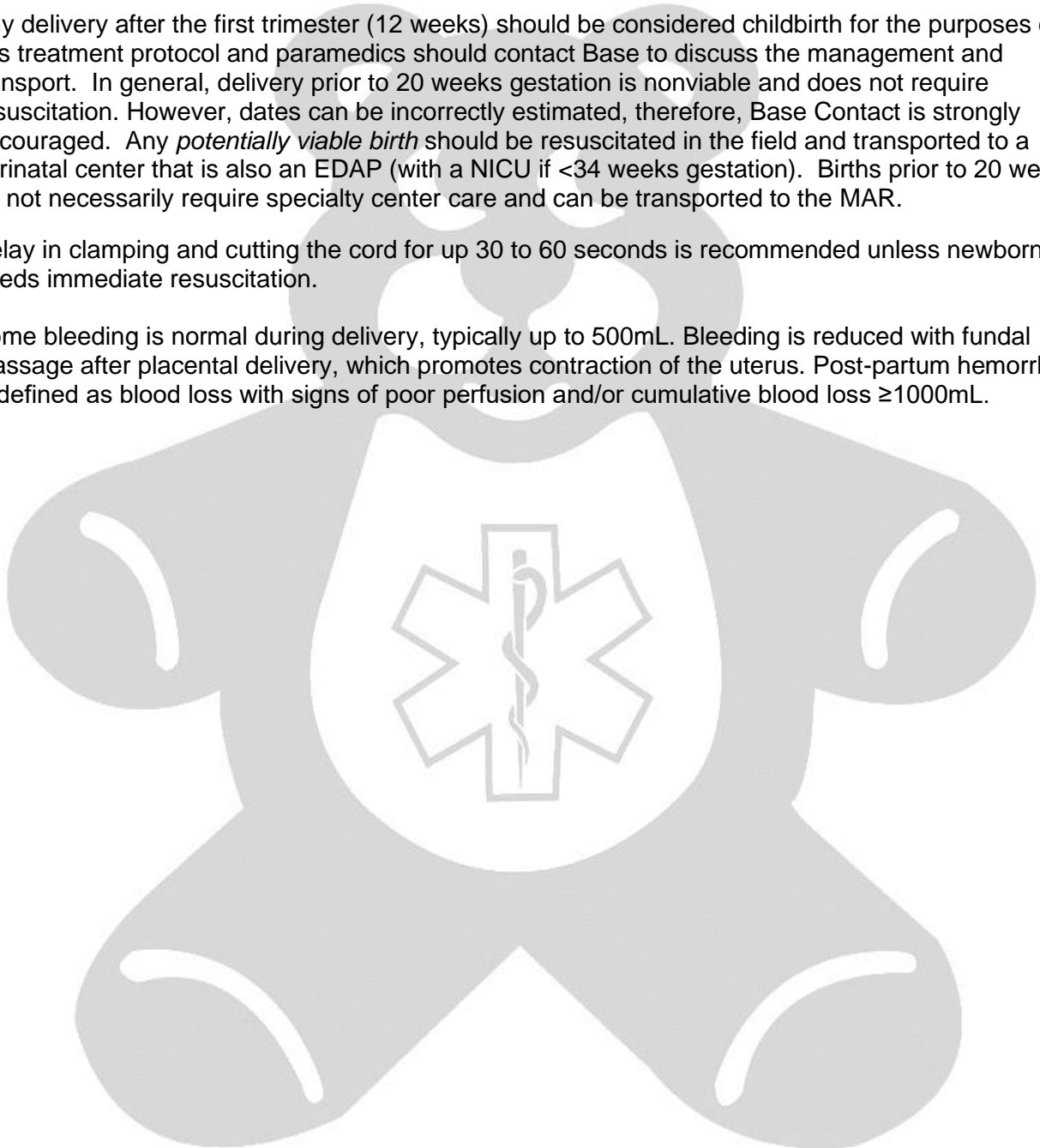
1. Assess the mother's airway and initiate basic and/or advanced airway maneuvers prn ([MCG 1302](#))
2. Administer **Oxygen** prn ([MCG 1302](#))
3. Establish vascular access prn ([MCG 1375](#))  
Vascular access should not take precedence over controlled delivery or emergency transport
4. Place mother in Semi-Fowler's or Lateral Sims position
5. If mother has the urge to push or crowning is evident, prepare for delivery  
Prepare OB kit
6. If crown is showing with amniotic sac intact, pinch the sac and twist the membrane to rupture
7. If maternal hypertension, breech presentation, shoulder dystocia, or prolapsed or nuchal cord treat in conjunction with [TP 1217-P, Pregnancy Complication](#)
8. Once delivered, dry newborn with a towel, clamp and cut the cord ②  
Treat newborn per [TP 1216-P, Newborn/Neonate Resuscitation](#)
9. For management of the placenta:  
The placenta may deliver spontaneously; do not pull on cord but allow placenta to separate naturally  
Place placenta in plastic bag from the OB kit and bring to the hospital with the mother
10. Massage the mother's lower abdomen (fundus) after the placenta delivers  
For post-partum hemorrhage, treat in conjunction with [TP 1217-P, Pregnancy Complication](#)
11. For poor perfusion ([MCG 1355](#)):  
**Normal Saline 20mL/kg IV rapid infusion** per [MCG 1309](#)  
**CONTACT BASE** for persistent poor perfusion to obtain order for additional **Normal Saline 20mL/kg IV** per [MCG 1309](#)
12. If delivery occurs in the field, determine destination based on stated or estimated gestational age and **CONTACT BASE: ①**  
Transport both patients to a Perinatal Center with an EDAP if newborn  $\geq 34$  weeks gestation  
Transport both patients to a Perinatal Center with an EDAP and a NICU if  $< 34$  weeks gestation





**SPECIAL CONSIDERATIONS**

- ❶ Any delivery after the first trimester (12 weeks) should be considered childbirth for the purposes of this treatment protocol and paramedics should contact Base to discuss the management and transport. In general, delivery prior to 20 weeks gestation is nonviable and does not require resuscitation. However, dates can be incorrectly estimated, therefore, Base Contact is strongly encouraged. Any *potentially viable birth* should be resuscitated in the field and transported to a perinatal center that is also an EDAP (with a NICU if <34 weeks gestation). Births prior to 20 weeks do not necessarily require specialty center care and can be transported to the MAR.
- ❷ Delay in clamping and cutting the cord for up to 30 to 60 seconds is recommended unless newborn needs immediate resuscitation.
- ❸ Some bleeding is normal during delivery, typically up to 500mL. Bleeding is reduced with fundal massage after placental delivery, which promotes contraction of the uterus. Post-partum hemorrhage is defined as blood loss with signs of poor perfusion and/or cumulative blood loss  $\geq 1000\text{mL}$ .





**Treatment Protocol: NEWBORN / NEONATAL RESUSCITATION**

**Ref. No. 1216-P**

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**Base Hospital Contact required for all newborn deliveries**

1. Assist delivery; if amniotic sac intact and crown is presenting part, pinch sac and twist membrane to rupture and continue with delivery. Treat mother per [TP 1215-P, Childbirth \(Mother\)](#)
2. Dry, warm and stimulate newborn by drying with towel ❶
3. Assess airway and initiate basic airway management ([MCG 1302](#))  
Monitor pulse oximetry on right hand of newborn ❷  
For airway obstruction present suction prn; mouth first then nostrils ❸
4. Clamp and cut cord ❹
5. If newborn is vigorous, after drying and warming with a towel place on mother's chest skin-to-skin to ensure heat transfer to the newborn; cover mother and newborn with a blanket.
6. Transport newborn and mother to same facility (EDAP and Perinatal Center)
7. Reassess every 30 sec the need for assisted ventilation or CPR intervention
8. Check pulse at the precordium (auscultation), the base of the umbilical cord or at the brachial artery
9. If further resuscitation is required, initiate resuscitation on scene prior to transport

**IF PULSE < 100bpm OR poor respiratory rate, effort, or persistent central cyanosis ❺**

10. Perform BMV with room air for 90 secs, squeeze the bag just enough to see chest rise then release; state "squeeze, release, release" to avoid hyperventilation.
11. Recheck pulse every 30 secs  
For persistent poor respiratory rate, effort or central cyanosis, add [high flow Oxygen 15L/min](#) to BMV  
Assess the need for chest compressions
12. Establish vascular access ([MCG 1375](#))  
If unable to obtain peripheral vascular access, place IO (if available); should not take precedence over emergency transport ❻

**IF PULSE < 60bpm ❼**

13. Begin BMV with high flow oxygen and chest compressions at a rate of 120/min, maintain 3:1 compression to ventilation ratio (90 compressions to 30 ventilations per minute); continue for 2 minutes before pulse check
  - Consider supraglottic airway in infants 3 kg or greater, if BMV ineffective or cardiac arrest despite BMV, size per [MCG 1309](#)



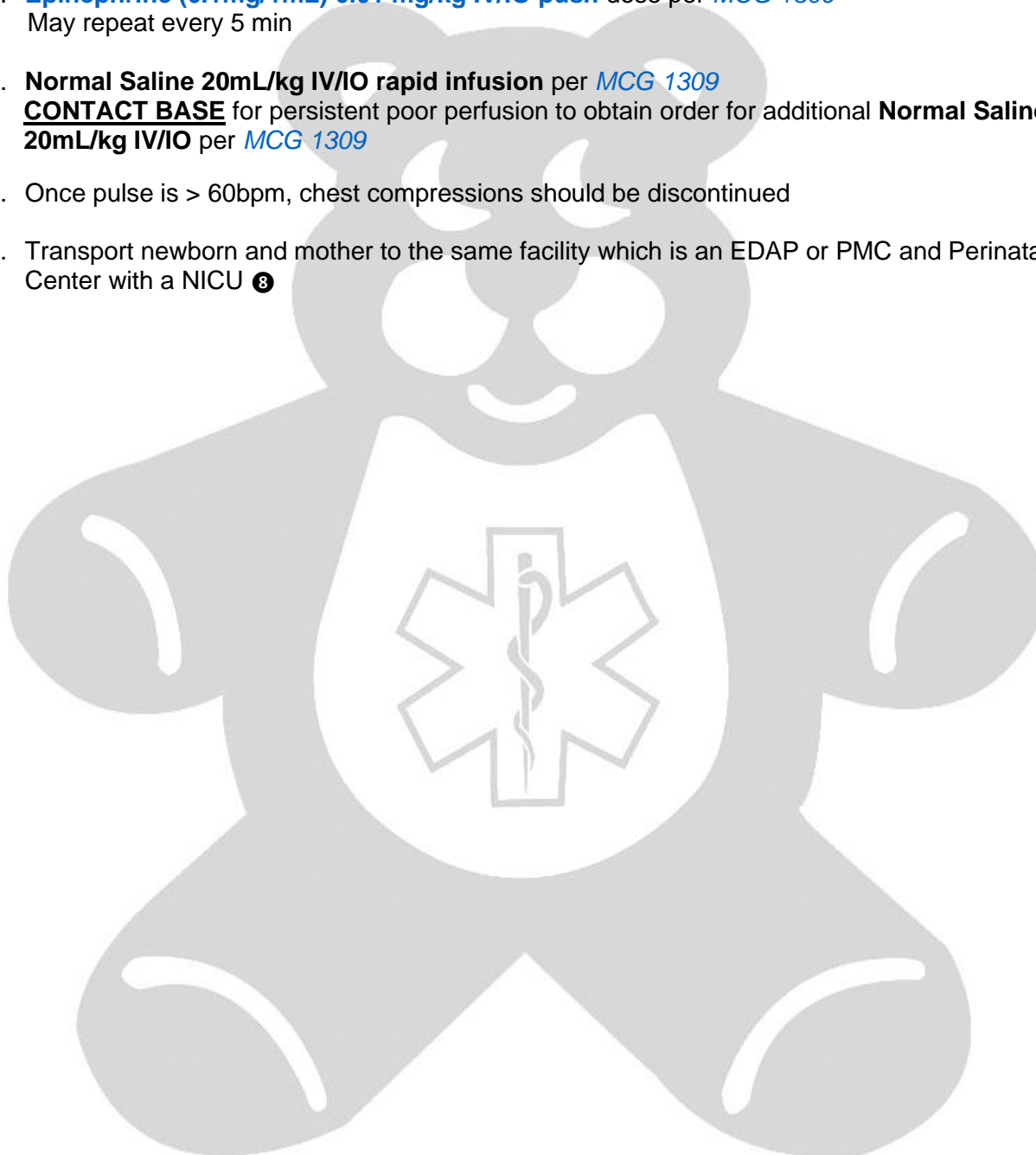


**Treatment Protocol: NEWBORN / NEONATAL RESUSCITATION**

**Ref. No. 1216-P**

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14. **Epinephrine (0.1mg/1mL) 0.01 mg/kg IV/IO push** dose per [MCG 1309](#)  
May repeat every 5 min
15. **Normal Saline 20mL/kg IV/IO rapid infusion** per [MCG 1309](#)  
**CONTACT BASE** for persistent poor perfusion to obtain order for additional **Normal Saline 20mL/kg IV/IO** per [MCG 1309](#)
16. Once pulse is > 60bpm, chest compressions should be discontinued
17. Transport newborn and mother to the same facility which is an EDAP or PMC and Perinatal Center with a NICU **8**





### **SPECIAL CONSIDERATIONS**

- ① This protocol is to be used for the newly born only, infants otherwise within the first month of life use TP 1210-P Pediatric Cardiac Arrest. The most important intervention for a resuscitation of the newly born in the field is to “Dry, Warm and Stimulate” – this allows for reversal of apnea after delivery.
- ② “Dry, Warm, and Stimulate then you have to Ventilate” – If respiratory effort poor or HR < 100bpm then Ventilate using BMV. The most important signs to monitor are respiratory effort, pulse oximetry and heart rate. Measuring the pulse oximetry on the right hand provides the most accurate oxygen saturation in infants that are transitioning from fetal to normal circulation. At 60 seconds, 60% is the target with an increase of 5% every minute until 5 minutes of life when oximetry is 80-85%.

<b>Time Since Birth</b>	<b>Projected Increase in Pulse Oximeter Over Time</b>
1 minute	60-65%
2 minutes	65-70%
3 minutes	70-75%
4 minutes	75-80%
5 minutes	80-85%
10 minutes	85-90%

#### **Assessments that are used to initiate BMV and chest compressions.**

<b>Heart Rate (bpm)</b>	<b>Respiratory Distress/Apnea</b>	<b>Central Cyanosis Present</b>	<b>Intervention</b>
>100	No	Yes	Blow-by Oxygen
---	Yes	Yes/No	BMV
60-100	-	-	BMV
<60	-	-	BMV; Chest compression

- ③ Suction prior to delivery is no longer recommended for presence of meconium (thick or thin). Suctioning should occur only if there is airway obstruction present and the mouth should be suctioned first followed by the nose.
- ④ Delay in clamping and cutting the cord for up to 30 to 60 seconds is recommended unless the newborn needs immediate resuscitation.
- ⑤ Assessing pulse at the base of the umbilical cord is preferred, pulse rate <100bpm is a sign of newborn distress and requires BMV.
- ⑥ In obtaining vascular access, place an IO in a newborn use light pressure as the bone cortices are soft and the needle can easily penetrate both cortices of the bone.
- ⑦ Chest compressions should be initiated in newborns with a pulse < 60bpm and continued until the pulse increases > 60bpm



- ⑧ Newborns requiring field resuscitation are at high risk for complications and will require critical care by neonatologists; consider stability of both patients for destination decisions (Mother and Newborn).





**Treatment Protocol: PREGNANCY COMPLICATION**

**Ref. No. 1217-P**

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**Base Hospital Contact: Required for vaginal bleeding at > 20 weeks pregnancy and newborn delivery ① ② ③ ④**

1. Do not delay transport for treatment if suspected eclampsia; Manage delivery en route
2. Assess airway and initiate basic and/or advanced airway maneuvers prn ([MCG 1302](#))
3. Administer **Oxygen** prn ([MCG 1302](#))
4. Establish vascular access ([MCG 1375](#))  
Vascular access should not take precedence over controlled delivery or emergency transport
5. For poor perfusion ([MCG 1355](#)):  
**Normal Saline 20mL/kg IV/IO rapid infusion** per [MCG 1309](#)  
**CONTACT BASE** for persistent poor perfusion to obtain order for additional **Normal Saline 20mL/kg IV/IO** per [MCG 1309](#)
6. If crown is showing with amniotic sac intact, pinch sac and twist the membrane to rupture

**BREECH DELIVERY**

7. Support presenting part and allow newborn to deliver
8. If head does not deliver, place gloved hand inside mother and form “V” formed with fingers by baby’s face to provide an opening for the airway

**PROLAPSED CORD**

9. Manually elevate presenting fetal part off the umbilical cord; maintain elevation of the presenting part until transfer of care ⑤
10. Wrap cord with moist gauze

**NUCHAL CORD**

11. If nuchal cord is loose attempt slipping the cord over the head prior to delivery
12. If the cord is too tight to easily slip over the head, clamp the cord in two places 1 inch apart and cut the cord with scissors

**SHOULDER DYSTOCIA**

13. Perform McRobert’s maneuver with suprapubic pressure in order to deliver the anterior shoulder ⑥



**Treatment Protocol: PREGNANCY COMPLICATION**

**Ref. No. 1217-P**

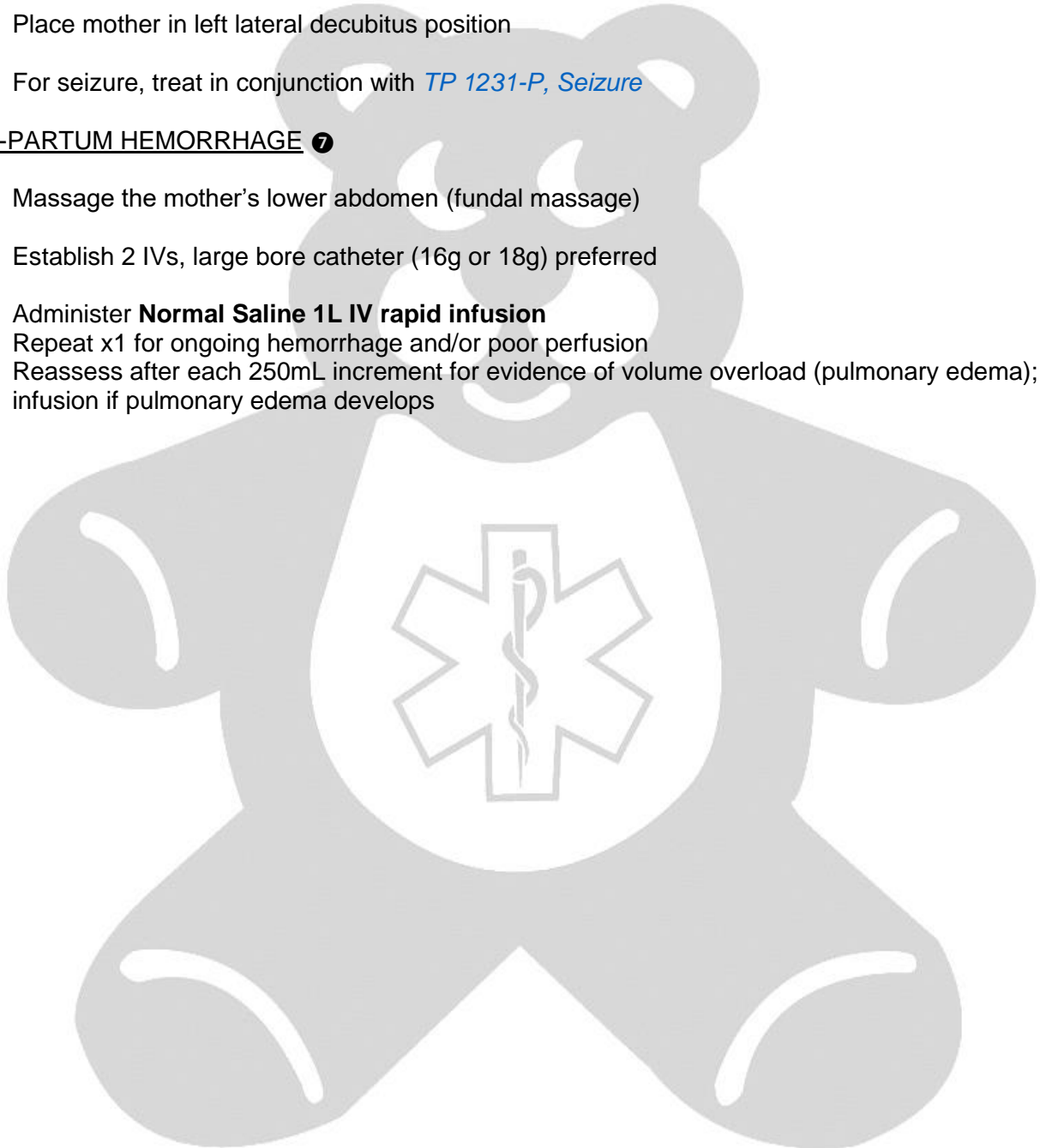
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MATERNAL HYPERTENSION (BP  $\geq$  140/90mmHg) / ECLAMPSIA

14. Place mother in left lateral decubitus position
15. For seizure, treat in conjunction with [TP 1231-P, Seizure](#)

POST-PARTUM HEMORRHAGE 7

18. Massage the mother's lower abdomen (fundal massage)
19. Establish 2 IVs, large bore catheter (16g or 18g) preferred
20. Administer **Normal Saline 1L IV rapid infusion**  
Repeat x1 for ongoing hemorrhage and/or poor perfusion  
Reassess after each 250mL increment for evidence of volume overload (pulmonary edema); stop infusion if pulmonary edema develops





**SPECIAL CONSIDERATIONS**

- ❶ Pediatric patients who are pregnant must be evaluated for child maltreatment and are at high risk for complications during delivery for the mother and the newborn.
- ❷ This protocol was intended for complications of pregnancy at the time of delivery; if patient is known to be pregnant and has complaints not associated with labor or delivery treat per [TP 1202-P, General Medical](#) or most applicable protocol.
- ❸ If the patient has vaginal bleeding associated with known pregnancy >20 weeks, contact Base and communicate signs and symptoms so that the receiving hospital can pre-notify OB consultants as needed.
- ❹ Any delivery after the first trimester (12 weeks) should be considered childbirth for the purposes of this treatment protocol and paramedics should contact Base to discuss the management and transport. In general, delivery prior to 20 weeks gestation is nonviable and does not require resuscitation. However; dates can be incorrectly estimated; therefore, Base Contact is strongly encouraged. Any *potentially viable birth* should be resuscitated in the field and transported to a perinatal center that is also an EDAP (with a NICU if  $\leq 34$  weeks gestation). Births prior to 20 weeks do not necessarily require specialty center care and can be transported to the MAR.
- ❺ In addition to manually elevating the presenting part from the umbilical cord, placing the patient in Trendelenburg position during transport can help to elevate the presenting part off the cord to maintain blood flow to the fetus. Do not attempt to push a prolapsed cord back in.
- ❻ Shoulder dystocia is inability to deliver the anterior shoulder, which usually occurs in large newborns. If delivery fails to progress after head delivers, hyperflex mother's hips tightly in knee to chest position (McRobert's maneuver) and apply firm suprapubic pressure in attempt to dislodge anterior shoulder.
- ❼ Hypertension in a pregnant or recently post-partum is a sign of pre-eclampsia, which required immediate emergency and obstetric care. Additional signs of pre-eclampsia are edema and headache which can progress to seizures (eclampsia). Patients who are  $\geq 20$  weeks pregnant or  $\leq 6$  weeks post-partum with hypertension (BP  $\geq 140/90$ mmHg) should be transported to a Perinatal Center for evaluation.
- ❽ Some bleeding is normal during delivery, typically up to 500mL. Bleeding is reduced with fundal massage after placental delivery, which promotes contraction of the uterus. Post-partum hemorrhage is defined as blood loss with signs of poor perfusion and/or cumulative blood loss  $\geq 1000$ mLs.

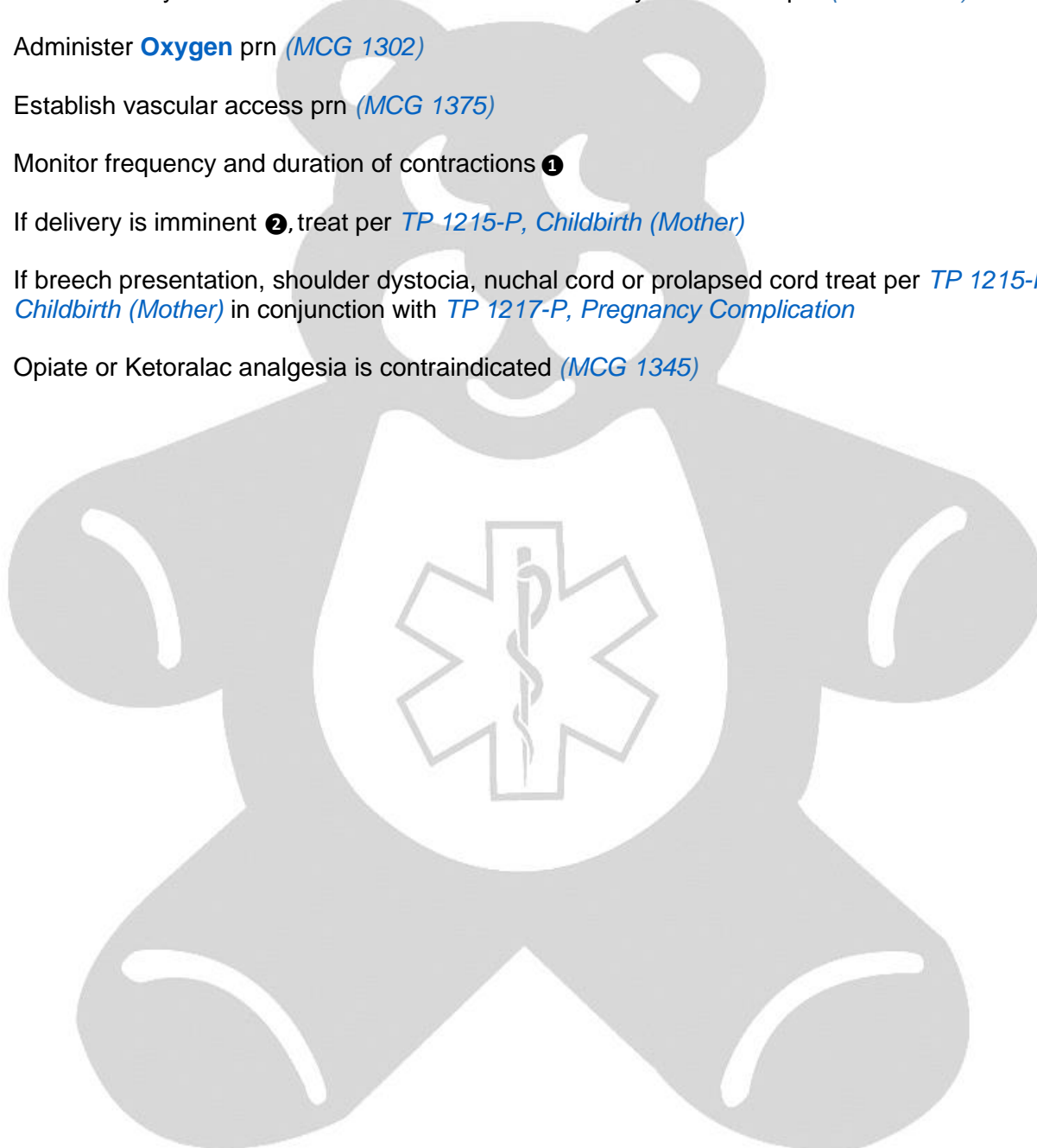


**Treatment Protocol: PREGNANCY / LABOR**

**Ref. No. 1218-P**

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1. Assess airway and initiate basic and/or advanced airway maneuvers prn ([MCG 1302](#))
2. Administer **Oxygen** prn ([MCG 1302](#))
3. Establish vascular access prn ([MCG 1375](#))
4. Monitor frequency and duration of contractions ❶
5. If delivery is imminent ❷, treat per [TP 1215-P, Childbirth \(Mother\)](#)
6. If breech presentation, shoulder dystocia, nuchal cord or prolapsed cord treat per [TP 1215-P, Childbirth \(Mother\)](#) in conjunction with [TP 1217-P, Pregnancy Complication](#)
7. Opiate or Ketoralac analgesia is contraindicated ([MCG 1345](#))

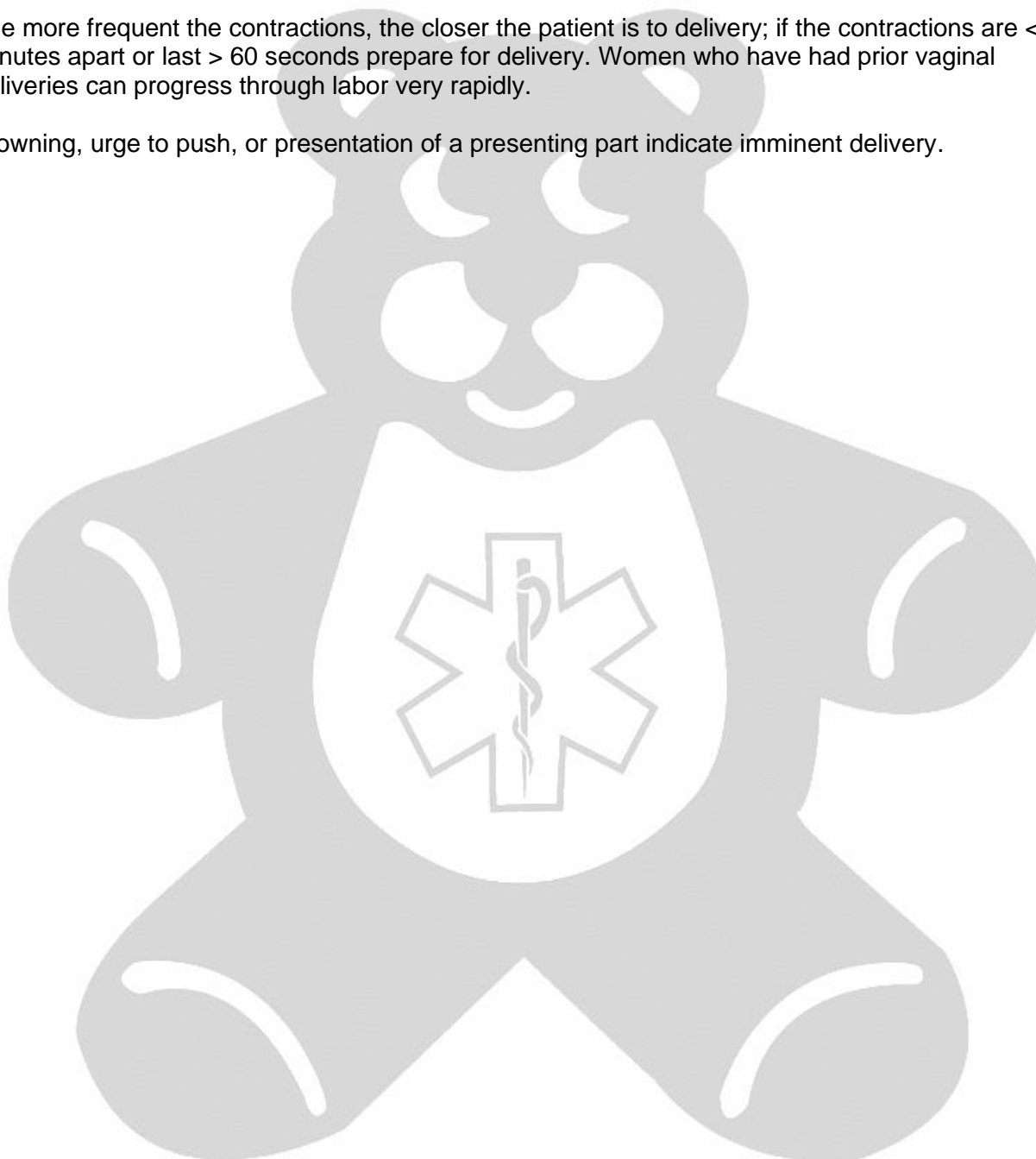






**SPECIAL CONSIDERATIONS**

- ❶ The more frequent the contractions, the closer the patient is to delivery; if the contractions are < 2 minutes apart or last > 60 seconds prepare for delivery. Women who have had prior vaginal deliveries can progress through labor very rapidly.
- ❷ Crowning, urge to push, or presentation of a presenting part indicate imminent delivery.







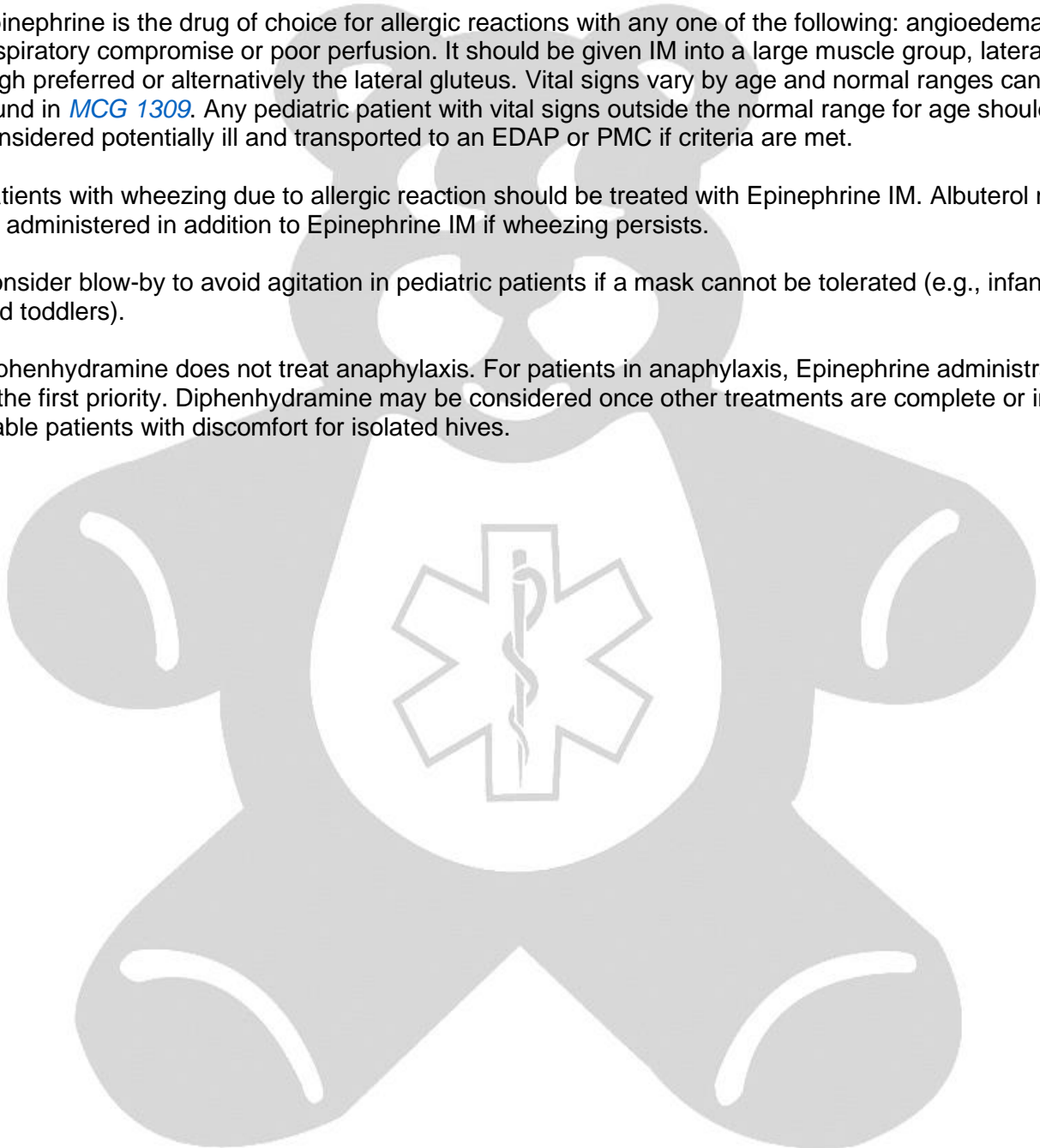
**Base Hospital Contact: Required for anaphylaxis.**

1. Assess airway and initiate basic airway maneuvers ([MCG 1302](#))  
Continually assess patient's airway and ventilation status
2. Administer **Oxygen** prn ([MCG 1302](#))  
**High-flow Oxygen 15L/min** for anaphylaxis with poor perfusion or airway compromise
3. Advanced airway prn ([MCG 1302](#))
4. Initiate cardiac monitoring prn ([MCG 1308](#))
5. For anaphylaxis:  
**Epinephrine (1mg/mL) 0.01mg/kg IM**, dose per [MCG 1309](#), in the lateral thigh ❶  
**CONTACT BASE**: Repeat Epinephrine (1mg/mL) 0.01mg/kg IM every 10 min x2 prn persistent symptoms, maximum total 3 doses
6. Establish vascular access prn ([MCG 1375](#))  
Vascular access for all patients with anaphylaxis
7. For poor perfusion ([MCG 1355](#)) :  
**Normal Saline 20mL/kg IV rapid infusion** per [MCG 1309](#)
8. For persistent poor perfusion after initial 5mL/kg Normal Saline (anaphylactic shock)  
Continue **Normal Saline 20mL/kg IV rapid infusion**  
**Push-dose Epinephrine** – mix 9mL Normal Saline with 1mL Epinephrine (0.1mg/mL) IV formulation in a 10mL syringe; administer **Push-dose Epinephrine (0.01mg/mL)**, dose per [MCG 1309](#) every 1-5 minutes as needed to maintain SBP > 70mmHg until hospital arrival  
  
**CONTACT BASE** concurrent with initial dose of Push-dose Epinephrine  
  
Treat in conjunction with [TP 1207-P, Shock/Hypotension](#)
9. If wheezing: ❷  
< 4 years of age: **Albuterol 2.5mg (3mL) via or 2 puffs via MDI** per [MCG 1309](#) ❸  
≥ 4 years of age: **Albuterol 5mg (6mL) via or 4 puffs via MDI** per [MCG 1309](#) ❸  
Repeat x2 prn, maximum 3 total doses prior to Base contact
10. For itching/hives:  
**Diphenhydramine (50mg/mL) 1mg/kg slow IV push** one time, dose per [MCG 1309](#) ❹  
If unable to obtain venous access, **Diphenhydramine (50mg/mL) 1mg/kg deep IM**, dose per [MCG 1309](#)



**SPECIAL CONSIDERATIONS**

- ❶ Epinephrine is the drug of choice for allergic reactions with any one of the following: angioedema, respiratory compromise or poor perfusion. It should be given IM into a large muscle group, lateral thigh preferred or alternatively the lateral gluteus. Vital signs vary by age and normal ranges can be found in [MCG 1309](#). Any pediatric patient with vital signs outside the normal range for age should be considered potentially ill and transported to an EDAP or PMC if criteria are met.
- ❷ Patients with wheezing due to allergic reaction should be treated with Epinephrine IM. Albuterol may be administered in addition to Epinephrine IM if wheezing persists.
- ❸ Consider blow-by to avoid agitation in pediatric patients if a mask cannot be tolerated (e.g., infants and toddlers).
- ❹ Diphenhydramine does not treat anaphylaxis. For patients in anaphylaxis, Epinephrine administration is the first priority. Diphenhydramine may be considered once other treatments are complete or in stable patients with discomfort for isolated hives.





**Treatment Protocol: BURNS**

**Ref. No. 1220-P**

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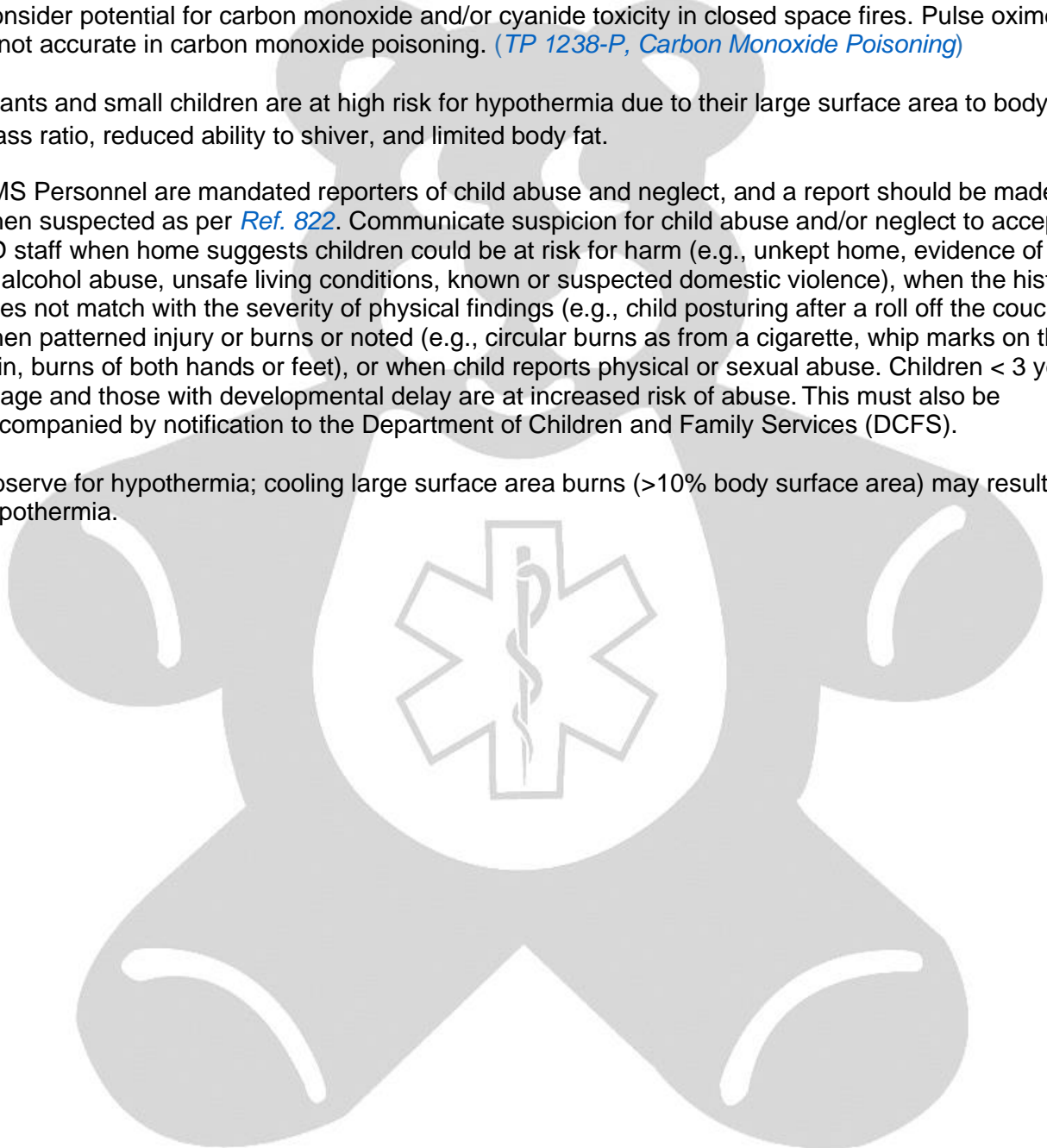
**Base Hospital Contact: Required for burns meeting Trauma Center criteria, 2<sup>nd</sup> or 3<sup>rd</sup> degree burns  $\geq$  10% TBSA.**

1. Assess airway and initiate basic and/or advanced airway maneuvers prn ([MCG 1302](#))  
If evidence of inhalation injury, treat in conjunction with [TP 1236-P, Inhalation Injury](#)
2. Administer **Oxygen** prn ([MCG 1302](#))  
If carbon monoxide exposure suspected, provide **high-flow Oxygen 15 L/min** and treat in conjunction with [TP 1238-P, Carbon Monoxide Poisoning](#) ①
3. Assess for signs of trauma  
If traumatic injury suspected, treat in conjunction with [TP 1244-P, Traumatic Injury](#)
4. Remove jewelry and clothing from involved area
5. Apply blanket to keep patient warm ②
6. For ELECTRICAL burns  
Cover with dry dressing or sheet, treat in conjunction with [TP 1221-P, Electrocutation](#)
7. For THERMAL burns ③  
Cover with dry dressing or sheet  
Consider cooling with water for burns isolated to less than 5% BSA
8. For CHEMICAL burns  
If dry, brush and flush with copious amounts of water  
If liquid, flush with large amounts of water ④  
If eye involvement, irrigate eye with **Normal Saline 1L** during transport; allow patient to remove contact lenses if possible, treat in conjunction with [TP 1240-P, HAZMAT](#)
9. Establish vascular access prn ([MCG 1375](#))  
For IO placement in alert patients administer, **Lidocaine 2% 0.5mg/kg (20mg/mL) slow IO push**, dose per [MCG 1309](#), may repeat once for infusion pain at half initial dose
10. For partial/full thickness burn involves  $>10\%$  body surface area or poor perfusion ([MCG 1355](#)):  
**Normal Saline 20mL/kg IV/IO rapid infusion** per [MCG 1309](#)  
**CONTACT BASE** for persistent poor perfusion to obtain order for additional **Normal Saline 20mL/kg IV/IO**
11. Elevate burned extremities as able for comfort
12. For pain management: refer to [MCG 1345, Pain Management](#)  
Dose per [MCG 1309](#)



**SPECIAL CONSIDERATIONS**

- ❶ Consider potential for carbon monoxide and/or cyanide toxicity in closed space fires. Pulse oximetry is not accurate in carbon monoxide poisoning. ([TP 1238-P, Carbon Monoxide Poisoning](#))
- ❷ Infants and small children are at high risk for hypothermia due to their large surface area to body mass ratio, reduced ability to shiver, and limited body fat.
- ❸ EMS Personnel are mandated reporters of child abuse and neglect, and a report should be made when suspected as per [Ref. 822](#). Communicate suspicion for child abuse and/or neglect to accepting ED staff when home suggests children could be at risk for harm (e.g., unkept home, evidence of drug or alcohol abuse, unsafe living conditions, known or suspected domestic violence), when the history does not match with the severity of physical findings (e.g., child posturing after a roll off the couch), when patterned injury or burns or noted (e.g., circular burns as from a cigarette, whip marks on the skin, burns of both hands or feet), or when child reports physical or sexual abuse. Children < 3 years of age and those with developmental delay are at increased risk of abuse. This must also be accompanied by notification to the Department of Children and Family Services (DCFS).
- ❹ Observe for hypothermia; cooling large surface area burns (>10% body surface area) may result in hypothermia.





**Treatment Protocol: ELECTOCUTION**

**Ref. No. 1221-P**

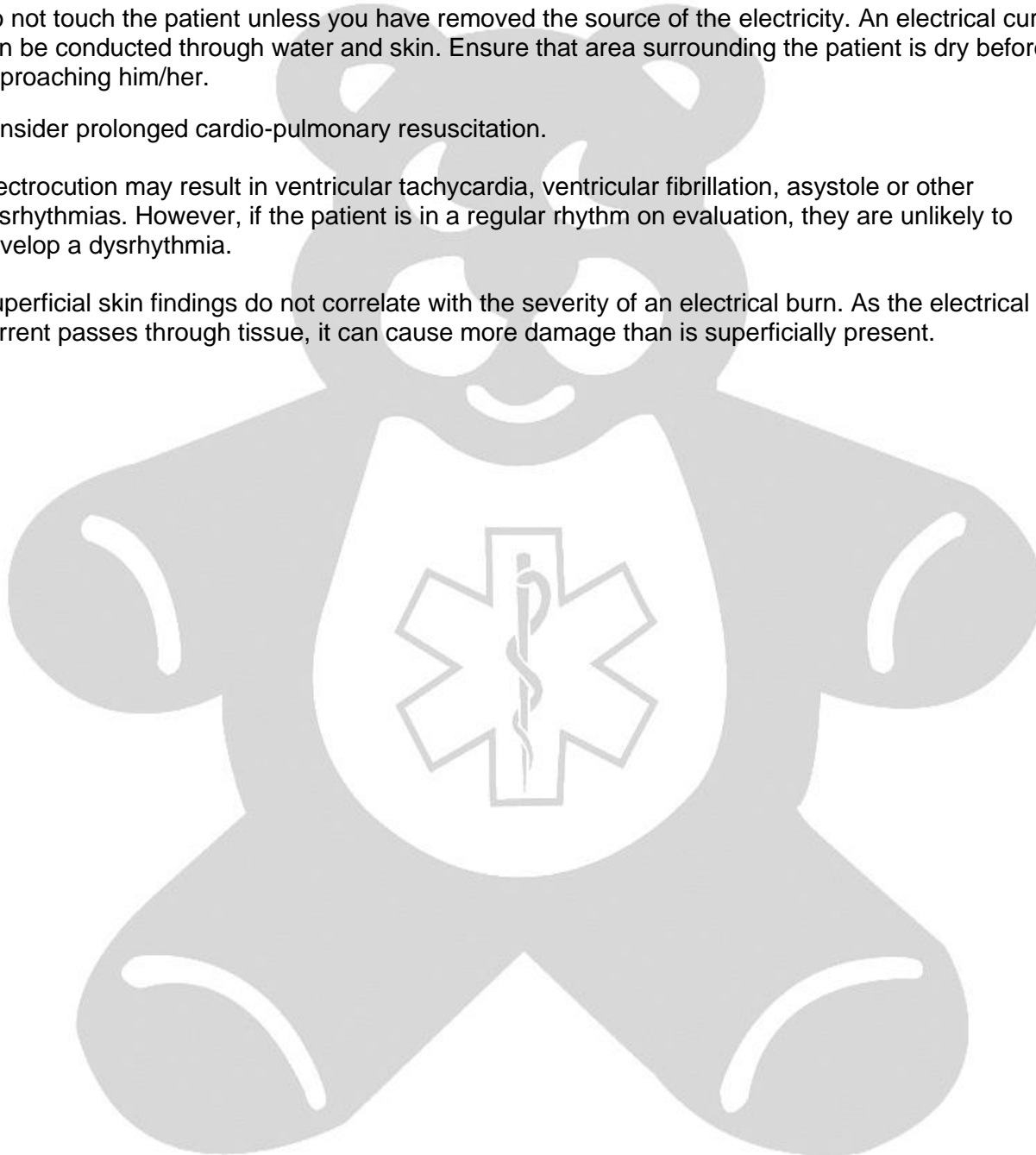
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1. Ensure source of electricity is turned off ❶
2. Assess airway and initiate basic and/or advanced airway maneuvers prn ([MCG 1302](#))
3. For cardiac arrest, treat per [TP 1210-P Cardiac Arrest](#) ❷
4. Administer **Oxygen** prn ([MCG 1302](#))
5. Advanced airway prn ([MCG 1302](#))
6. Initiate cardiac monitoring ([MCG 1308](#))  
Perform 12-Lead ECG prn  
If cardiac dysrhythmia present, treat in conjunction with [TP 1212-P, Cardiac Dysrhythmia-Bradycardia](#) or [TP 1213-P, Cardiac Dysrhythmia-Tachycardia](#) ❸
7. Assess for signs of trauma  
If traumatic injury suspected, treat in conjunction with [TP 1244-P, Traumatic Injury](#)
8. Remove jewelry and clothing from involved areas
9. Establish vascular access prn ([MCG 1375](#))
10. For burns, treat in conjunction with [TP 1220-P, Burns](#)  
Cover affected areas with dry dressing or sheet ❹
11. For poor perfusion ([MCG 1355](#)):  
**Normal Saline 20mL/kg IV rapid infusion** per [MCG 1309](#)  
For persistent poor perfusion, treat in conjunction with [TP 1207-P, Shock/Hypotension](#)
12. For pain management: refer to [MCG 1345, Pain Management](#)  
Dose per [MCG 1309](#)
13. For nausea or vomiting in patients  $\geq 4$  years old:  
**Ondansetron 4mg ODT**



**SPECIAL CONSIDERATIONS**

- ❶ Do not touch the patient unless you have removed the source of the electricity. An electrical current can be conducted through water and skin. Ensure that area surrounding the patient is dry before approaching him/her.
- ❷ Consider prolonged cardio-pulmonary resuscitation.
- ❸ Electrocutation may result in ventricular tachycardia, ventricular fibrillation, asystole or other dysrhythmias. However, if the patient is in a regular rhythm on evaluation, they are unlikely to develop a dysrhythmia.
- ❹ Superficial skin findings do not correlate with the severity of an electrical burn. As the electrical current passes through tissue, it can cause more damage than is superficially present.







**Treatment Protocol: HYPERTHERMIA (ENVIRONMENTAL)**

**Ref. No. 1222-P**

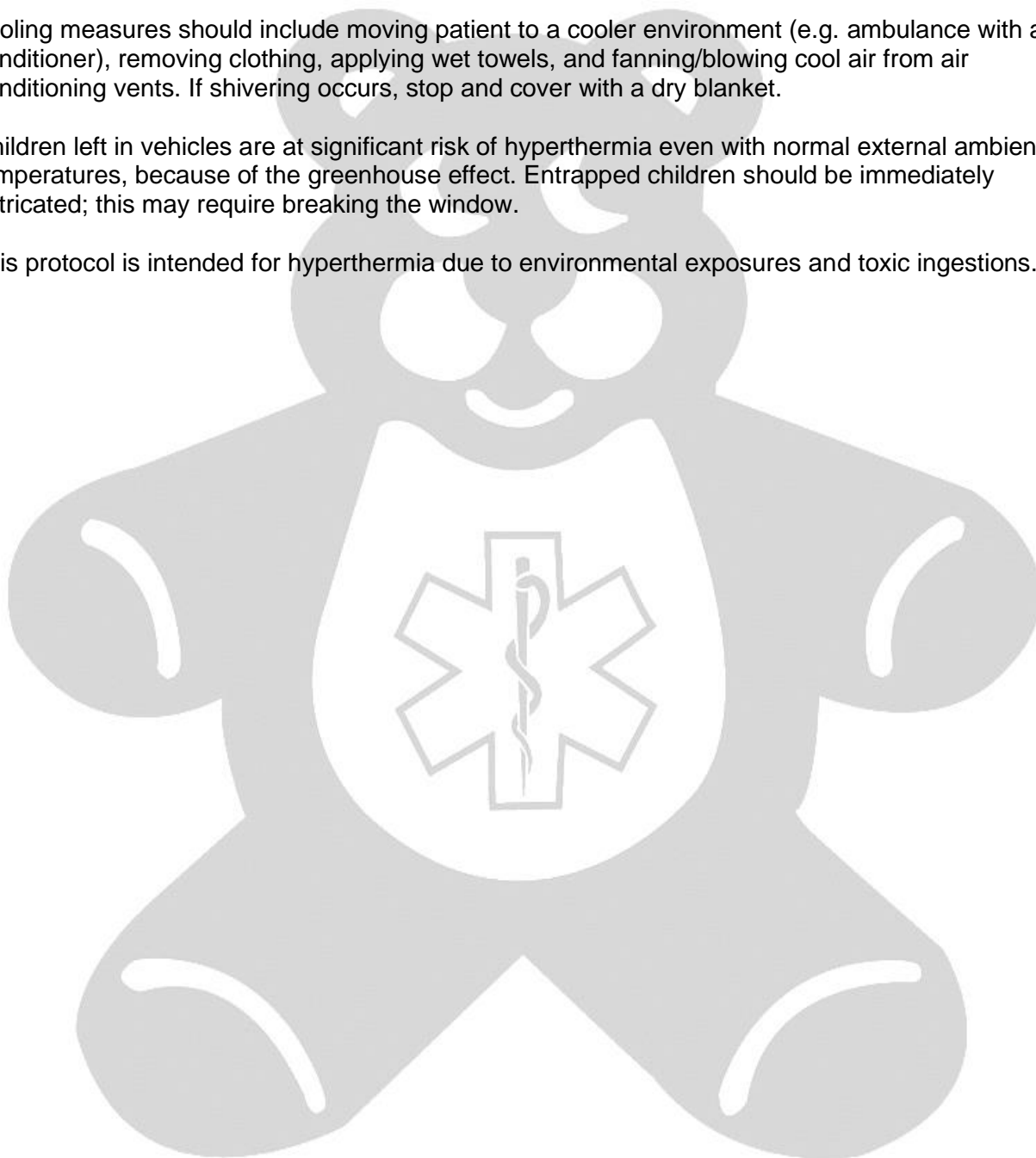
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1. Assess airway and initiate basic and/or advanced airway maneuvers prn ([MCG 1302](#))
2. Administer **Oxygen** prn ([MCG 1302](#))
3. Initiate cardiac monitoring ([MCG 1308](#))  
For patients with dysrhythmias, treat in conjunction with [TP 1212-P, Cardiac Dysrhythmia-Bradycardia](#) or [TP 1213-P, Cardiac Dysrhythmia-Tachycardia](#)
4. Provide cooling measures ❶ ❷
5. For patients with fever due to presumed infection/sepsis, treat per [TP 1204-P, Fever/Sepsis](#) ❸
6. Establish vascular access prn ([MCG 1375](#))
7. For altered level of consciousness, treat in conjunction with [TP 1229-P, ALOC](#)
8. For adequate perfusion and normal mental status, encourage oral hydration
9. For poor perfusion ([MCG 1355](#)) or if unable to take fluids orally:  
**Normal Saline 20mL/kg IV rapid infusion** per [MCG 1309](#)  
For persistent poor perfusion, treat in conjunction with [TP 1207-P, Shock/Hypotension](#)



**SPECIAL CONSIDERATIONS**

- ❶ Cooling measures should include moving patient to a cooler environment (e.g. ambulance with air conditioner), removing clothing, applying wet towels, and fanning/blowing cool air from air conditioning vents. If shivering occurs, stop and cover with a dry blanket.
- ❷ Children left in vehicles are at significant risk of hyperthermia even with normal external ambient temperatures, because of the greenhouse effect. Entrapped children should be immediately extricated; this may require breaking the window.
- ❸ This protocol is intended for hyperthermia due to environmental exposures and toxic ingestions.







**Treatment Protocol: HYPOTHERMIA / COLD INJURY**

**Ref. No. 1223-P**

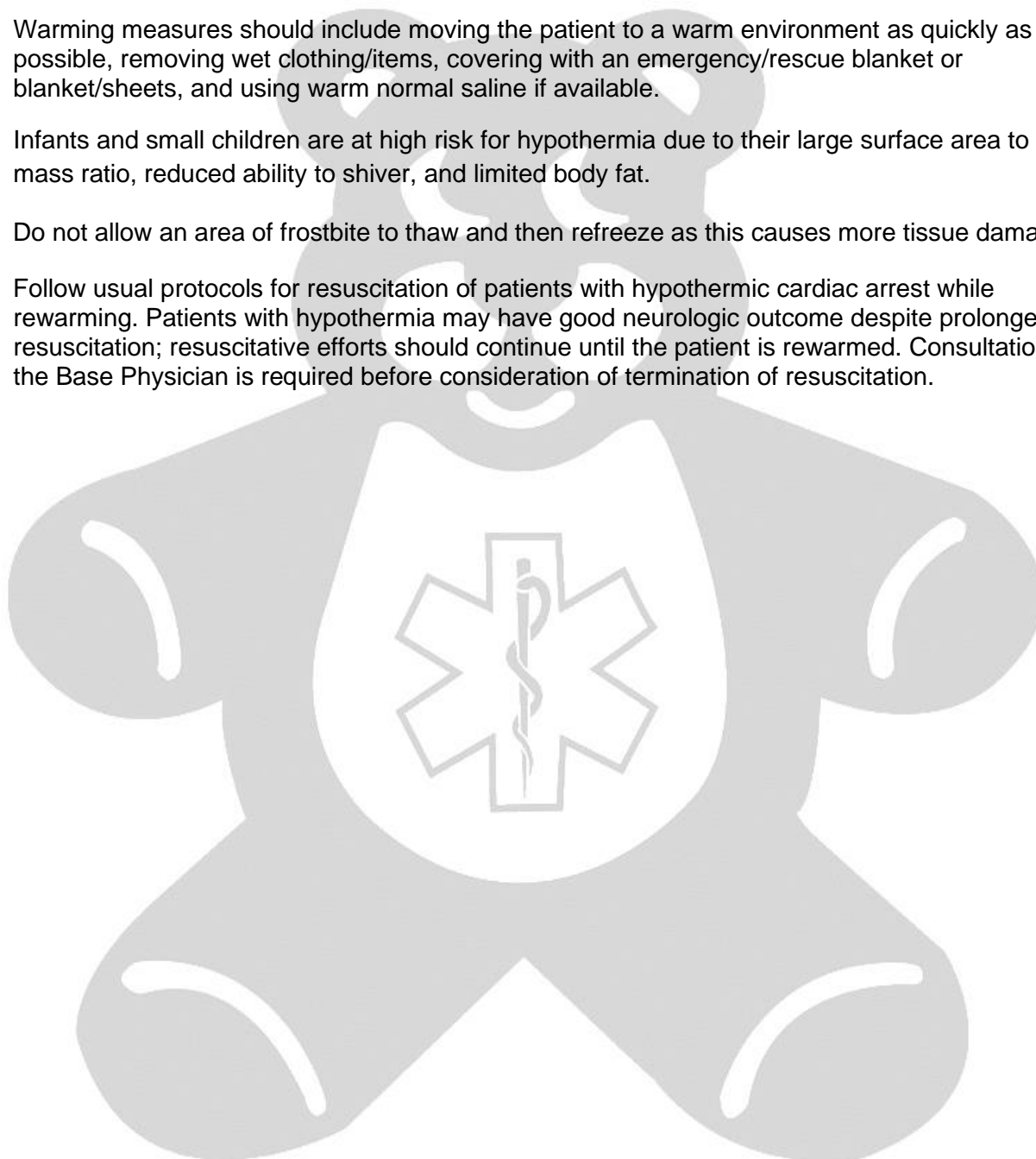
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1. Assess airway and initiate basic and/or advanced airway maneuvers ([MCG 1302](#))
2. Administer **Oxygen** prn ([MCG 1302](#))
3. Initiate cardiac monitoring ([MCG 1308](#))  
For patients with dysrhythmias, treat in conjunction with [TP 1212-P, Cardiac Dysrhythmia-Bradycardia](#) or [TP 1213-P, Cardiac Dysrhythmia-Tachycardia](#)
4. Provide warming measures ❶ ❷
5. For frostbite:  
Handle affected area gently, remove jewelry, cover and protect the area ❸
6. Establish vascular access prn ([MCG 1375](#))
7. For altered level of consciousness, treat in conjunction with [TP 1229-P, ALOC](#)
8. For poor perfusion ([MCG 1355](#)):  
**Normal Saline 20mL/kg IV rapid infusion** per [MCG 1309](#); use warm saline if available  
For persistent poor perfusion, treat in conjunction with [TP 1207-P, Shock/Hypotension](#)
9. For cardiac arrest, treat in conjunction with [TP 1210-P, Cardiac Arrest](#)  
Initiate rewarming while resuscitation is ongoing ❹



**SPECIAL CONSIDERATIONS**

- ❶ Warming measures should include moving the patient to a warm environment as quickly as possible, removing wet clothing/items, covering with an emergency/rescue blanket or blanket/sheets, and using warm normal saline if available.
- ❷ Infants and small children are at high risk for hypothermia due to their large surface area to body mass ratio, reduced ability to shiver, and limited body fat.
- ❸ Do not allow an area of frostbite to thaw and then refreeze as this causes more tissue damage.
- ❹ Follow usual protocols for resuscitation of patients with hypothermic cardiac arrest while rewarming. Patients with hypothermia may have good neurologic outcome despite prolonged resuscitation; resuscitative efforts should continue until the patient is rewarmed. Consultation with the Base Physician is required before consideration of termination of resuscitation.





**Treatment Protocol: STINGS / VENOMOUS BITES**

**Ref. No. 1224-P**

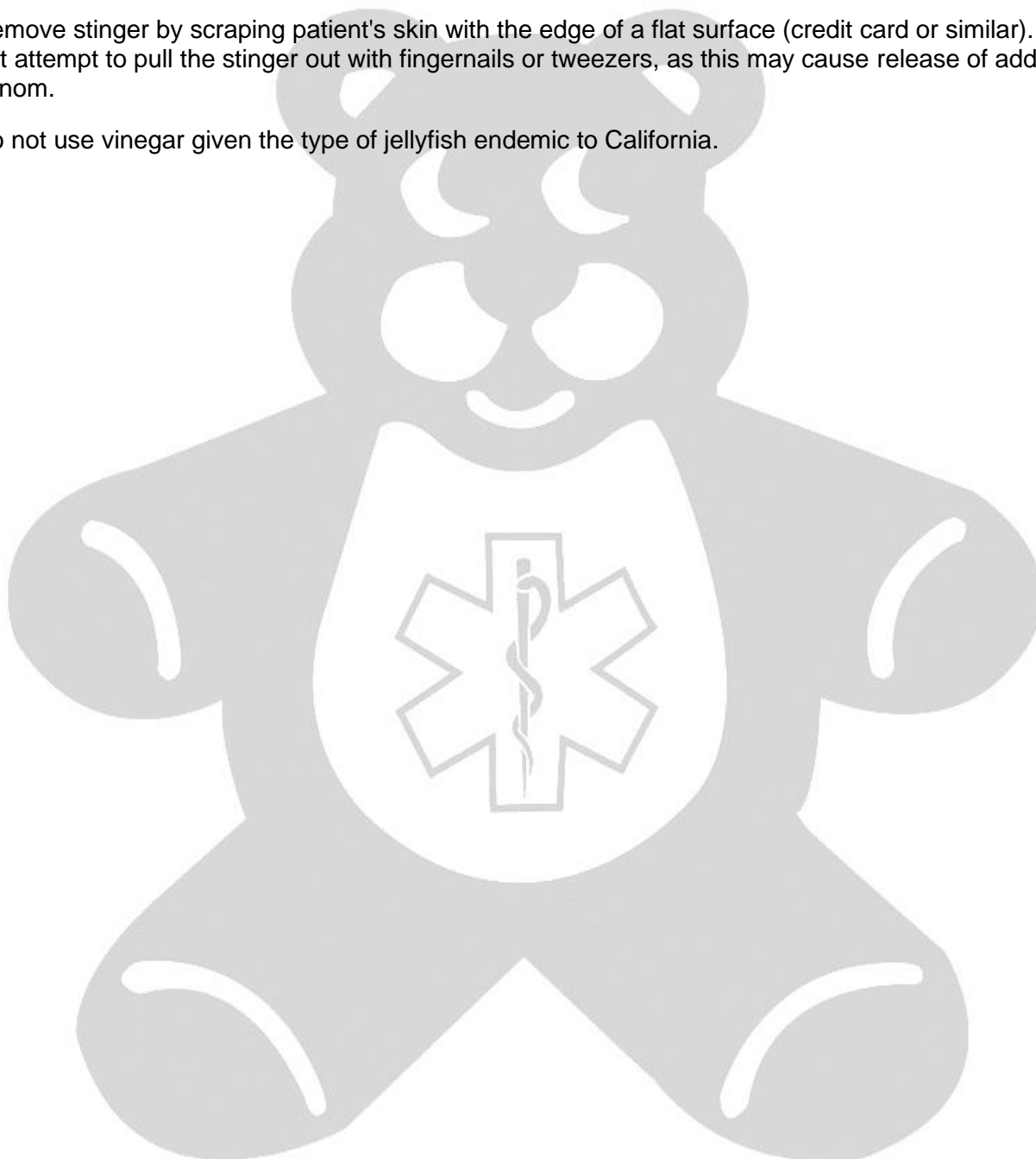
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1. Assess airway and initiate basic and/or advanced airway maneuvers ([MCG 1302](#))
2. Prioritize treatment of systemic symptoms  
For signs or symptoms of allergic reaction, treat with [TP 1219-P, Allergy](#)  
For poor perfusion, treat in conjunction with [TP 1207-P, Shock/Hypotension](#)
3. Keep patient calm and limit activity  
Position affected extremity at or below level of the heart
4. For SNAKE BITES  
Splint the affected area  
Elevate the extremity to the level of the heart
5. For INSECT (bee, wasp, ant), SPIDER and SCORPION STINGS:  
Remove stinger if visualized ❶  
Apply cold pack
6. For MARINE ENVENOMATIONS (e.g., jelly fish, stingrays and scorpion fish):  
Remove barb when applicable:  
Soak area in hot water if available ❷
7. Establish vascular access prn ([MCG 1375](#))
8. For continued pain after specific measures above: refer to [MCG 1345, Pain Management](#)  
Dose per [MCG 1309](#)
9. For nausea or vomiting in patients  $\geq 4$  years old:  
[Ondansetron 4mg ODT](#)



**SPECIAL CONSIDERATIONS**

- ❶ Remove stinger by scraping patient's skin with the edge of a flat surface (credit card or similar). Do not attempt to pull the stinger out with fingernails or tweezers, as this may cause release of additional venom.
- ❷ Do not use vinegar given the type of jellyfish endemic to California.





**Treatment Protocol: SUBMERSION**

**Ref. No. 1225-P**

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**Base Hospital Contact: Required for ALOC and decompression emergencies ([Ref. 518](#)).**

1. Assess airway and initiate basic and/or advanced airway maneuvers ([MCG 1302](#))
2. For cardiac arrest, treat per [TP 1210-P, Cardiac Arrest](#) ❶
3. Administer **Oxygen** prn ([MCG 1302](#))  
For suspected decompression illness ❷, provide **high-flow Oxygen 15L/min** and **CONTACT BASE**
4. Maintain supine if suspected decompression illness
5. Advanced airway prn ([MCG 1302](#))
6. Initiate cardiac monitoring ([MCG 1308](#))
7. Provide warming measures ❸ ❹
8. Establish vascular access prn ([MCG 1375](#))
9. For altered level of consciousness, treat in conjunction with [TP 1229-P, Altered Level of Consciousness \(ALOC\)](#)
10. For respiratory distress, treat in conjunction with [TP 1237-P, Respiratory Distress](#) ❺
11. For poor perfusion ([MCG 1355](#)) or for suspected decompression illness:  
**Normal Saline 20mL/kg IV rapid infusion** per [MCG 1309](#); use warm saline if available ❻  
For persistent poor perfusion, treat in conjunction with [TP 1207-P, Shock/Hypotension](#)
12. Contact **Public Health 213-989-7140** for all submersion incidents involving pools or spas after transfer of patient care in the emergency department or upon termination of resuscitation in the field. ❼



**SPECIAL CONSIDERATIONS**

- ❶ Cardiac arrest from drowning should be treated per [TP 1210-P, Cardiac Arrest](#). Ventilation is particularly important as the cardiac arrest is almost always due to respiratory failure. In cases of cold water drowning follow usual protocols for resuscitation while simultaneously rewarming the patient. Patients with hypothermia due to cold water drowning, may have good neurologic outcome despite prolonged resuscitation; resuscitative efforts should continue until the patient is rewarmed. Consultation with the Base Physician is required before consideration of termination of resuscitation in patients with suspected hypothermia.
- ❷ Decompression illness includes arterial gas embolism from barotrauma and decompression sickness (aka “the bends”) due to dissolved nitrogen in the blood coming out of solution. Decompression illness most frequently occurs in scuba divers after breathing compressed air at depth. While arterial gas embolism presents almost immediately after ascent, decompression sickness is often delayed and should be considered in any patient with symptoms (e.g. respiratory distress, ALOC, chest or body pain) within 24 hours of completing a dive. All patients with possible decompression illness need immediate evaluation for possible hyperbaric treatment. Per [Ref. 518](#), contact Base immediately to discuss.
- ❸ Warming measures should include moving the patient to a warm environment as quickly as possible, removing wet clothing/items, covering with an emergency/rescue blanket or other blankets/sheets, and using warm Normal Saline if available.
- ❹ Infants and small children are at high risk for hypothermia due to their large surface area to body mass ratio, reduced ability to shiver, and limited body fat.
- ❺ Rales may be present in patients after submersion/drowning due to direct lung injury and/or aspiration of water. This is not an indication of cardiogenic pulmonary edema (such as from congestive heart failure), which is extremely rare in children, and does not prohibit administration of IV fluids. IV fluids should be initiated and continued unless respiratory status worsens during administration.
- ❻ EMS is assisting the Department of Public Health (DPH) in promptly investigating fatal or nonfatal drownings at public pools or spas in order to ensure safety can be verified before reopening. Contacting the on-call DPH officer will allow timely investigation of these incidents and prevent future incidents.



**Treatment Protocol: ENT / DENTAL EMERGENCIES**

**Ref. No. 1226-P**

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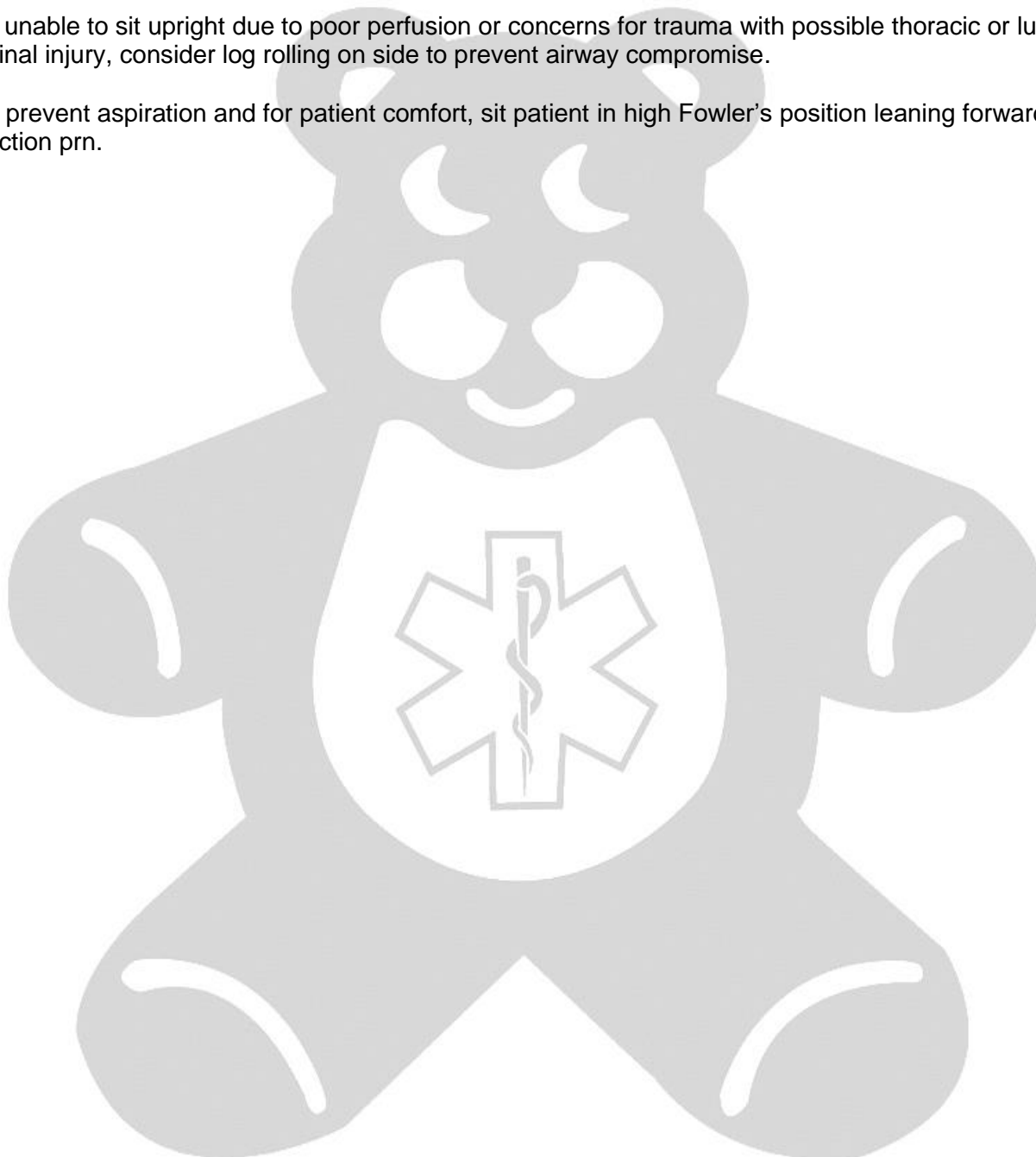
1. Assess airway and initiate basic and/or advanced airway maneuvers prn ([MCG 1302](#))
2. Administer **Oxygen** prn ([MCG 1302](#))
3. Assess for signs of trauma  
If traumatic injury suspected, treat in conjunction with [TP 1244-P, Traumatic Injury](#)
4. Control bleeding with direct pressure ❶
5. For epistaxis:  
Control bleeding by pinching nose just distal to nasal bone with head in neutral position and patient sitting forward ❷  
Document Provider Impression - [Epistaxis](#)
6. For tooth avulsion:  
Handle it by the enamel (crown) and do not touch the root  
Place in container with **Normal Saline**
7. For complaints of throat irritation and/or foreign body sensation:  
Assess for airway obstruction, if present treat per [TP 1234, Airway Obstruction](#)  
For throat complaints without airway obstruction, document Provider Impression – [ENT/Dental Emergencies](#)
8. Establish vascular access prn ([MCG 1375](#))
9. For pain management: refer to [MCG 1345, Pain Management](#)  
Dose per [MCG 1309](#)
10. For nausea or vomiting in patients  $\geq 4$  years old:  
**Ondansetron 4mg ODT**





**SPECIAL CONSIDERATIONS**

- ❶ In unable to sit upright due to poor perfusion or concerns for trauma with possible thoracic or lumbar spinal injury, consider log rolling on side to prevent airway compromise.
- ❷ To prevent aspiration and for patient comfort, sit patient in high Fowler's position leaning forward and suction prn.







**Treatment Protocol: EYE PROBLEM**

**Ref. No. 1228-P**

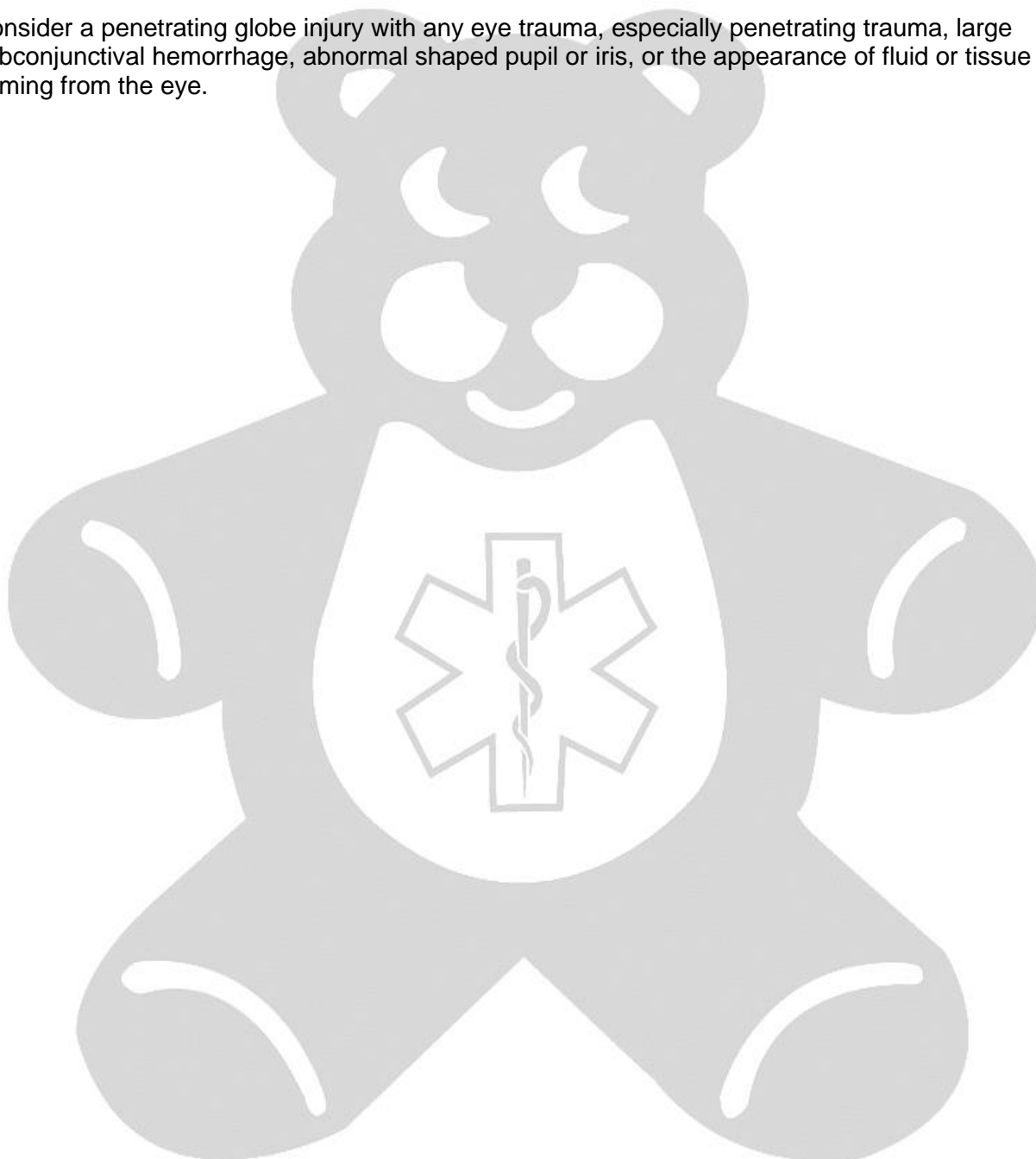
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1. Assess airway and initiate basic and/or advanced airway maneuvers prn ([MCG 1302](#))
2. Assess for additional signs of trauma  
If traumatic injury suspected, treat in conjunction with [TP 1244-P, Traumatic Injury](#)
3. If penetrating globe injury present/suspected, shield the eye and position patient at 45 degrees ①  
Do not put any pressure on the eye
4. Do not remove any impaled foreign bodies from eye; secure them in place
5. If contacts lenses are present and the patient is unable to remove them, leave in place
6. Establish vascular access prn ([MCG 1375](#))
7. Burns to eye:  
Chemical Burn – Irrigate with **Normal Saline 1L**  
Thermal Burn – Cover with dry dressing  
Treat in conjunction with [TP 1220-P, Burns](#)
8. For eye pain: refer to [MCG 1345, Pain Management](#)  
Dose per [MCG 1309](#)
9. For nausea or vomiting in patients  $\geq 4$  years old:  
**Ondansetron 4mg ODT**



**SPECIAL CONSIDERATIONS**

- 1 Consider a penetrating globe injury with any eye trauma, especially penetrating trauma, large subconjunctival hemorrhage, abnormal shaped pupil or iris, or the appearance of fluid or tissue coming from the eye.





**Treatment Protocol: ALTERED LEVEL OF CONSCIOUSNESS (ALOC)**

**Ref. No. 1229-P**

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**Base Hospital Contact: Required for persistent ALOC of unclear etiology ① ②**

1. Assess airway and initiate basic and/or advanced airway maneuvers prn ([MCG 1302](#))
2. Administer **Oxygen** prn ([MCG 1302](#))
3. Initiate cardiac monitoring ([MCG 1308](#))  
Perform 12-lead ECG if cardiac dysrhythmia detected and treat in conjunction with [TP 1212-P, Cardiac Dysrhythmia - Bradycardia](#) or [TP 1213-P, Cardiac Dysrhythmia - Tachycardia](#)
4. Establish vascular access ([MCG 1375](#))
5. Check blood glucose  
If < 60mg/dL or > 250mg/dL, treat in conjunction with [TP 1203-P, Diabetic Emergencies](#)
6. For poor perfusion ([MCG 1355](#)):  
**Normal Saline 20mL/kg IV/IO rapid infusion** per [MCG 1309](#)  
For patients with persistent poor perfusion, treat in conjunction with  
[TP 1207-P, Shock/Hypotension](#)
7. Assess for signs of trauma  
If traumatic injury suspected, treat in conjunction with [TP 1244-P, Traumatic Injury](#)
8. Perform neurological exam  
If stroke or stroke mimic suspected **CONTACT BASE** and transport to PMC
9. For suspected overdose or alcohol intoxication, treat in conjunction with  
[TP 1241-P, Overdose/Poisoning/Ingestion](#) ③
10. For suspected carbon monoxide exposure, treat in conjunction with  
[TP 1238-P, Carbon Monoxide Exposure](#)
11. **CONTACT BASE** if the etiology of ALOC remains unclear



**SPECIAL CONSIDERATIONS**

- ❶ Once the cause for ALOC is determined, switch to the more specific protocol. Consider the following differential using the mnemonic AEIOU-TIPS:
  - A** – Alcohol, abuse, atypical migraine
  - E** – Epilepsy, electrolytes
  - I** – Insulin (hypoglycemia)
  - O** – Oxygen, overdose
  - U** – Uremia (kidney failure)
  - T** – Trauma, tumor
  - I** – Infection
  - P** – Psych, poisoning
  - S** – Seizure, Subarachnoid hemorrhage, Sepsis
- ❷ EMS Personnel are mandated reporters of child abuse and neglect, and a report should be made when suspected as per [Ref. 822](#). Communicate suspicion for child abuse and/or neglect to accepting ED staff when home suggests children could be at risk for harm (e.g., unkempt home, evidence of drug or alcohol abuse, unsafe living conditions, known or suspected domestic violence), when the history does not match with the severity of physical findings (e.g., child posturing after a roll off the couch), when patterned injury or burns or noted (e.g., circular burns as from a cigarette, whip marks on the skin, burns of both hands or feet), or when child reports physical or sexual abuse. Children < 3 years of age and those with developmental delay are at increased risk of abuse. This must also be accompanied by notification to the Department of Children and Family Services (DCFS).
- ❸ Consider narcotic overdose for patients with hypoventilation (bradypnea), and pinpoint pupils, drug paraphernalia, or strong suspicion of narcotic use.

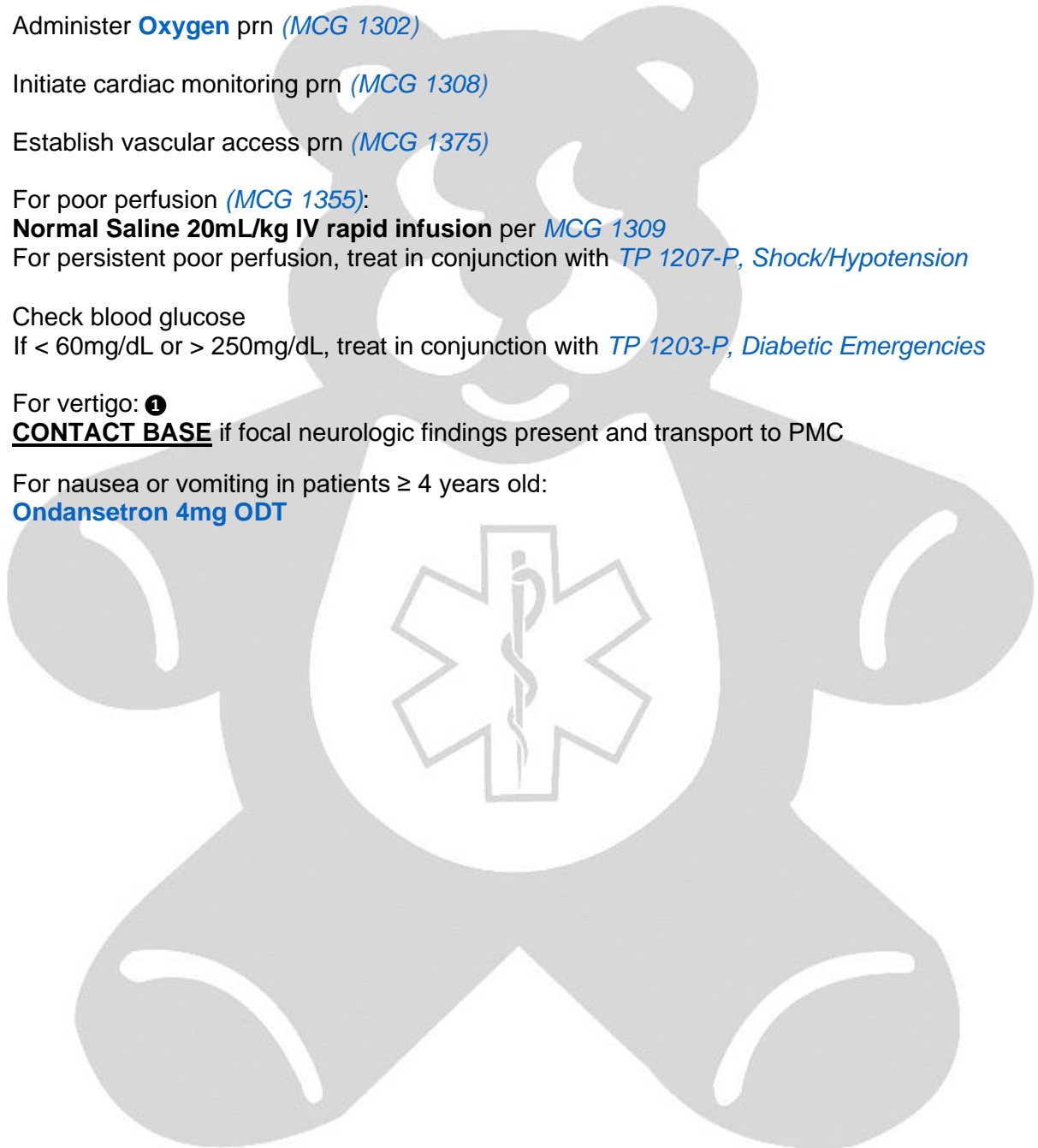


**Treatment Protocol: DIZZINESS / VERTIGO**

**Ref. No. 1230-P**

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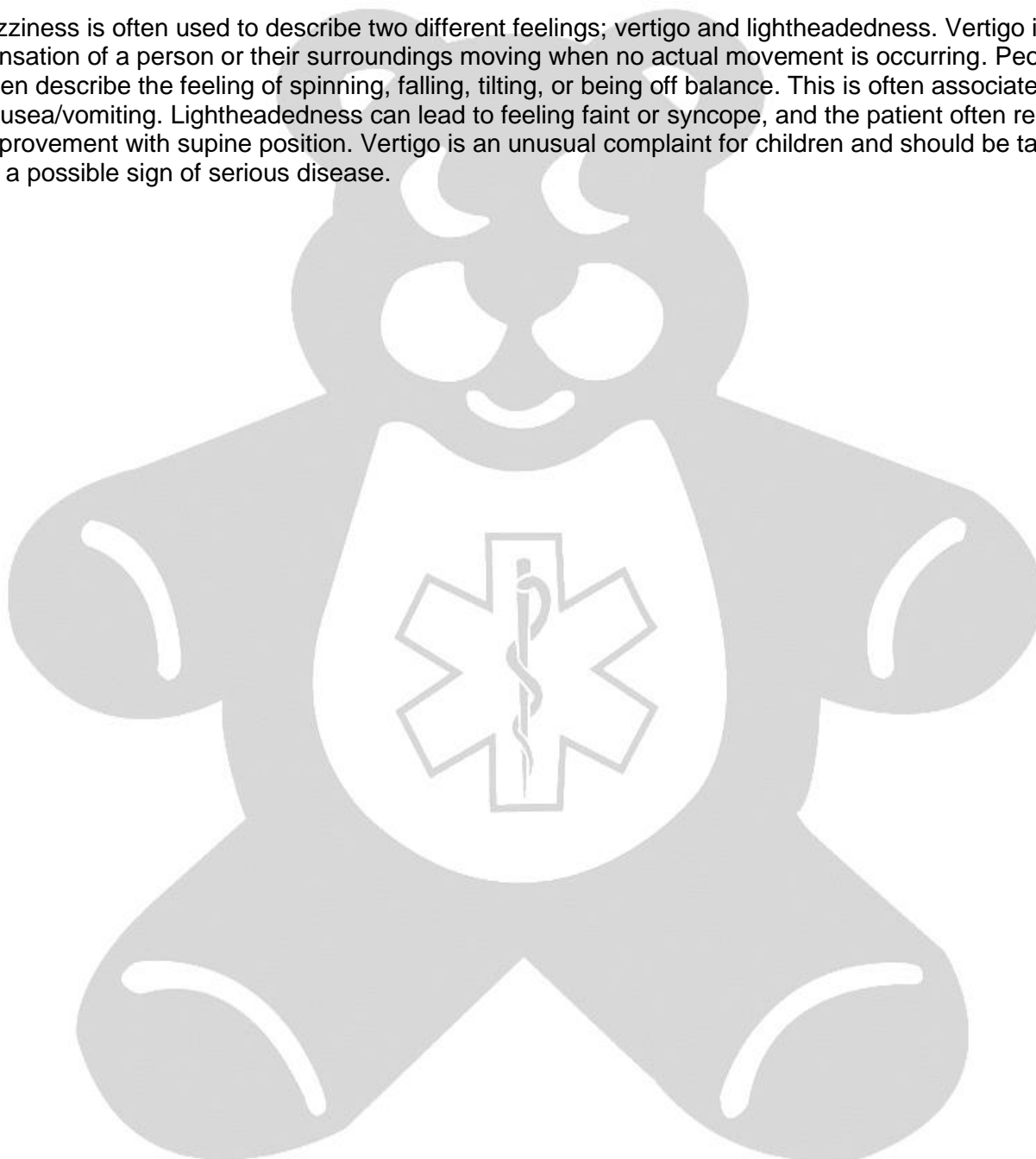
1. Assess airway and initiate basic and/or advanced airway maneuvers prn ([MCG 1302](#))
2. Administer **Oxygen** prn ([MCG 1302](#))
3. Initiate cardiac monitoring prn ([MCG 1308](#))
4. Establish vascular access prn ([MCG 1375](#))
5. For poor perfusion ([MCG 1355](#)):  
**Normal Saline 20mL/kg IV rapid infusion** per [MCG 1309](#)  
For persistent poor perfusion, treat in conjunction with [TP 1207-P, Shock/Hypotension](#)
6. Check blood glucose  
If < 60mg/dL or > 250mg/dL, treat in conjunction with [TP 1203-P, Diabetic Emergencies](#)
7. For vertigo: ❶  
**CONTACT BASE** if focal neurologic findings present and transport to PMC
8. For nausea or vomiting in patients  $\geq 4$  years old:  
**Ondansetron 4mg ODT**





**SPECIAL CONSIDERATIONS**

- ① Dizziness is often used to describe two different feelings; vertigo and lightheadedness. Vertigo is the sensation of a person or their surroundings moving when no actual movement is occurring. People often describe the feeling of spinning, falling, tilting, or being off balance. This is often associated with nausea/vomiting. Lightheadedness can lead to feeling faint or syncope, and the patient often reports improvement with supine position. Vertigo is an unusual complaint for children and should be taken as a possible sign of serious disease.





**Treatment Protocol: SEIZURE**

**Ref. No. 1231-P**

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**Base Hospital Contact: Required for status epilepticus or pregnant patients**

1. Assess airway and initiate basic and/or advanced airway maneuvers prn ([MCG 1302](#)) ❶
2. Administer **Oxygen** prn ([MCG 1302](#))
3. Assess for signs of trauma  
If traumatic injury suspected, treat in conjunction with [TP 1244-P, Traumatic Injury](#)
4. Initiate cardiac monitoring prn ([MCG 1308](#))
5. If seizure stops spontaneously prior to EMS arrival and no seizure witnessed by EMS:  
Document Provider Impression – [Seizure - Post](#)
6. For active seizure witnessed by EMS: ❷ ❸

**0-16 months (Gray, Pink, Red)**

**Midazolam (5mg/mL) 0.2mg/kg IM/IN**, dose per [MCG 1309](#)

Repeat x1 in 2 min prn, up to 2 doses prior to Base contact

**17 months – 5 years (Purple, Yellow, White if age unknown)**

**Midazolam (5mg/mL) 2.5 mg or 0.5mL IM/IN**

Repeat x1 in 2 min prn, up to 2 doses prior to Base contact

**6-11 Years (Blue, Orange, Green if age unknown)**

**Midazolam (5mg/mL) 5mg or 1mL IM/IN**

Repeat x1 in 2 min prn, up to 2 doses prior to Base contact

**≥12 years (Longer than the length-based tape if age unknown)**

**Midazolam (5mg/mL) 10 mg or 2mL IM/IN**

Single dose prior to Base contact

**CONTACT BASE** for persistent seizure and for additional medication orders: ❹

May repeat **Midazolam** as above, maximum total of 3 doses or 20 milligrams, whichever is less.

Document Provider Impression – [Seizure - Active](#), even if seizure spontaneously resolves

7. Establish vascular access prn ([MCG 1375](#))
8. For persistent seizure or persistent ALOC:  
Check blood glucose  
If < 60mg/dL or > 250mg/dL, treat in conjunction with [TP 1203-P, Diabetic Emergencies](#)
9. Complete Paramedic Self Report, <https://redcap.link/lacpedi-dose>



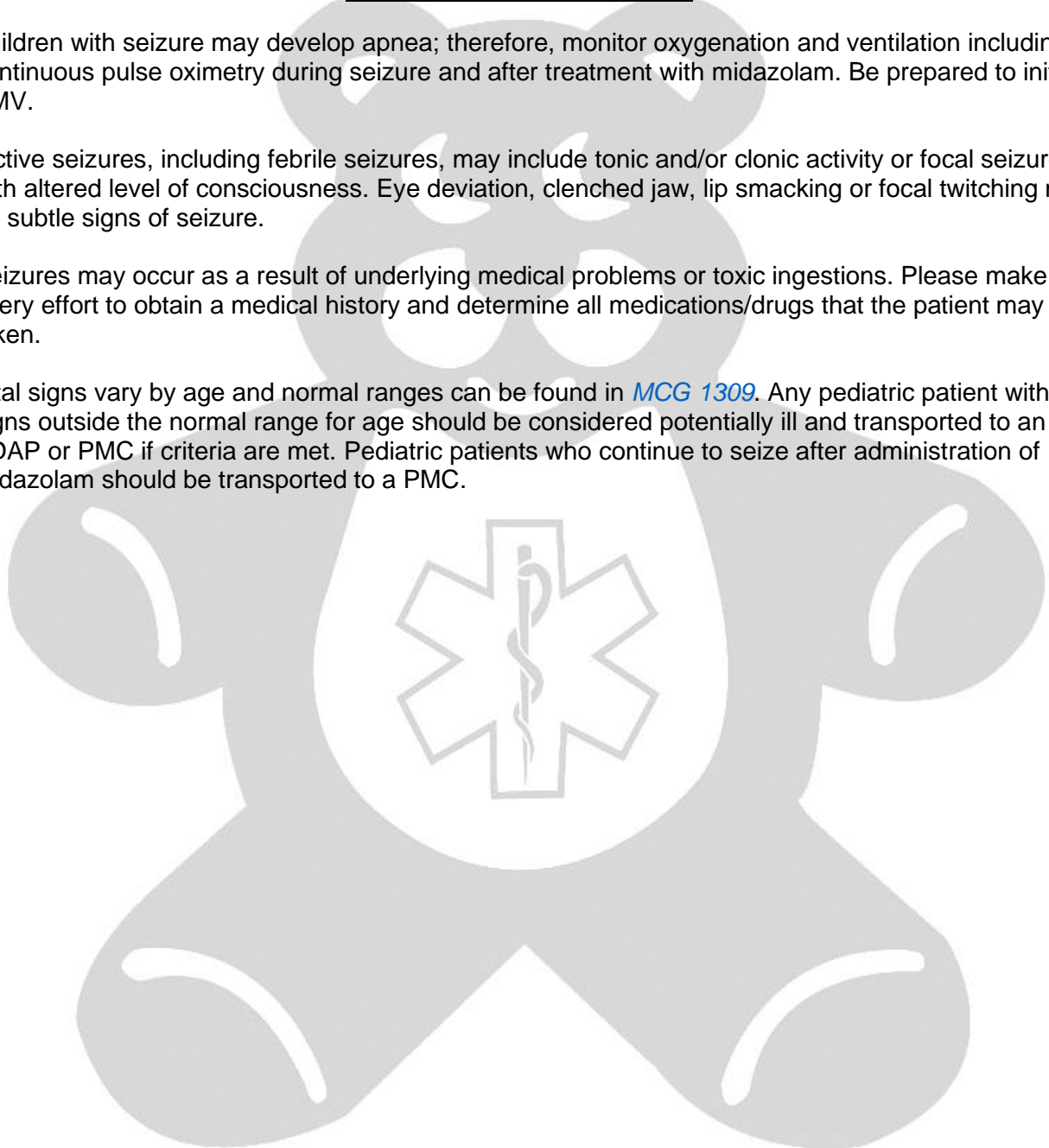




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**SPECIAL CONSIDERATIONS**

- ❶ Children with seizure may develop apnea; therefore, monitor oxygenation and ventilation including continuous pulse oximetry during seizure and after treatment with midazolam. Be prepared to initiate BMV.
- ❷ Active seizures, including febrile seizures, may include tonic and/or clonic activity or focal seizure with altered level of consciousness. Eye deviation, clenched jaw, lip smacking or focal twitching may be subtle signs of seizure.
- ❸ Seizures may occur as a result of underlying medical problems or toxic ingestions. Please make every effort to obtain a medical history and determine all medications/drugs that the patient may have taken.
- ❹ Vital signs vary by age and normal ranges can be found in [MCG 1309](#). Any pediatric patient with vital signs outside the normal range for age should be considered potentially ill and transported to an EDAP or PMC if criteria are met. Pediatric patients who continue to seize after administration of midazolam should be transported to a PMC.







**Treatment Protocol: STROKE / CVA / TIA**

**Ref. No. 1232-P**

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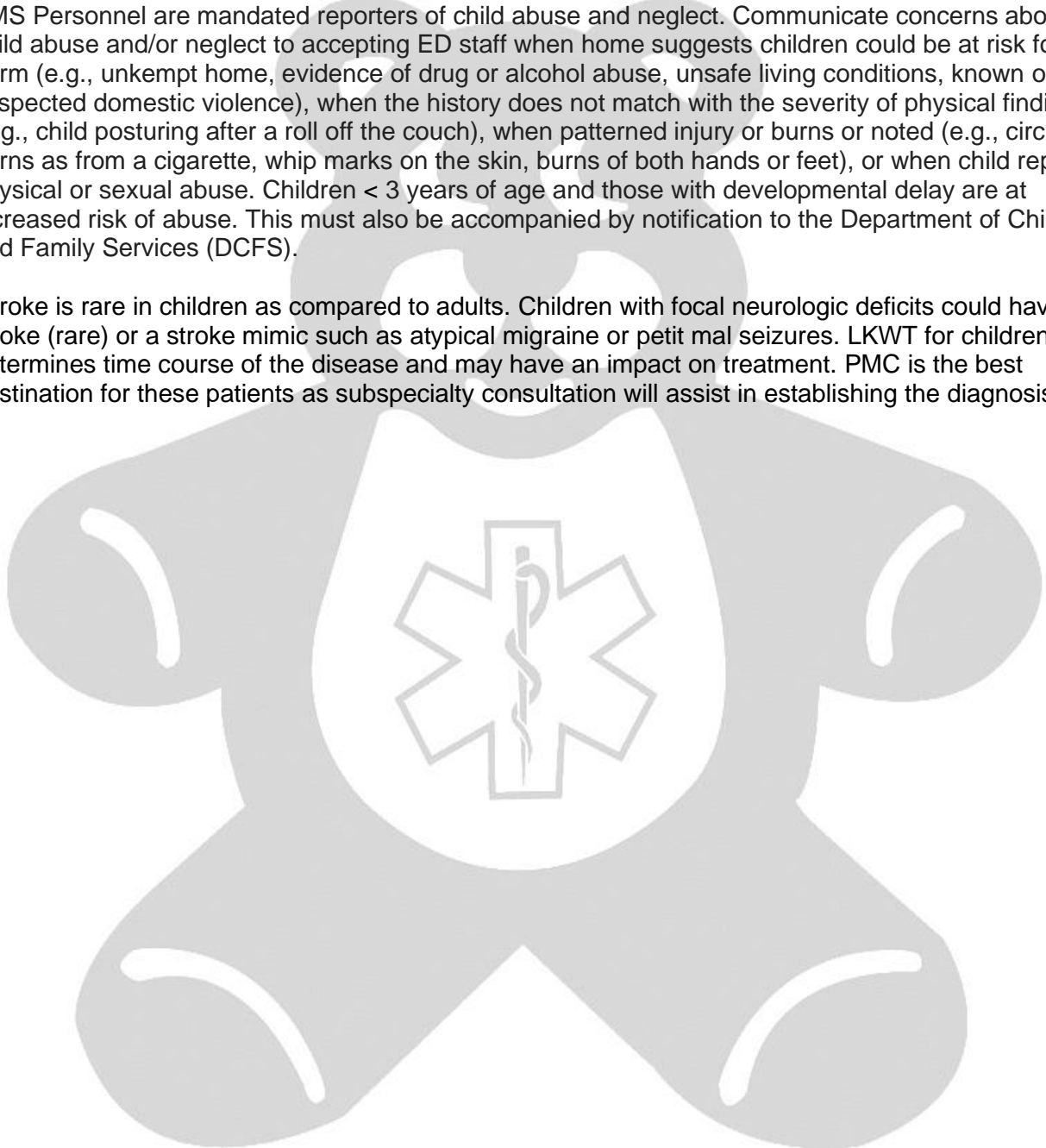
**Base Hospital Contact: Required prior to transport for all patients with suspected Stroke or TIA**

1. Assess airway and initiate basic and/or advanced airway maneuvers prn ([MCG 1302](#))
2. Administer **Oxygen** prn ([MCG 1302](#))
3. Advanced airway prn ([MCG 1302](#))
4. Initiate cardiac monitoring ([MCG 1308](#))  
Perform 12-lead ECG if dysrhythmia suspected prn
5. Establish vascular access prn ([MCG 1375](#))
6. Check blood glucose  
If < 60mg/dL or > 250mg/dL, treat in conjunction with [TP 1203-P, Diabetic Emergencies](#)
7. Assess for signs of trauma ❶  
If traumatic injury suspected, treat in conjunction with [TP 1244-P, Traumatic Injury](#)
8. Document focal neurologic deficits, and date and time of Last Known Well Time (LKWT) ❷
9. **CONTACT BASE** and transport to PMC



**SPECIAL CONSIDERATIONS**

- ① EMS Personnel are mandated reporters of child abuse and neglect. Communicate concerns about child abuse and/or neglect to accepting ED staff when home suggests children could be at risk for harm (e.g., unkempt home, evidence of drug or alcohol abuse, unsafe living conditions, known or suspected domestic violence), when the history does not match with the severity of physical findings (e.g., child posturing after a roll off the couch), when patterned injury or burns are noted (e.g., circular burns as from a cigarette, whip marks on the skin, burns of both hands or feet), or when child reports physical or sexual abuse. Children < 3 years of age and those with developmental delay are at increased risk of abuse. This must also be accompanied by notification to the Department of Children and Family Services (DCFS).
- ② Stroke is rare in children as compared to adults. Children with focal neurologic deficits could have a stroke (rare) or a stroke mimic such as atypical migraine or petit mal seizures. LKWT for children determines time course of the disease and may have an impact on treatment. PMC is the best destination for these patients as subspecialty consultation will assist in establishing the diagnosis.





**Treatment Protocol: SYNCOPE / NEAR SYNCOPE**

**Ref. No. 1233-P**

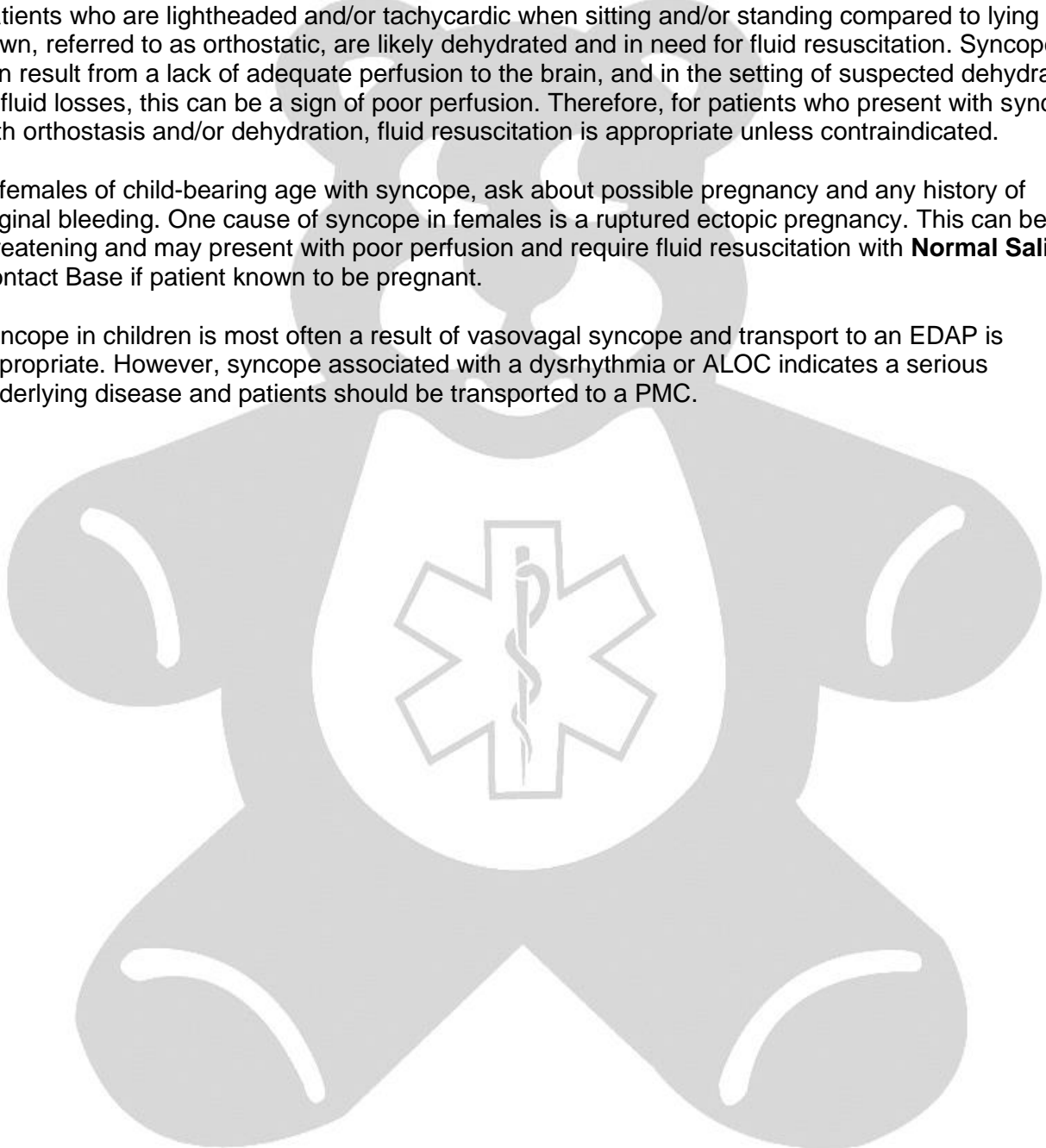
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1. Assess airway and initiate basic and/or advanced airway maneuvers prn ([MCG 1302](#))
2. Administer **Oxygen** prn ([MCG 1302](#))
3. Establish vascular access prn ([MCG 1375](#))
4. For orthostasis (in older children), signs of dehydration or fluid losses, or for poor perfusion ([MCG 1355](#)):  
**Normal Saline 20mL/kg IV rapid infusion** per [MCG 1309](#)  
For persistent poor perfusion, treat in conjunction with [TP 1207-P, Shock/Hypotension](#) ① ②
5. Initiate cardiac monitoring ([MCG 1308](#))  
Perform 12-Lead ECG if dysrhythmia suspected  
If cardiac dysrhythmia is present, treat per [TP 1212-P, Cardiac Dysrhythmia-Bradycardia](#) or [TP 1213-P, Cardiac-Dysrhythmia-Tachycardia](#)
6. Assess for signs of trauma  
If traumatic injury suspected, treat in conjunction with [TP 1244-P, Traumatic Injury](#)
7. For persistent ALOC, treat in conjunction with [TP 1229-P, ALOC](#) ③



**SPECIAL CONSIDERATIONS**

- ❶ Patients who are lightheaded and/or tachycardic when sitting and/or standing compared to lying down, referred to as orthostatic, are likely dehydrated and in need for fluid resuscitation. Syncope can result from a lack of adequate perfusion to the brain, and in the setting of suspected dehydration or fluid losses, this can be a sign of poor perfusion. Therefore, for patients who present with syncope with orthostasis and/or dehydration, fluid resuscitation is appropriate unless contraindicated.
- ❷ In females of child-bearing age with syncope, ask about possible pregnancy and any history of vaginal bleeding. One cause of syncope in females is a ruptured ectopic pregnancy. This can be life threatening and may present with poor perfusion and require fluid resuscitation with **Normal Saline**. Contact Base if patient known to be pregnant.
- ❸ Syncope in children is most often a result of vasovagal syncope and transport to an EDAP is appropriate. However, syncope associated with a dysrhythmia or ALOC indicates a serious underlying disease and patients should be transported to a PMC.





**Treatment Protocol: AIRWAY OBSTRUCTION**

**Ref. No. 1234-P**

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**Base Hospital Contact: Required for patients with severe respiratory distress and/or respiratory arrest.**

1. Assess airway and initiate basic and/or advanced airway maneuvers prn ([MCG 1302](#)) ❶ ❷
2. Administer **Oxygen** prn ([MCG 1302](#))  
**High flow Oxygen 15L/min** for all patients with impending respiratory arrest/failure ❸
3. For airway obstruction due to foreign body:  
If patient unable to speak but is conscious, perform 5 abdominal thrusts or, if <1 year, alternate 5 back blows and 5 chest thrusts  
If patient becomes unconscious lower to ground and begin chest compressions  
  
If patient is unconscious, initiate CPR x 2 min  
Perform direct laryngoscopy to visualize potential obstruction when indicated  
Remove visible foreign body with Magill forceps
4. If patient has an Unmanageable Airway ([MCG 1302](#)):  
Initiate immediate transport to EDAP and **CONTACT BASE** en route
5. Advanced airway prn for patients of appropriate age and size ([MCG 1302](#))
6. Initiate cardiac monitoring ([MCG 1308](#))
7. If patient is conscious and spontaneous ventilation is adequate:  
Monitor in position of comfort
8. Consider specific presentation:  
For suspected anaphylaxis treat per [TP 1219-P, Allergy](#)  
  
For stridor concerning for croup or tracheitis:  
< 1 year old: **Epinephrine (1mg/mL) 2.5mL via neb**, dose per [MCG 1309](#) ❸  
≥ 1 year of age: **Epinephrine (1mg/mL) 5mL via neb**, dose per [MCG 1309](#) ❸  
Repeat x1 in 10 min prn, maximum 2 total doses prior to Base contact  
Prepare to manage airway if patient's condition deteriorates  
  
For visible airway/tongue swelling:  
**Epinephrine (1mg/mL) 0.01mg/kg IM** dose per [MCG 1309](#)  
Repeat every 10 min prn x2, maximum 3 total doses prior to Base contact  
  
For patients with a tracheostomy and suspected obstruction: ❹  
Attempt suctioning



**Treatment Protocol: AIRWAY OBSTRUCTION**

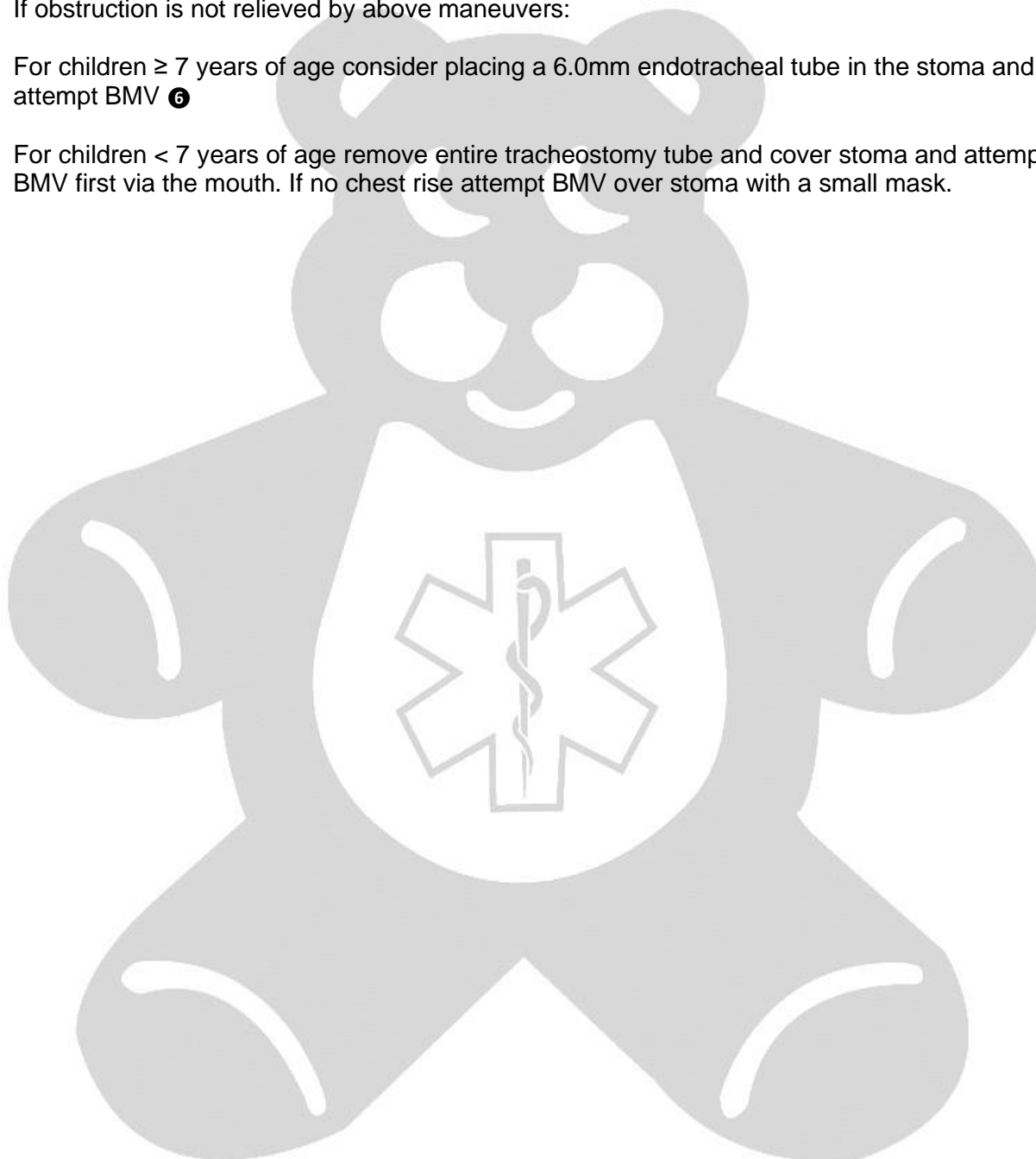
**Ref. No. 1234-P**

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Remove and clean inner cannula with saline; replace if positive-pressure ventilation required **5**  
If obstruction is not relieved by above maneuvers:

For children  $\geq 7$  years of age consider placing a 6.0mm endotracheal tube in the stoma and attempt BMV **6**

For children  $< 7$  years of age remove entire tracheostomy tube and cover stoma and attempt BMV first via the mouth. If no chest rise attempt BMV over stoma with a small mask.





**SPECIAL CONSIDERATIONS**

- ❶ In evaluation of patient with suspected airway obstruction, assessment of the airway should include the tongue and posterior oropharynx, including uvula and tonsillar pillars.
- ❷ Supraglottic airway placement is contraindicated for patients with upper airway obstruction>
- ❸ Consider blow-by to avoid agitation in pediatric patients if a mask cannot be tolerated (e.g., infants and toddlers).
- ❹ Common tracheostomy emergencies include obstruction of the tracheostomy tube and bleeding. There are different types of tracheostomy tubes, some with an inner cannula and/or obturator. The obturator obstructs airflow and is usually only used during insertion. The inner cannula allows for connection to a ventilator or bag mask for positive pressure ventilation. Tracheostomy tubes may be cuffed (balloon inflated in the trachea as indicated by a side port) or uncuffed. If the tracheostomy does not have a cuff, the airway is not protected against aspiration and air can leak out through the mouth during positive-pressure ventilation. If respiratory failure occurs in a patient with an uncuffed tracheostomy tube, it should be replaced with a cuffed endotracheal tube (if the appropriate size is available) if feasible in order to facilitate positive-pressure ventilation. For bleeding, direct pressure should be applied and suctioning as needed to reduce aspiration of blood.
- ❺ The inner cannula is required to attach a ventilator or bag mask to a tracheostomy for positive-pressure ventilation. It may become obstructed with secretions; remove, clean with saline, and replace once obstruction is relieved. If it cannot be replaced, cover the stoma with gauze and begin BMV via the mouth. If no chest rise, place a small mask over the stoma and begin stoma-mask ventilation.
- ❻ Removal and reinsertion of the tracheostomy tube is contraindicated if the tracheostomy is < 1 week old because the stoma has not fully formed and a false tract may be created. Once the stoma has matured, a tracheostomy can be safely removed and replaced when necessary. If a flexible intubation guide (e.g., Bougie) can be inserted, it may be used to guide the removal and reinsertion of the tracheostomy or endotracheal tube.





**Treatment Protocol: Brief Resolved Unexplained Event (BRUE)**

**Ref. No. 1235-P**

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**Base Hospital Contact: Required prior to transport for all patients with BRUE ① ② ③**

1. Assess patient's airway and initiate basic and/or airway management prn ([MCG 1302](#)) ④
2. Administer **Oxygen** prn ([MCG 1302](#))
3. For suspected foreign body aspiration treat per [TP 1234-P, Airway Obstruction](#)
4. Initiate cardiac monitoring ([MCG 1308](#))  
Perform 12-lead ECG if dysrhythmia suspected  
For bradycardia treat per [TP 1212-P, Cardiac Dysrhythmia - Bradycardia](#)
5. Establish vascular access prn ([MCG 1375](#))
6. For poor perfusion ([MCG 1355](#))  
**Normal Saline 20mL/kg IV/IO rapid infusion** ([MCG 1309](#)) ⑤  
For persistent poor perfusion, treat in conjunction with [TP 1207-P, Shock/Hypotension](#)
7. For persistent ALOC – treat per [TP 1229-P, ALOC](#)





**SPECIAL CONSIDERATIONS**

- ❶ Obtain thorough history or physical examination that one or more of the following occurred and is resolved: cyanosis or pallor, absent, decreased, or irregular breathing, marked change in tone (hyper- or hypotonia), or altered level of responsiveness – document Provider Impression *BRUE*
- ❷ Patients with a brief resolved unexplained event or a BRUE require Base Contact and transport to a PMC. For patients with ongoing signs of serious illness Base Contact should be made for discussion on appropriate destination. Vital signs vary by age and normal ranges can be found in [MCG 1309](#). Any pediatric patient with vital signs outside the normal range for age should be considered potentially ill and transported to an EDAP or PMC if criteria are met.
- ❸ EMS Personnel are mandated reporters of child abuse and neglect, and a report should be made when suspected as per [Ref. 822](#). Communicate suspicion for child abuse and/or neglect to accepting ED staff when home suggests children could be at risk for harm (e.g., unkempt home, evidence of drug or alcohol abuse, unsafe living conditions, known or suspected domestic violence), when the history does not match with the severity of physical findings (e.g., child posturing after a roll off the couch), when patterned injury or burns are noted (e.g., circular burns as from a cigarette, whip marks on the skin, burns of both hands or feet), or when child reports physical or sexual abuse. Children < 3 years of age and those with developmental delay are at increased risk of abuse. This must also be accompanied by notification to the Department of Children and Family Services (DCFS).
- ❹ Support respiration prn with BMV using “squeeze-release-release” technique; hyperventilation has negative effects on coronary and cerebral perfusion and should be avoided.
- ❺ In infants < 1 month of age with increasing respiratory distress after fluid resuscitation, stop infusion as it may be a result of volume overload and contact Base for medical direction.



**Treatment Protocol: INHALATION INJURY**

**Ref. No. 1236-P**

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**Base Hospital Contact: Required for severe respiratory distress unresponsive or not amenable to CPAP**

1. Assess scene for safety
2. Use appropriate PPE
3. Remove from environment if potential for ongoing exposure
4. Assess airway and initiate basic and/or advanced airway maneuvers prn ([MCG 1302](#))
5. If patient awake and alert, place in position of comfort
6. Administer **Oxygen** prn ([MCG 1302](#))  
**High-flow Oxygen 15L/min** for all patients with smoke inhalation, carbon monoxide exposure, or severe respiratory distress due to airway injury, regardless of SpO<sub>2</sub> ①
7. Advanced airway prn ([MCG 1302](#))
8. If patient has an Unmanageable Airway ([MCG 1302](#))  
Initiate immediate transport to the EDAP and **CONTACT BASE**
9. Assess for signs of trauma  
If traumatic injury suspected, treat in conjunction with [TP 1244-P, Traumatic Injury](#)
10. For airway burns, treat in conjunction with [TP 1220-P, Burns](#)
11. For suspected carbon monoxide exposure, treat in conjunction with [TP 1238-P, Carbon Monoxide Poisoning](#)
12. For suspected exposure to hazardous materials, treat in conjunction with [TP 1240-P, HAZMAT](#)
13. For airway edema and/or stridor:  
< 1 year old: **Epinephrine (1mg/mL) 2.5mL via neb** per [MCG 1309](#) ①  
≥ 1 year of age: **Epinephrine (1mg/mL) 5mL via neb** per [MCG 1309](#) ①  
Repeat x1 in 10 min prn
14. For wheezing/bronchospasm (consider also for cough):  
< 4 years of age: **Albuterol 2.5mg (3mL) via neb** per [MCG 1309](#) ①  
≥ 4 years of age: **Albuterol 5mg (6mL) via neb** per [MCG 1309](#) ①  
Repeat x2 prn

**CONTACT BASE** for additional Albuterol after maximum dose administered

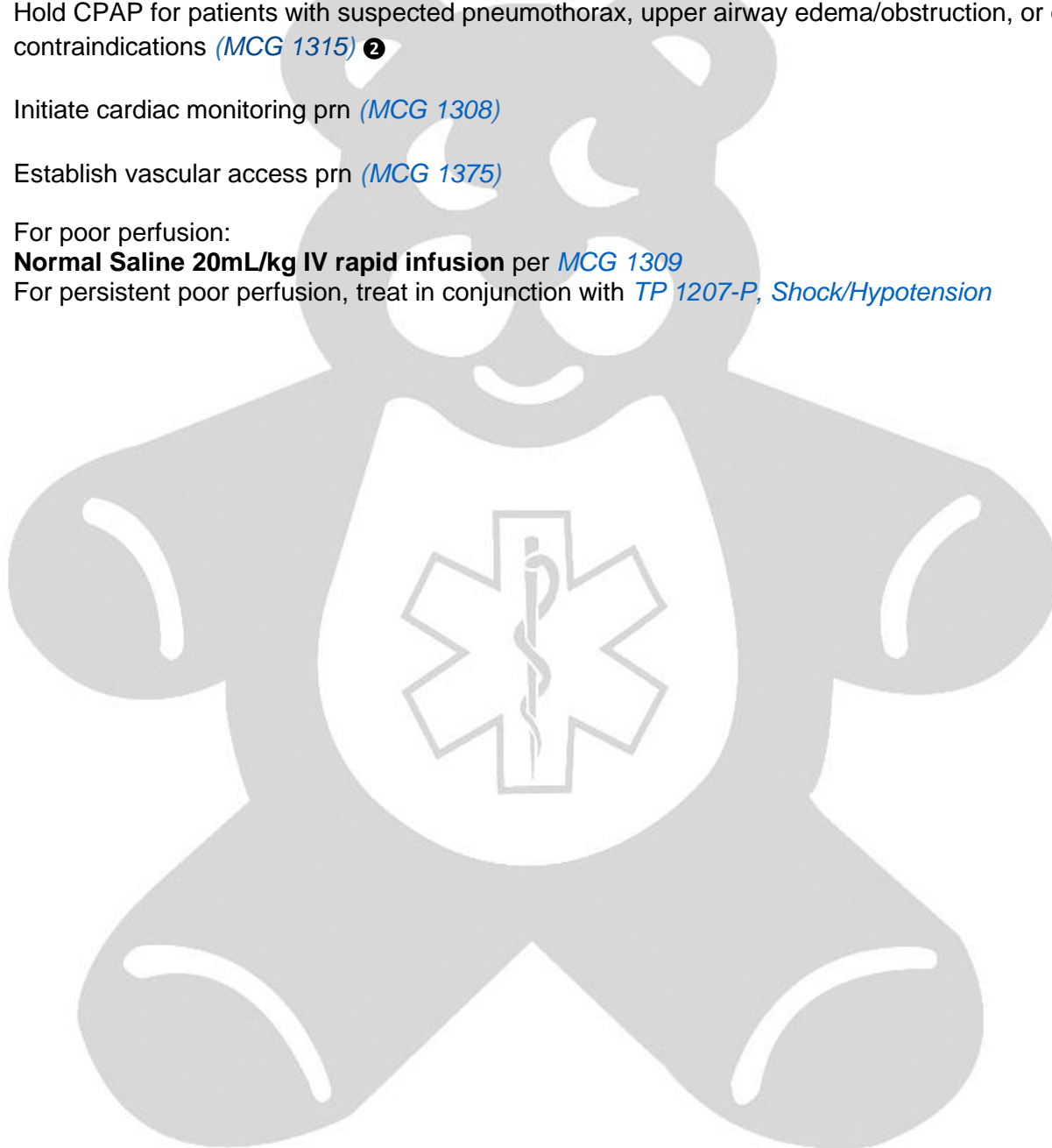


**Treatment Protocol: INHALATION INJURY**

**Ref. No. 1236-P**

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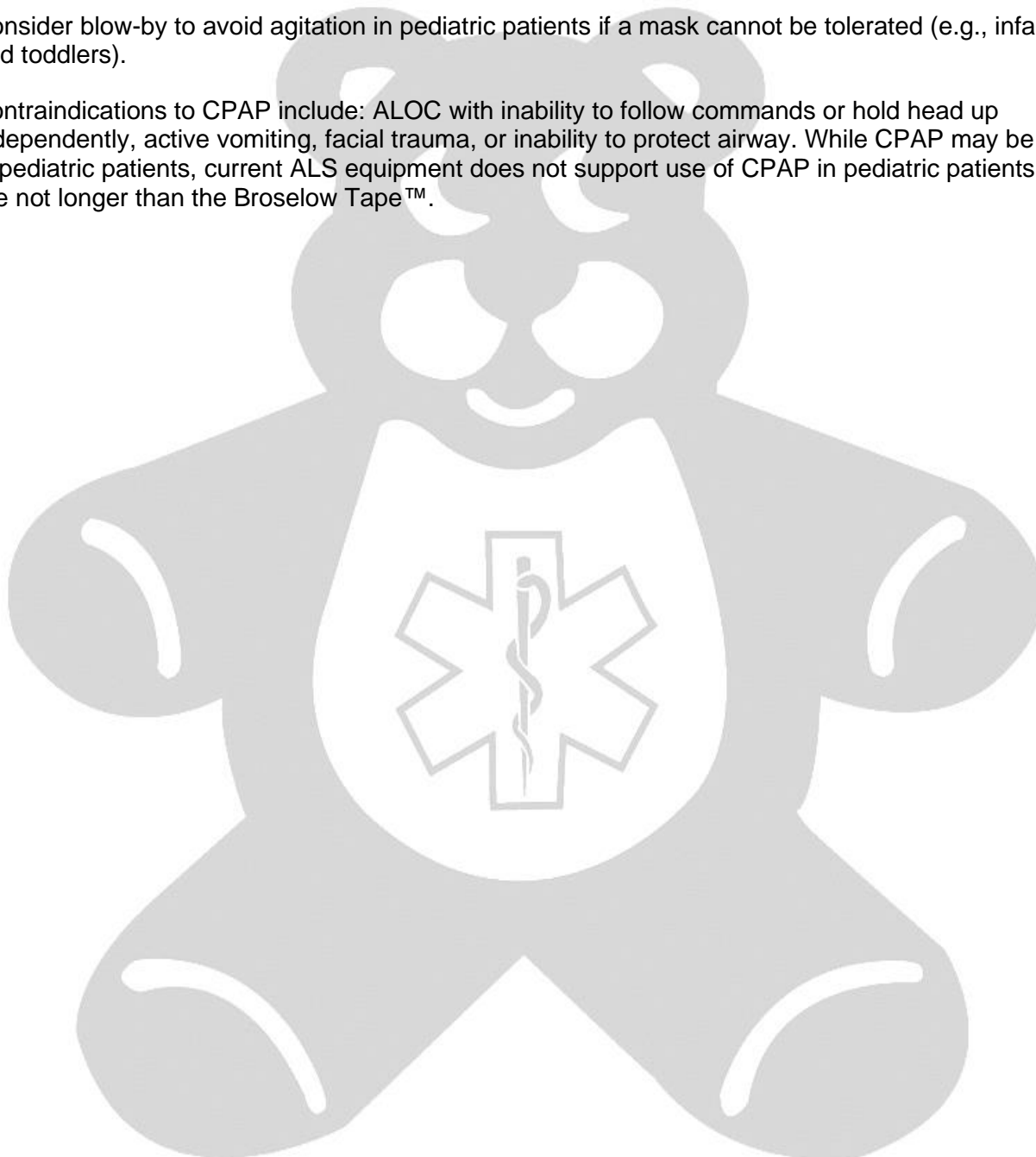
15. Initiate CPAP for patients with moderate or severe respiratory distress, size longer than the length-based resuscitation tape (e.g., Broselow Tape™), and SBP  $\geq$  90mmHg  
Hold CPAP for patients with suspected pneumothorax, upper airway edema/obstruction, or other contraindications ([MCG 1315](#)) 2
16. Initiate cardiac monitoring prn ([MCG 1308](#))
17. Establish vascular access prn ([MCG 1375](#))
18. For poor perfusion:  
**Normal Saline 20mL/kg IV rapid infusion** per [MCG 1309](#)  
For persistent poor perfusion, treat in conjunction with [TP 1207-P, Shock/Hypotension](#)





**SPECIAL CONSIDERATIONS**

- ❶ Consider blow-by to avoid agitation in pediatric patients if a mask cannot be tolerated (e.g., infants and toddlers).
- ❷ Contraindications to CPAP include: ALOC with inability to follow commands or hold head up independently, active vomiting, facial trauma, or inability to protect airway. While CPAP may be used in pediatric patients, current ALS equipment does not support use of CPAP in pediatric patients who are not longer than the Broselow Tape™.





**Treatment Protocol: RESPIRATORY DISTRESS**

**Ref. No. 1237-P**

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**Base Hospital Contact: Required for respiratory failure, severe respiratory distress or hypoxia and for patients < 1 year old with moderate respiratory distress**

1. Use appropriate PPE ❶
2. Assess airway and initiate basic and/or advanced airway maneuvers prn ([MCG 1302](#)) ❷ ❸ ❹
3. Maintain patient in position of comfort ❺
4. Administer **Oxygen** prn ([MCG 1302](#)) ❷  
**High flow Oxygen 15 L/min** for all patients with impending respiratory failure, suspected pneumothorax, inhalation injury, or carbon monoxide exposure  
Use **Oxygen** with caution in patients with known congenital heart disease
5. If patient with stridor or concern for airway obstruction, treat per [TP 1234-P, Airway Obstruction](#)
6. If allergic reaction suspected, treat per [TP 1219-P, Allergy](#)
7. Initiate cardiac monitoring prn ([MCG 1308](#))  
For suspected dysrhythmia, perform 12-lead ECG and **CONTACT BASE**  
For patients with dysrhythmias, treat per [TP 1212-P, Cardiac Dysrhythmia - Bradycardia](#) or [TP 1213-P, Cardiac Dysrhythmia - Tachycardia](#) ❻
8. For bronchospasm, wheezing or asthma exacerbation:  
< 4 years of age: **Albuterol 2.5mg (3mL) via neb or 2 puffs via MDI** per [MCG 1309](#) ❼  
≥ 4 years of age: **Albuterol 5mg (6mL) via neb or 4 puffs via MDI** per [MCG 1309](#) ❼ ❸  
May repeat x2 prn wheezing  
Document Provider Impression – *Respiratory Distress / Bronchospasm*
9. For deteriorating respiratory status despite albuterol:  
**Epinephrine (1mg/mL) 0.01mg/kg IM**, dose per [MCG 1309](#)  
Consider giving initially if wheezing with poor perfusion or severe respiratory distress ❾  
**CONTACT BASE** concurrent with **Epinephrine**
10. Establish vascular access prn ([MCG 1375](#))
11. Initiate CPAP for alert patients with moderate or severe respiratory distress with length greater than the length-based resuscitation tape (e.g., Broselow Tape™) and SBP ≥ 90mmHg  
Hold CPAP for patients with suspected pneumothorax, upper airway edema/obstruction, or other contraindications ([MCG 1315](#)) ❿
12. For poor perfusion ([MCG 1355](#)) :  
**Normal Saline 20mL/kg IV rapid infusion** per [MCG 1309](#)  
For patients with persistent poor perfusion, treat in conjunction with [TP 1207-P, Shock/Hypotension](#)

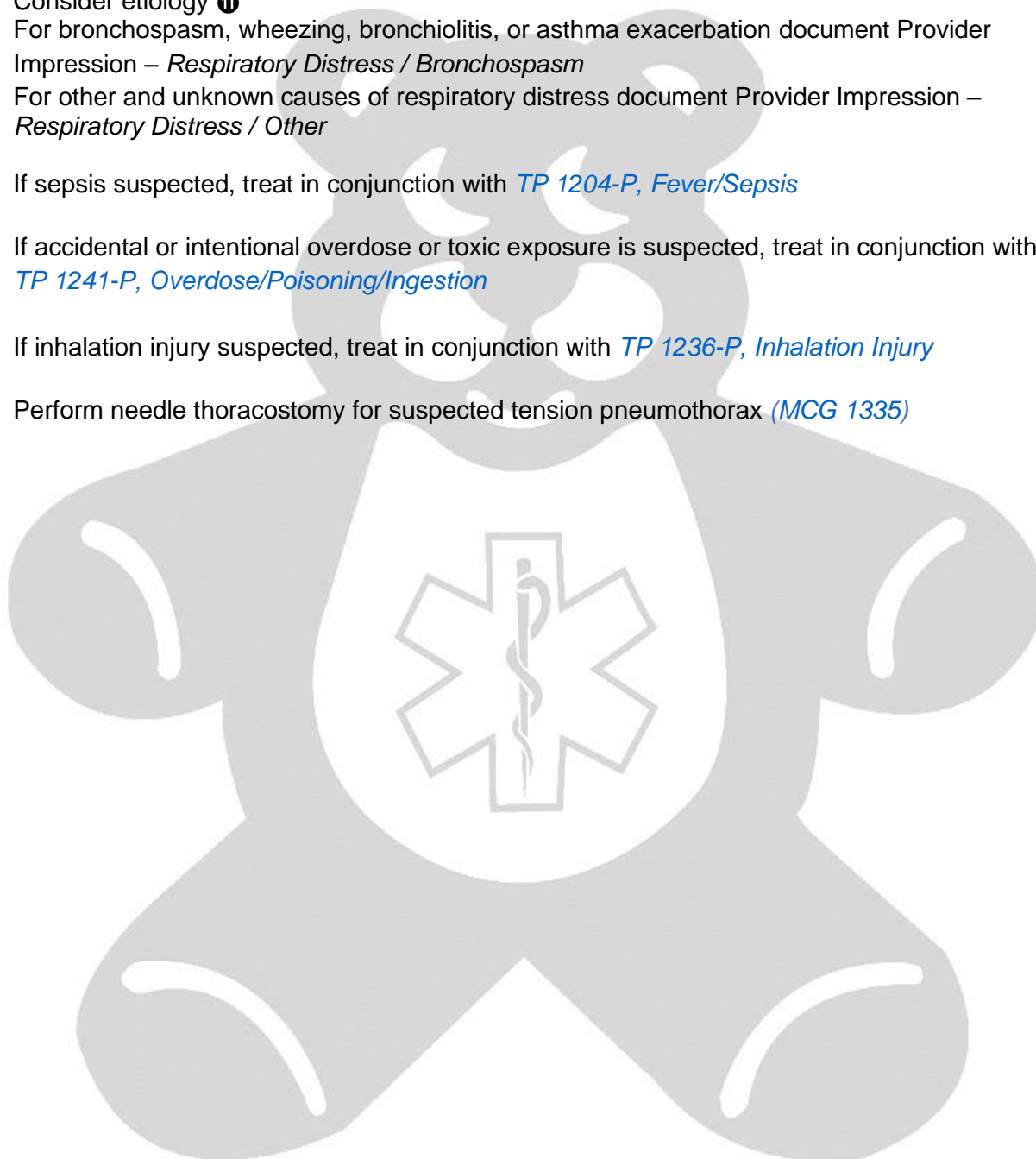


**Treatment Protocol: RESPIRATORY DISTRESS**

**Ref. No. 1237-P**

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13. Consider etiology ⑪  
For bronchospasm, wheezing, bronchiolitis, or asthma exacerbation document Provider Impression – *Respiratory Distress / Bronchospasm*  
For other and unknown causes of respiratory distress document Provider Impression – *Respiratory Distress / Other*
14. If sepsis suspected, treat in conjunction with [TP 1204-P, Fever/Sepsis](#)
15. If accidental or intentional overdose or toxic exposure is suspected, treat in conjunction with [TP 1241-P, Overdose/Poisoning/Ingestion](#)
16. If inhalation injury suspected, treat in conjunction with [TP 1236-P, Inhalation Injury](#)
17. Perform needle thoracostomy for suspected tension pneumothorax ([MCG 1335](#))







**SPECIAL CONSIDERATIONS**

- ❶ Consider wearing surgical mask when caring for patients with respiratory distress of unclear etiology, which may be infectious.
- ❷ Patients with cyanotic congenital heart disease may be expected to have a measured SpO<sub>2</sub> of 75-85%. Parents/caretakers may also know the patient's "normal" SpO<sub>2</sub> range. It is important to ask caretakers and consider this possibility, as administration of Oxygen in these patients will worsen respiratory status.
- ❸ Bag-mask ventilation (BMV) with a viral filter is the preferred method of airway management for pediatric patients. Initiate BMV to assess patient response. Effective BMV may improve the patient's respiratory status enough to restore adequate spontaneous respirations. Place advanced airway placement if BMV is ineffective or consider placement once assessment for rapidly reversible causes is complete as authorized per [MCG 1302](#); supraglottic airway (sizing per [MCG 1309](#)) is preferred unless contraindicated. Paramedics should use judgment based on patient characteristics, circumstances, and skill level when selecting the advanced airway modality for pediatric patients in whom multiple modalities are authorized.
- ❹ If positive pressure ventilation is performed at any time, document Provider Impression as *Respiratory Arrest / Respiratory Failure*.
- ❺ Fowler's or Semi-Fowler's positioning is likely to be most comfortable for awake patients with respiratory distress. Avoid agitating children with suspected partial foreign body obstruction and/or impending airway failure. Allow parents/caretakers to handle/facilitate patient if safe to do so.
- ❻ In pediatric patients with respiratory distress, bradycardia is likely to represent a pre-terminal event, ensure that oxygenation and ventilation is adequate ; bradycardic dysrhythmia is persistent despite adequate oxygenation and ventilation before moving to [TP 1212-P, Cardiac Dysrhythmia – Bradycardia](#). Respiratory rates vary by age and normal ranges can be found in [MCG 1309](#).
- ❼ Consider blow-by to avoid agitation in pediatric patients if a mask cannot be tolerated (e.g., infants and toddlers).
- ❽ Administration of albuterol via metered-dose inhaler (MDI) with spacer is considered equivalent to nebulized albuterol; a spacer is typically required for this route to be effective in novice users. MDIs are single use and should be left with the hospital staff upon handoff of the patient.
- ❾ Epinephrine may be administered prior to albuterol as initial drug therapy in patients with Respiratory Failure due to bronchospasm.
- ❿ Contraindications to CPAP include: ALOC with inability to follow commands or hold head up independently, active vomiting, facial trauma, or inability to protect airway. While CPAP may be used in pediatric patients, current ALS equipment does not support use of CPAP in pediatric patients who are not longer than the length-based resuscitation tape (e.g., Broselow Tape™).
- ⓫ Etiologies of respiratory distress in pediatrics are varied; etiologies may include the following:
  - Bronchospasm due to asthma, bronchiolitis, reactive airway disease or viral illness – document Provider Impression as *Respiratory Distress / Bronchospasm*

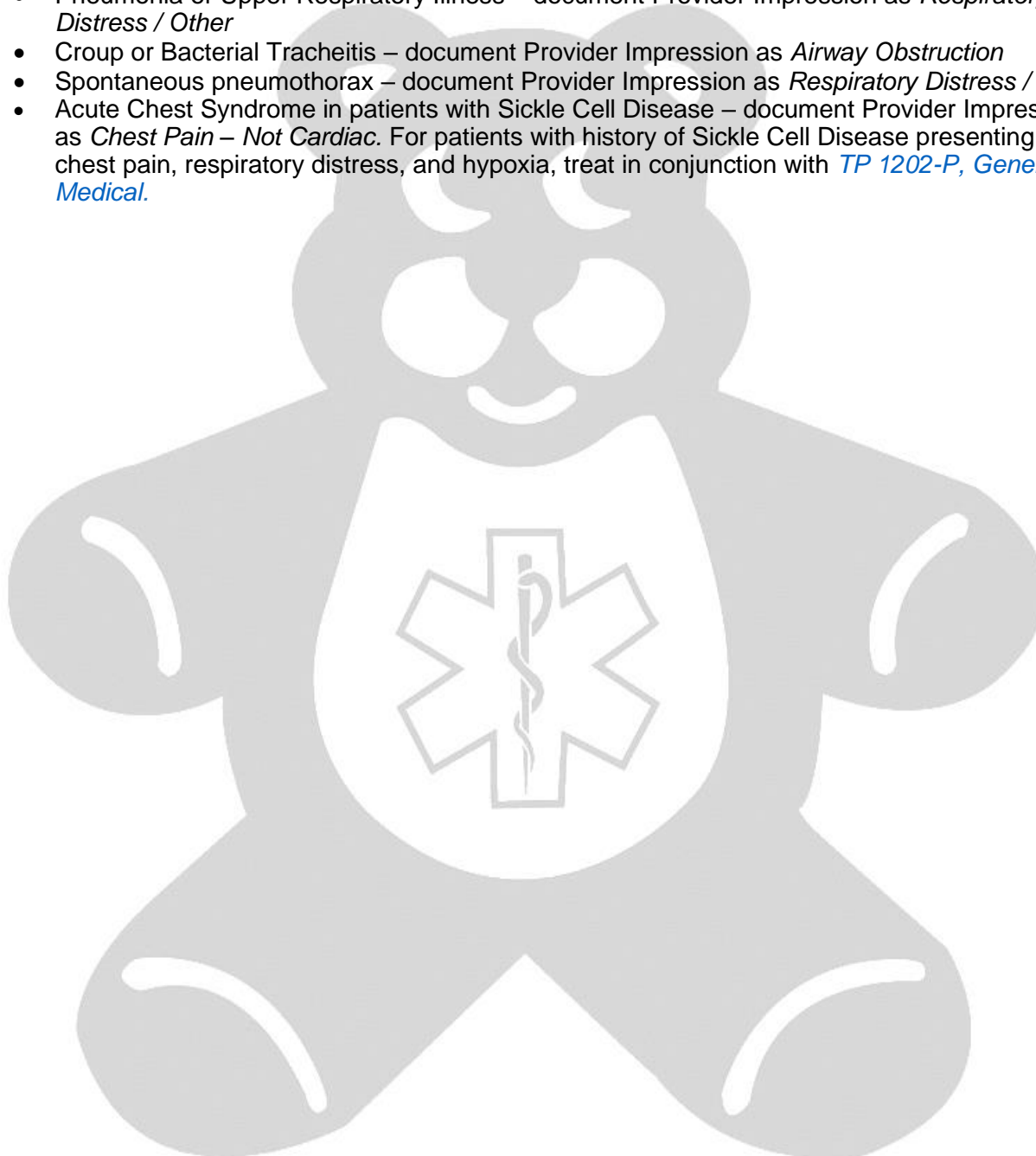


**Treatment Protocol: RESPIRATORY DISTRESS**

**Ref. No. 1237-P**

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- Pneumonia or Upper Respiratory Illness – document Provider Impression as *Respiratory Distress / Other*
- Croup or Bacterial Tracheitis – document Provider Impression as *Airway Obstruction*
- Spontaneous pneumothorax – document Provider Impression as *Respiratory Distress / Other*
- Acute Chest Syndrome in patients with Sickle Cell Disease – document Provider Impression as *Chest Pain – Not Cardiac*. For patients with history of Sickle Cell Disease presenting with chest pain, respiratory distress, and hypoxia, treat in conjunction with [TP 1202-P, General Medical](#).







**Treatment Protocol: CARBON MONOXIDE EXPOSURE**

**Ref. No. 1238-P**

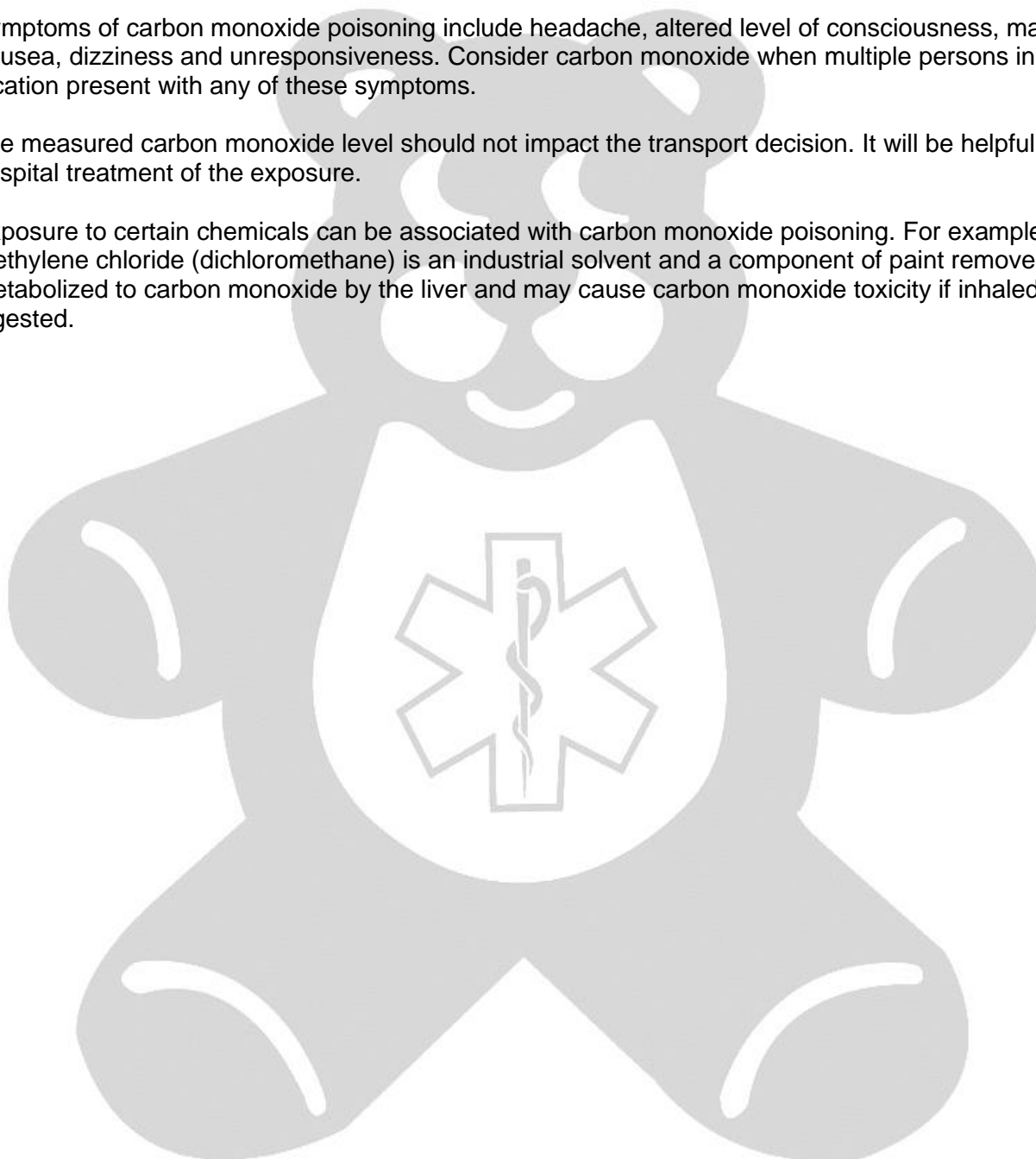
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1. Assess scene for potential hazards and number of patients
2. Remove patient from the source of carbon monoxide ❶
3. Assess airway and initiate basic and/or advanced airway maneuvers prn ([MCG 1302](#))
4. Administer **high-flow Oxygen 15 L/min** ([MCG 1302](#))
5. Advanced airway prn ([MCG 1302](#))
6. Initiate cardiac monitoring prn ([MCG 1308](#))
7. If carbon monoxide monitor available, consider measuring CO level ❷  
Report and document results
8. Establish vascular access prn ([MCG 1375](#))
9. For altered level of consciousness, treat in conjunction with [TP 1229-P, ALOC](#)
10. Assess for signs of trauma  
For traumatic injury, treat in conjunction with [TP 1244-P, Traumatic Injury](#)
11. For poor perfusion ([MCG 1355](#)):  
**Normal Saline 20mL/kg IV rapid infusion** per [MCG 1309](#)  
For persistent poor perfusion, treat in conjunction with [TP 1207-P, Shock/Hypotension](#)
12. For suspected exposure to hazardous materials, treat in conjunction with [TP 1240-P, HAZMAT](#) ❸



**SPECIAL CONSIDERATIONS**

- ❶ Symptoms of carbon monoxide poisoning include headache, altered level of consciousness, malaise, nausea, dizziness and unresponsiveness. Consider carbon monoxide when multiple persons in same location present with any of these symptoms.
- ❷ The measured carbon monoxide level should not impact the transport decision. It will be helpful for hospital treatment of the exposure.
- ❸ Exposure to certain chemicals can be associated with carbon monoxide poisoning. For example, methylene chloride (dichloromethane) is an industrial solvent and a component of paint remover. It is metabolized to carbon monoxide by the liver and may cause carbon monoxide toxicity if inhaled or ingested.





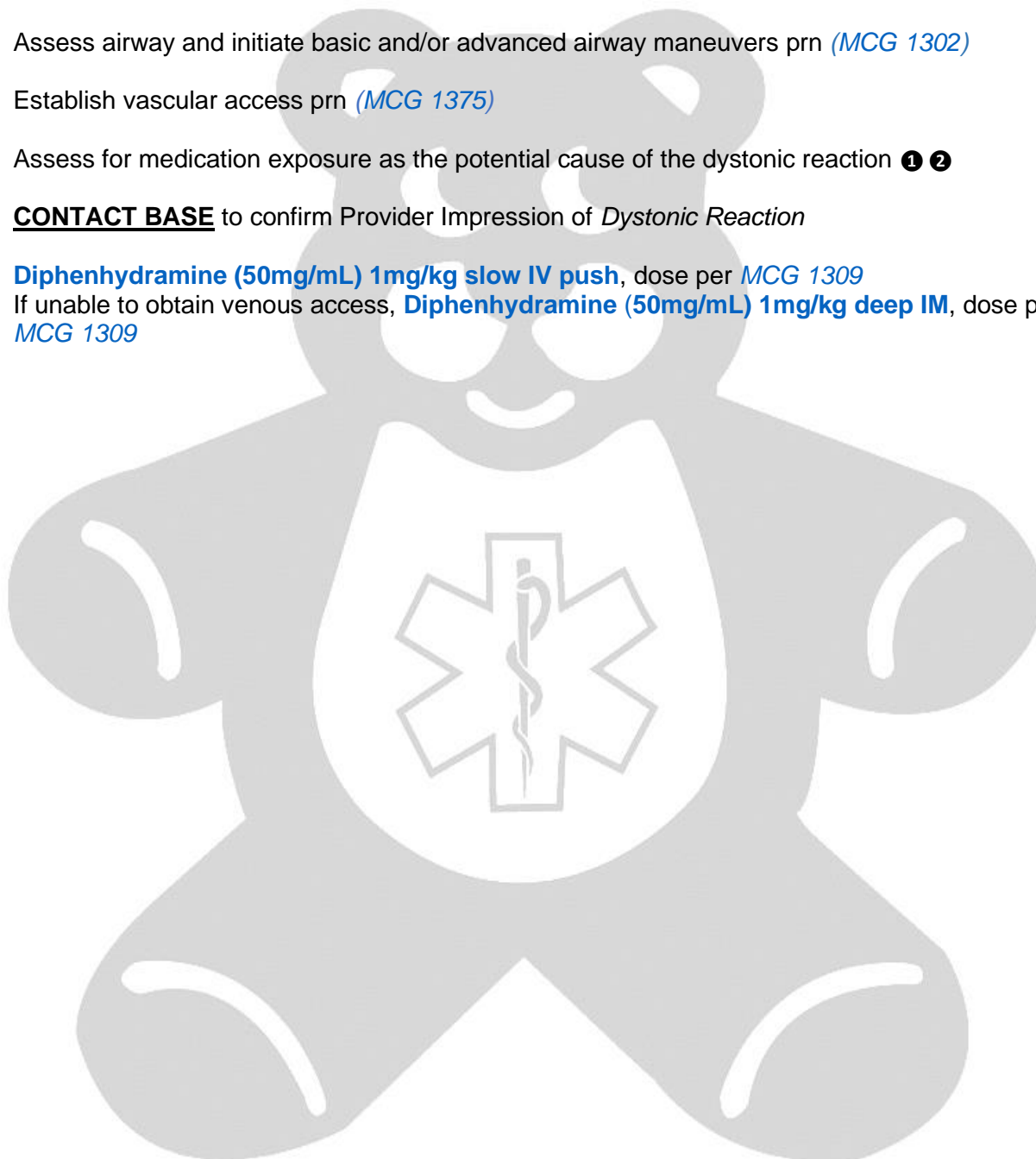
**Treatment Protocol: DYSTONIC REACTION**

**Ref. No. 1239-P**

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**Base Hospital Contact Required.**

1. Assess airway and initiate basic and/or advanced airway maneuvers prn ([MCG 1302](#))
2. Establish vascular access prn ([MCG 1375](#))
3. Assess for medication exposure as the potential cause of the dystonic reaction ① ②
4. **CONTACT BASE** to confirm Provider Impression of *Dystonic Reaction*
5. **Diphenhydramine (50mg/mL) 1mg/kg slow IV push**, dose per [MCG 1309](#)  
If unable to obtain venous access, **Diphenhydramine (50mg/mL) 1mg/kg deep IM**, dose per [MCG 1309](#)





**Treatment Protocol: DYSTONIC REACTION**

**Ref. No. 1239-P**

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**SPECIAL CONSIDERATIONS**

- ❶ The table below shows common medications that can cause an acute dystonic reaction.

Generic Name	Trade Name	General Use
Prochlorperazine	Compazine	Antiemetic, migraine headache
Hydroxyzine	Vistaril, Atarax	Antiemetic, antipruritic
Promethazine	Phenergan	Antiemetic, antipsychotic
Haloperidol	Haldol	Antipsychotic, Tourette's syndrome
Thioridazine	Mellaril	Antipsychotic
Alprazolam	Xanax	Antianxiety
Metoclopramide	Reglan	Antiemetic
Droperidol	Inapsine	Antiemetic, antipsychotic
Fluphenazine	Prolixin	Neuralgia, antipsychotic

- ❷ Signs and symptoms of a dystonic reaction include anxiety, agitation and associated involuntary muscle spasms of the head, neck, face, eyes or trunk. This often results in an inability to retract the tongue into the mouth, forced jaw opening, facial grimacing, and/or eye deviation.



**Treatment Protocol: HAZMAT**

**Ref. No. 1240-P**

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**Contact Medical Alert Center (MAC) for all MCIs prior to transport otherwise notify the receiving hospital ①**

1. Secure area, establish incident site, and don protective equipment/gear appropriate for hazardous material exposure according to the provider agency protocol
2. If MCI, begin triage ([Ref. 519.2 and Ref. 519.5](#))  
Provide MAC with the following incident information: properties of contaminant, type of decontamination performed, signs/symptoms, and smells
3. Remove patient from source if safe to do so, and move to decontamination area prn
4. Assess airway and initiate basic and/or advanced airway maneuvers prn ([MCG 1302](#))
5. Administer **Oxygen** prn ([MCG 1302](#))
6. Remove patient's clothing
7. Flush skin, eyes and mucous membranes with copious amounts of water  
For eye involvement, irrigate with **Normal Saline 1L** during transport; allow patient to remove contact lenses if possible
8. Initiate cardiac monitoring ([MCG 1308](#))  
Perform 12-lead ECG prn  
For patients with dysrhythmias, treat in conjunction with [TP 1212-P, Cardiac Dysrhythmia - Bradycardia](#) or [TP 1213-P, Cardiac Dysrhythmia - Tachycardia](#)
9. Establish vascular access prn ([MCG 1375](#))
10. Assess for signs of trauma  
If traumatic injury suspected, treat in conjunction with [TP 1243-P, Traumatic Injury](#)
11. For poor perfusion ([MCG 1355](#)):  
**Normal Saline 20mL/kg IV rapid infusion** per [MCG 1309](#)  
For persistent poor perfusion, treat in conjunction with [TP 1207-P, Shock/Hypotension](#)
12. Consider contacting the Poison Control Center in conjunction with the Base Hospital for assistance with management of toxins ([Ref. 805](#))

**NERVE AGENT EXPOSURE**

13. If multiple symptomatic patients with > 50 victims involved, request EMS CHEMPACK from the MAC ([Ref. 1108](#))



**Treatment Protocol: HAZMAT**

**Ref. No. 1240-P**

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14. Pediatric patients **longer** than the length-based resuscitation tape (Broselow™) should be treated according to adult doses which are listed below and found in [TP 1240, HAZMAT 2](#)

Mild Exposure: **1 DuoDote IM**  
Moderate Exposure: **2 DuoDotes IM, one after the other**  
Severe Exposure: **3 DuoDotes IM, one after the other**

15. Pediatric patients between **3 – 36 kilograms** body weight based on measurement using the length-based resuscitation tape (Broselow™) should be treated as follows: **2**

Mild Exposure: **Atropine (0.1mg/mL) 0.02mg/kg IV/IM**, dose as per [MCG 1309](#)  
Moderate Exposure: **1 DuoDote IM**  
Severe Exposure: **1 or 2 DuoDote(s) IM**, one after the other when applicable, based on the table below:

Avg Wt (KG)	Color	Initial Emergency Dose
4	Grey	1 DuoDote™
6.5	Pink	
8.5	Red	
10.5	Purple	
13	Yellow	
16.5	White	
20.5	Blue	
26	Orange	2 DuoDotes™
33	Green	

\*Duodote (2.1mg Atropine/600 mg 2PAM Chloride)

16. For seizure, treat in conjunction with [TP 1231-P, Seizure](#)

17. For EMS CHEMPACK Deployment:

EMS CHEMPACK may be utilized for repeat dosing as necessary

Repeat dose prn 5 minutes after initial emergency DuoDote

Avg Wt (KG)	Color	Repeat Atropine Dose Multi-dose vial (0.4mg/mL) 0.1mg/kg IV or IM	2PAM Chloride* Multi-dose vial (50mg/mL) 50 mg/kg IM or IV	Diazepam** Multi-dose vial (5mg/mL) 0.1mg/kg IV or IM prn seizure
4	Grey	0.4mg, 1mL	200mg, 4mL	0.4 mg, 0.08mL
6.5	Pink	0.7mg, 1.75mL	325mg, 6.5mL	0.6 mg, 0.12mL
8.5	Red	0.9mg, 2.25mL	425mg, 8.5mL	0.8 mg, 0.16mL
10.5	Purple	1mg, 2.5mL	525mg, 10.5mL	1 mg, 0.2mL
13	Yellow	1.3mg, 3.25mL	650mg, 13mL	1.3 mg, 0.26mL
16.5	White	1.6mg, 4mL	825mg, 16.5mL	1.6 mg, 0.32mL
20.5	Blue	2mg, 5mL	1000mg, 20mL	2 mg, 0.4mL
26	Orange	2.6mg, 6.5mL	1000mg, 20mL	2.6 mg, 0.52mL
33	Green	3.3mg, 8.25mL	1000mg, 20mL	3.3 mg, 0.66mL





**Treatment Protocol: HAZMAT**

**Ref. No. 1240-P**

Atropine multi-dose vials can provide closer to ideal dosages, if available

\*Repeat dose 60 minutes after Initial Emergency DuoDote

\*\* For seizure, if utilizing the CHEMPACK, treat seizure with Diazepam as per above table.

IV preferred route for Diazepam but can administer IM if not IV available

May repeat diazepam dose x1 in 5 min, maximum total dose 5mg

If diazepam not available treat in conjunction with [TP 1231-P, Seizure](#)

If the child is too tall for the pediatric resuscitation tape and adult size, treat per adult protocol

[TP 1240, HAZMAT](#)

**ORGANOPHOSPHATE EXPOSURE**

18. For heart rate < 60bpm, hypotension, respiratory depression and/or extreme salivation

[Atropine \(0.1mg/mL\) 0.05mg/kg IV/IO](#)

May be repeated every 5 min, maximum total dose 5mg

For seizure, treat in conjunction with [TP 1231-P, Seizure](#)

**RADIOLOGIC EXPOSURE**

19. If radiation contamination is suspected, confirm by using appropriate detection devices available through Department of Public Health (DPH), Radiation Management at (213) 989-7140

20. If radiation contamination present, identify the cause of the contamination ③

Internal Radiation is exposure through open wound, ingestion or inhalation of radioactive materials

External Radiation is exposure through a Radiological Dispersal Device (RDD), Radiological Material Release (RMR) or Radiological Exposure Device (RED)

21. For External Radiation:

If a RDD is used and in the absence of any other information, evacuate 1,650 feet in all directions from the detonation site and then contact the MAC ③

Notify DPH Radiation Management at (213) 989-7140 if departmental HAZMAT team is not available and prolonged exposures are expected ④

22. For patients with a life-threatening condition:

Treat using appropriate treatment protocol based on complaints in conjunction with decontamination

Remove the outer clothing and utilize containment mitigation techniques before transport

23. For patients without a life-threatening condition:

Decontaminate using departmental protocols

Treat using appropriate treatment protocol based on signs and symptoms

24. Asymptomatic and minimal exposure suspected:

Decontaminate and release patient if appropriate ⑤



**SPECIAL CONSIDERATIONS**

- ❶ If MCI, MAC should be contacted for 5 or more patients and coordinate all destination decisions otherwise the Base Hospital should be notified as specified in this protocol, and if no Base Hospital required then the receiving hospital will be notified.
- ❷ Nerve agent exposure symptom severity:  
SEVERE: severe respiratory distress, respiratory arrest, cyanosis, extreme SLUDGE (salivation, lacrimation, urination, defecation, gastrointestinal distress and emesis) seizures, unconsciousness  
MODERATE: miosis, rhinorrhea, shortness of breath, vomiting, diarrhea  
MILD: miosis, rhinorrhea and increased salivation
- ❸ Radiation Exposure Safety:  
Exposure to victims with internal radiation poses low-to-no risk to EMS personnel  
Exposure to victims with external radiation exposure poses low-to-moderate risk to EMS personnel  
Remember the following principles:  
*Time*: limit time with the victim to a minimum  
*Distance*: the further away from the source, the smaller the dose received.  
*Shielding*: "Turnouts" will protect from alpha and beta emitters, wear respiratory protection if particulate matter (i.e., dust or powder) present
- ❹ The HAZMAT team, MAC, or Department of Public Health Radiation Management will be able to redefine boundaries, establish radiation dose guidelines, assist with monitoring and decontamination procedures, and provide support to on-scene responders. These resources may also refer to *Emergency Response Guidebook* for other recommended scene precautions.
- ❺ If number of patients exceeds available resources, asymptomatic patients with minimal exposure may be released for home decontamination.





**Treatment Protocol: OVERDOSE / POISONING / INGESTION**

**Ref. No. 1241-P**

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1. Assess airway and initiate basic and/or advanced airway maneuvers prn ([MCG 1302](#))
2. Administer **Oxygen** prn ([MCG 1302](#))
3. Establish vascular access prn ([MCG 1375](#)) ①
4. For suspected opioid overdose with altered mental status and hypoventilation/apnea:  
**Naloxone (1mg/mL) 0.1mg/kg IM/IN/IV**, dose per [MCG 1309](#) ① or  
**Naloxone 2-4 mg IN** if using pre-packaged nasal spray (1mg per nostril or 4mg/0.1 mL IN depending on formulation available); excludes newborns ②  
Maximum dose all routes 8 mg  
Titrate to adequate respiratory rate and tidal volume
5. If partial response to Naloxone and strong suspicion for opioid overdose:  
**CONTACT BASE** for additional doses of **Naloxone**
6. For respiratory distress, treat in conjunction with [TP 1237-P, Respiratory Distress](#)
7. Initiate cardiac monitoring prn ([MCG 1308](#))  
For suspected cardiac ischemia or dysrhythmia, perform 12-lead ECG and **CONTACT BASE**  
For patients with dysrhythmias, treat in conjunction with [TP 1212-P, Cardiac Dysrhythmia - Bradycardia](#) or [TP 1213-P, Cardiac Dysrhythmia - Tachycardia](#)
8. Evaluate for other causes of altered level of consciousness ([MCG 1320](#))
9. Assess for signs of trauma  
If traumatic injury suspected, treat in conjunction with [TP 1244-P, Traumatic Injury](#)
10. Check blood glucose  
If < 60mg/dL or > 250mg/dL, treat in conjunction with [TP 1203-P, Diabetic Emergencies](#)
11. For alcohol intoxication, document Provider Impression – *Alcohol Intoxication*  
For other intoxications, including overdose or ill effects of prescription medications and illicit substances, document Provider Impression – *Overdose/Poisoning/Ingestion*
12. For poor perfusion ([MCG 1355](#)):  
**Normal Saline 20mL/kg IV rapid infusion** per [MCG 1309](#)  
For persistent poor perfusion, treat in conjunction with [TP 1207-P, Shock/Hypotension](#)
13. **CONTACT BASE** to discuss antidote administration  
  
Calcium channel blocker overdose: **Calcium chloride (100mg/mL) 20mg/kg slow IV push**, dose per [MCG 1309](#)  
Tricyclic antidepressant overdose: **Sodium bicarbonate (1mEq/mL) 1mEq/kg slow IV push**, dose per [MCG 1309](#)
14. Assess for co-ingestion of other substances

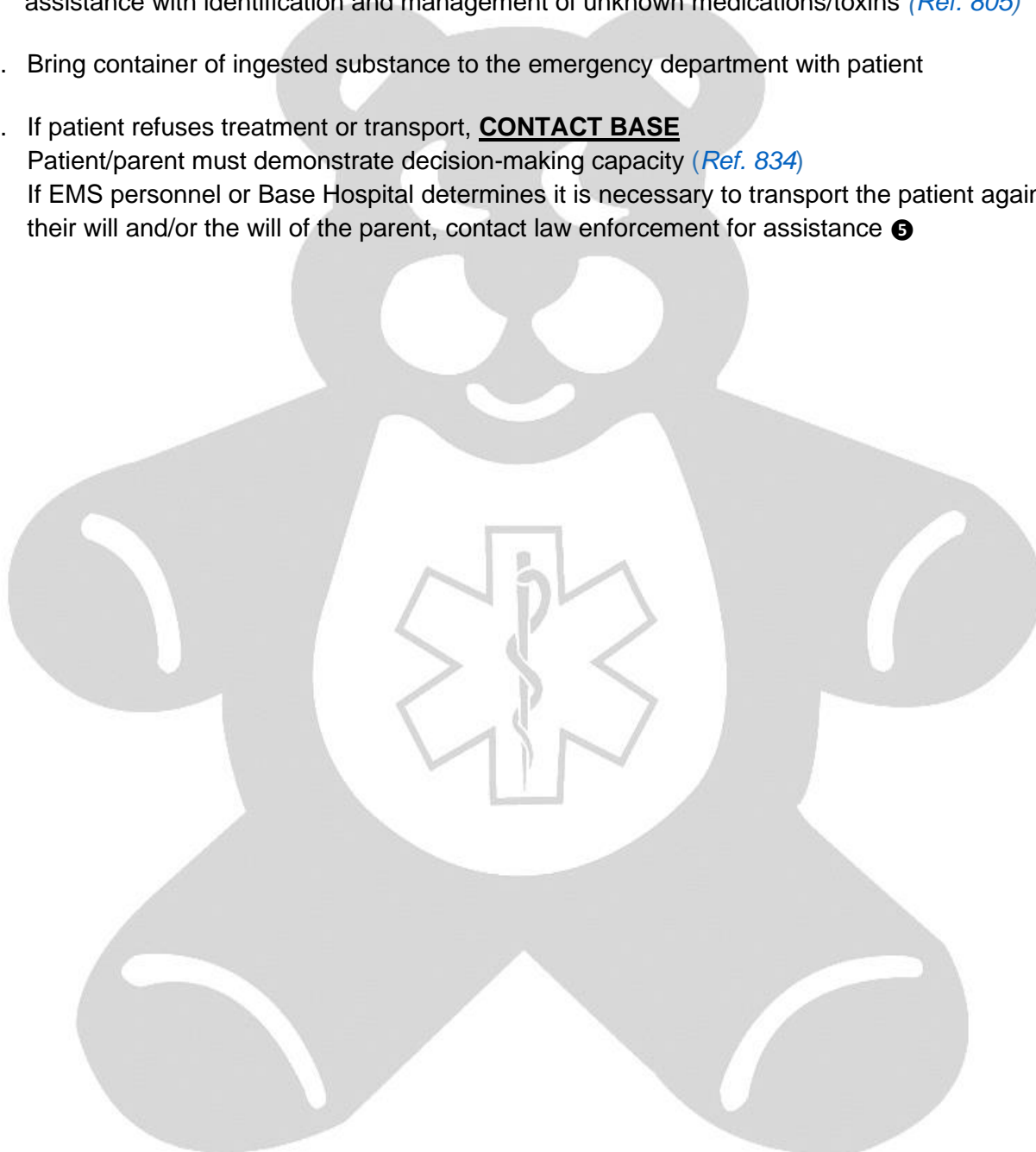


**Treatment Protocol: OVERDOSE / POISONING / INGESTION**

**Ref. No. 1241-P**

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15. Consider contacting the Poison Control Center (1-800-222-1222) in conjunction with Base for assistance with identification and management of unknown medications/toxins ([Ref. 805](#))
16. Bring container of ingested substance to the emergency department with patient
17. If patient refuses treatment or transport, **CONTACT BASE**  
Patient/parent must demonstrate decision-making capacity ([Ref. 834](#))  
If EMS personnel or Base Hospital determines it is necessary to transport the patient against their will and/or the will of the parent, contact law enforcement for assistance ⑤





**SPECIAL CONSIDERATIONS**

- ❶ The first priority for apneic patients after narcotic overdose is to begin positive pressure ventilation. Once ventilations are established, naloxone should be administered with the goal of restoring spontaneous ventilations. Vascular access should not take priority over initial treatment with Naloxone (IN or IM) for patients with suspected opiate overdose. Patients who are awake and alert with normal respirations after naloxone therapy may not require IV access or additional doses of naloxone.
- ❷ Higher dose pre-packaged nasal spray should not be used in the newborn/neonate due to potential risk to precipitate withdrawal.
- ❸ Signs of calcium channel overdose include bradycardia along with hypotension and hyperglycemia. Consider when the patient is taking or has access to a calcium channel blocker medication. Ask about potential exposures including medications in the home.
- ❹ ECG findings consistent with tricyclic overdose include wide QRS ( $>0.12\text{mm}$ ) and terminal R in aVR. Consider when the patient is taking or has access to a tricyclic medication. Ask about potential exposures including medications in the home.
- ❺ EMS Personnel are mandated reporters of child abuse and neglect. Communicate concerns about child abuse and/or neglect to accepting ED staff when home suggests children could be at risk for harm (e.g., unkempt home, evidence of drug or alcohol abuse, unsafe living conditions, known or suspected domestic violence), when the history does not match with the severity of physical findings (e.g., child posturing after a roll off the couch), when patterned injury or burns are noted (e.g., circular burns as from a cigarette, whip marks on the skin, burns of both hands or feet), or when child reports physical or sexual abuse. Children  $< 3$  years of age and those with developmental delay are at increased risk of abuse. This must also be accompanied by notification to Department of Children and Family Service



**Treatment Protocol: CRUSH INJURY / SYNDROME**

**Ref. No. 1242-P**

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**Base Hospital Contact: Required for patients at risk for crush syndrome ❶ or prolonged entrapment > 30 minutes. ❷**

1. For multi-system trauma, treat in conjunction with [TP 1244-P, Traumatic Injury](#)
2. Assess airway and initiate basic and/or advanced airway maneuvers prn ([MCG 1302](#))
3. Provide spinal motion restriction (SMR) if indicated ([MCG 1360](#))  
For alert patients, logroll patient off backboard (if used during extrication) and onto gurney prior to transport ❸
4. Administer **Oxygen** prn ([MCG 1302](#))
5. For anticipated prolonged extrication (> 30 minutes)  
Consider activating the Hospital Emergency Response Team (HERT), [Ref. 817](#)
6. Establish vascular access immediately ([MCG 1375](#))  
**CONTACT BASE** to discuss placement of an IO if unable to establish IV access ❹
7. **Normal Saline 20mL/kg IV/IO rapid infusion** per [MCG 1309](#) as soon as possible and prior to release of compressive force  
Repeat x1 for a **total of 40mL/kg IV/IO**, maximum prior to Base contact 2L  
**CONTACT BASE** to obtain order for additional **Normal Saline 20mL/kg IV/IO** if persistent entrapment ❺
8. Initiate cardiac monitoring ([MCG 1308](#))  
Assess for signs of hyperkalemia
9. Apply blanket to keep patient warm ❻
10. If evidence of hyperkalemia (peaked T-waves in multiple leads, absent p-waves, and/or widened QRS complex) administer: ❻  
**Calcium Chloride (100mg/mL) 20mg/kg slow IV/IO push**, dose per [MCG 1309](#)  
Repeat x1 for persistent ECG abnormalities  
**Sodium Bicarbonate (1mEq/mL) 1 mEq/kg slow IV/IO push**, dose per [MCG 1309](#)  
Repeat x1 for persistent ECG abnormalities  
**Albuterol 5mg (6mL) via neb**, repeat continuously until hospital arrival ❼  
**CONTACT BASE** for persistent ECG abnormalities to obtain order for additional medications ❸
11. For pain management: refer to [MCG 1345, Pain Management](#)  
Dose per [MCG 1309](#)



**Treatment Protocol: CRUSH INJURY / SYNDROME**

**Ref. No. 1242-P**

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12. For nausea or vomiting in patients  $\geq 4$  years old:  
**Ondansetron 4mg ODT**
13. For CRUSH INJURY without risk of crush syndrome  
Release compression and extricate patient  
Monitor cardiac rhythm for signs of hyperkalemia
14. Consider pre-position a tourniquet prior to extrication in order to prevent hemorrhage upon release of compression
15. For patients at risk for CRUSH SYNDROME ①, administer the following medications 5 minutes prior to extrication: ⑥ ⑧ ⑨  
**Calcium Chloride (100mg/mL) 20mg/kg slow IV/IO push**, dose per *MCG 1309*  
**Sodium Bicarbonate (1mEq/mL) 1mEq/kg slow IV/IO push**, dose per *MCG 1309*  
**Albuterol 5mg (6mL) via neb**, repeat immediately x1

If unable to establish vascular access while entrapped  
Place tourniquet PRIOR to extrication ⑩





**SPECIAL CONSIDERATIONS**

- ❶ Crush syndrome is a systemic illness characterized by dysrhythmias and shock. It results from toxins released from crushed muscle tissue into the blood stream. Patients are at risk for crush syndrome if they have all of the following: 1) circumferential compression causing crush injury; AND 2) involvement of a large muscle group (lower extremity including the thigh(s) and/or pelvic girdle or upper extremity including the pectoral girdle); AND 3) entrapment for at least 1 hour. The risk of crush syndrome increases with the amount of muscle involved and the duration of the entrapment.
- ❷ For patients requiring transport to a Pediatric Trauma Center per [Ref. 506](#), which is also a Base Hospital, contact receiving Pediatric Trauma Center for Base Medical Direction and notification. If the Base Hospital is contacted and the Base redirects transport to a Pediatric Trauma Center, Base personnel will notify the Pediatric Trauma Center.
- ❸ A backboard is not required for spinal motion restriction (SMR) and may cause harm as well as increased pain. Patients should not be transported on a backboard for the purpose of SMR. If a backboard is used for extrication, patients who are alert should then be logrolled onto the gurney prior to transport. The backboard may be used during patient transport for splinting of multiple simultaneous extremity fractures or to assist with maneuvering the unconscious patient. In all cases, the backboard should be removed immediately if causing respiratory compromise.
- ❹ Patients with crush injury require large volumes of fluid resuscitation. Patients with prolonged entrapment will require maintenance fluids. IO access should be considered when attempts at IV access are not successful if: 1) prolonged entrapment is likely (> 30 minutes) and/or 2) there are signs of hyperkalemia and/or 3) there is risk of crush syndrome requiring medication administration.
- ❺ Infants and small children are at high risk for hypothermia due to their large surface area to body mass ratio, reduced ability to shiver, and limited body fat.
- ❻ Flush the IV line with normal saline after each medication. Administration of Calcium and Bicarbonate together will cause precipitation of the medication.
- ❼ Dosing differs from MCG 1309; higher doses of albuterol are required to treat hyperkalemia. Consider blow-by to avoid agitation in pediatric patients if a mask cannot be tolerated (e.g., infants and toddlers).
- ❽ The duration of action of the medications is approximately 30 minutes. Contact Base to discuss re-dosing the medications if persistent signs of hyperkalemia or if the patient will not arrive at the hospital within 30 minutes.
- ❾ These medications should be administered prior to release of the compressive force to prevent complications from the cellular toxins that enter the circulation upon extrication of the patient. Calcium stabilizes the cardiac muscle and should be administered first.
- ❿ Tourniquet placement PRIOR to extrication is a last resort for patients who are at risk for crush syndrome in whom vascular access cannot be established or when transport time is anticipated to be > 30 minutes. The tourniquet must completely occlude venous and arterial flow in order to protect the patient from crush syndrome. Establish vascular access and cardiac monitoring immediately after extrication and be prepared to treat symptoms of crush syndrome.



**Treatment Protocol: TRAUMATIC ARREST**

**Ref. No. 1243-P**

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**Base Hospital Contact: Contact the Trauma Center for patients not meeting criteria for determination of death per [Ref 814](#). ①**

1. Prioritize rapid transport for patients who do not meet [Ref. 814](#) ②
2. Immediately control major bleeding ([MCG 1370](#))  
Apply tourniquet prn
3. Assess airway and initiate basic and/or advanced airway maneuvers prn ([MCG 1302, 1309](#)) ③  
Ventilate with **high flow Oxygen 15L/min**
4. Begin chest compressions
5. Perform bilateral needle thoracostomy for suspected tension pneumothorax ([MCG 1335](#))
6. Initiate cardiac monitoring ([MCG 1308](#))  
Assess cardiac rhythm
7. If shockable rhythm (V-Fib/V-Tach) identified:  
Defibrillate V-Fib/V-Tach, dose per [MCG 1309](#)

For penetrating trauma: ④  
Defibrillate while prioritizing immediate transport

For blunt trauma: ⑤  
Initiate resuscitation on scene  
If organized rhythm is not restored after defibrillation x3 or patient converts to nonshockable rhythm

**CONTACT BASE** for guidance on continued resuscitation or transport

8. Provide spinal motion restriction (SMR) if indicated ([MCG 1360](#))  
Do not delay transport for SMR ⑥
9. Establish vascular access en route ([MCG 1375](#))  
Establish IO if unable to establish IV access
10. **Normal Saline 20mL/kg IV/IO rapid infusion** per [MCG 1309](#) x2, maximum 2L  
Administer through two sites simultaneously if possible
11. Hanging/asphyxia should be transported to the nearest Pediatric Medical Center (PMC) if transport is  $\leq 30$  mins or Emergency Department Approved for Pediatrics (EDAP) if  $> 30$  minutes, not trauma center, unless other evidence of trauma



### SPECIAL CONSIDERATIONS

- ① EMS Personnel are mandated reporters of child abuse and neglect, and a report should be made when suspected as per [Ref. 822](#). Communicate suspicion for child abuse and/or neglect to accepting ED staff when home suggests children could be at risk for harm (e.g., unkept home, evidence of drug or alcohol abuse, unsafe living conditions, known or suspected domestic violence), when the history does not match with the severity of physical findings (e.g., child posturing after a roll off the couch), when patterned injury or burns are noted (e.g., circular burns as from a cigarette, whip marks on the skin, burns of both hands or feet), or when child reports physical or sexual abuse. Children < 3 years of age and those with developmental delay are at increased risk of abuse. This must also be accompanied by notification to the Department of Children and Family Services (DCFS).
- ② Rapid transport after hemorrhage control is the priority for all patients with severe trauma. With the exception of hemorrhage control, needle thoracostomy, and initiation of CPR, all other procedures may be deferred for immediate ambulance loading of patient and performed en route.
- ③ Bag-mask ventilation (BMV) with a viral filter is the preferred initial method of airway management. An advanced airway may be placed during transport or if BMV is difficult or ineffective as authorized per [MCG 1302](#); supraglottic airway (sizing per MCG 1309) is preferred unless contraindicated. Paramedics should use judgment based on patient characteristics, circumstances, and skill level when selecting the advanced airway modality for pediatric patients in whom multiple modalities are authorized.
- ④ Patients with penetrating trauma should receive defibrillation while still prioritizing early transport.
- ⑤ Sudden cardiac death can result from blunt cardiac injury (commotio cordis) triggering V-fib/V-tach. Unlike major trauma resulting in hemorrhagic shock, patients with this mechanism typically have **minimal external trauma** and should be treated with immediate defibrillation on scene. Patients with multisystem blunt trauma in persistent cardiac arrest without organized rhythm should generally not be transported. If commotio cordis is the suspected mechanism with minimal external trauma and the patient remains in V-fib/V-tach after three defibrillations, contact Base to discuss timing of transport versus termination for futility.
- ⑥ For patients in traumatic arrest, spinal motion restriction (SMR) using a backboard causes harmful delays in care. However, a backboard may be helpful to assist in patient movement and to support chest compressions.





**Treatment Protocol: TRAUMATIC INJURY**

**Ref. No. 1244-P**

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**Base Hospital Contact: Required for patients who meet Trauma Center criteria or guidelines. ① ②**  
**Notify the receiving Pediatric Trauma Center as soon as possible for all patient transports.**

1. Immediately control major bleeding ([MCG 1370](#))  
Apply tourniquet prn
2. Assess airway and initiate basic and/or advanced airway maneuvers prn ([MCG 1302](#); [1309](#)) ③
3. For traumatic arrest, treat per [TP 1243-P, Traumatic Arrest](#)
4. Provide spinal motion restriction (SMR) if indicated ([MCG 1360](#))  
For alert patients, logroll patient off the backboard (if used during extrication) and onto gurney prior to transport ④
5. Administer **Oxygen** prn ([MCG 1302](#))  
**High flow Oxygen 15L/min** for all patients with shock or with suspected traumatic brain injury
6. If patient has an Unmanageable Airway: ([MCG 1302](#))  
Initiate immediate transport to EDAP and **CONTACT BASE** en route
7. For anticipated prolonged extrication (> 30 minutes)  
Consider activating the Hospital Emergency Response Team (HERT), [Ref. 817](#)
8. For crush injury, treat in conjunction with [TP 1242, Crush Injury/Syndrome](#)
9. Initiate cardiac monitoring prn ([MCG 1308](#))
10. Establish vascular access prn ([MCG 1375](#))
11. Apply blanket to keep patient warm ⑤
12. Consider medical condition preceding accident and refer to appropriate treatment protocol prn ⑥

**MULTI-SYSTEM TRAUMA**

13. Perform needle thoracostomy for suspected tension pneumothorax ([MCG 1335](#))
14. For an open or sucking chest wound, cover with a commercially available vented chest seal or vented (3-sided) occlusive dressing ⑦
15. For poor perfusion ([MCG 1355](#)) with hypotension:  
**Normal Saline 20mL/kg IV/IO rapid infusion** per [MCG 1309](#) ⑧  
**CONTACT BASE** to discuss further fluid resuscitation
16. Cover eviscerated organs with a moist non-adhering dressing



**Treatment Protocol: TRAUMATIC INJURY**

**Ref. No. 1244-P**

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17. For pain management: refer to [MCG 1345, Pain Management](#)  
Dose per [MCG 1309](#)
18. For nausea or vomiting in patients  $\geq 4$  years old: ⑨  
[Ondansetron 4mg ODT](#)

**ISOLATED HEAD INJURY**

19. Administer [high flow Oxygen 15L/min](#) ⑩  
Continually assess patient's airway and ventilation status, assist prn ⑪
20. For SBP  $\leq 70$ mmHg:  
**Normal Saline 20mL/kg IV rapid infusion** per [MCG 1309](#) to maintain SBP  $> 70$ mmHg ⑫  
**CONTACT BASE** for persistent poor perfusion ([MCG 1355](#)) to obtain order for additional **Normal Saline 20mL/kg IV**
21. For nausea or vomiting in patients  $\geq 4$  years old: ⑨  
[Ondansetron 4mg ODT](#)
22. Transport with head of gurney elevated to 30 degrees when possible ⑬
23. If patient develops seizure activity, treat in conjunction with [TP 1231-P, Seizure](#)
24. For pain management: refer to [MCG 1345, Pain Management](#)  
Dose per [MCG 1309](#)

**ISOLATED EXTREMITY INJURY**

25. For pain management: refer to [MCG 1345, Pain Management](#)  
Dose per [MCG 1309](#)
26. For poor perfusion ([MCG 1355](#)):  
**Normal Saline 20mL/kg IV rapid infusion** per [MCG 1309](#)  
**CONTACT BASE** for persistent poor perfusion to obtain order for additional **Normal Saline 20mL/kg IV**
27. Splint and dress injuries prn  
For distal extremity fractures with poor neurovascular status distal to injury – realign and stabilize extremity  
Mid-shaft femur – apply traction splint per manufacturer guidelines ⑭  
All other fractures/dislocations – splint in position of comfort



**SPECIAL CONSIDERATIONS**

- ① EMS Personnel are mandated reporters of child abuse and neglect, and a report should be made when suspected as per [Ref. 822](#). Communicate suspicion for child abuse and/or neglect to accepting ED staff when home suggests children could be at risk for harm (e.g., unkept home, evidence of drug or alcohol abuse, unsafe living conditions, known or suspected domestic violence), when the history does not match with the severity of physical findings (e.g., child posturing after a roll off the couch), when patterned injury or burns are noted (e.g., circular burns as from a cigarette, whip marks on the skin, burns of both hands or feet), or when child reports physical or sexual abuse. Children < 3 years of age and those with developmental delay are at increased risk of abuse. This must also be accompanied by notification to the Department of children and Family Services (DCFS).
- ② For patients requiring transport to a Pediatric Trauma Center per [Ref. 506](#), which is also a Base Hospital, contact receiving Pediatric Trauma Center for Base Medical Direction and notification. If the Base Hospital is contacted and the Base redirects transport to a Pediatric Trauma Center, Base personnel will notify the Pediatric Trauma Center.
- ③ Transport should be prioritized over advanced airway placement unless BMV is ineffective. Advanced airway may be placed during transport as authorized per *MCG 1302*; supraglottic airway (sizing per *MCG 1309*) is preferred unless contraindicated. Paramedics should use judgment based on patient characteristics, circumstances, and skill level when selecting the advanced airway modality for pediatric patients in whom multiple modalities are authorized.
- ④ A backboard is not required for spinal motion restriction (SMR) and may cause harm as well as increased pain. Patients should not be transported on a backboard for the purpose of SMR. If a backboard is used for extrication, patients who are alert should then be logrolled onto the gurney prior to transport. The backboard may be used during patient transport for splinting of multiple simultaneous extremity fractures or to assist with maneuvering the unconscious patient. In all cases, the backboard should be removed immediately if causing respiratory compromise.
- ⑤ Infants and small children are at high risk for hypothermia due to their large surface area to body mass ratio, reduced ability to shiver, and limited body fat.
- ⑥ Traumatic events may be due to a medical emergency, e.g. seizure.
- ⑦ Placement of a vented dressing can prevent conversion of an open pneumothorax to a tension pneumothorax. However, tension pneumothorax may still develop in the presence of a vented dressing and should be treated with needle thoracostomy. Furthermore, needle thoracostomy in a patient with evidence of tension pneumothorax should not be delayed for placement of dressing.
- ⑧ Fluid resuscitation increases vascular pressure and dilutes clotting factors, which may increase internal bleeding. For patients at risk of internal hemorrhage, fluids should only be administered for SBP < 70mmHg **and** other signs of poor perfusion, titrated to maintain SBP ≥ 70mmHg. In patients with penetrating trauma, permissive hypotension (withholding fluids if patient has normal mental status) is preferred to reduce ongoing blood loss. Patients with ALOC or SBP < 70mmHg should receive fluids until their mental status and SBP improve. Permissive hypotension is contraindicated in patients with possible traumatic brain injury.



**Treatment Protocol: TRAUMATIC INJURY**

**Ref. No. 1244-P**

- 9 Vomiting should be prevented and/or immediately treated in patients with head injury, since it increases intra-cranial pressure and can compromise the patient's airway.
- 10 **Any** hypoxic episode, even brief, is associated with worse patient outcome for patients with traumatic brain injury.
- 11 Hyperventilation reduces blood flow to the brain by reducing CO<sub>2</sub> and is associated with worse outcomes in severe head injuries. The exception to this is presence of elevated intra-cranial pressure (ICP) with signs of impending herniation (severe ALOC without motor response or with posturing and a unilateral 'blown pupil'). In this case, **mild** hyperventilation of approximately 20-30 breaths per minute, depending on the patient's age, should be used to maintain an ET<sub>CO</sub><sub>2</sub> of 30-35mmHg. This mild hyperventilation reduces blood flow to the brain to decrease ICP until the patient receives definitive surgical care. For patients without elevated ICP, hyperventilation is harmful.
- 12 Any hypotension increases mortality in patients with traumatic brain injury. Normal Saline should be initiated to maintain SBP ≥ 70mmHg at all times but can be withheld if the blood pressure is normal. Although <70 mmHg is used as a generic cut-off for hypotension in pediatric patients the level of systolic blood pressure varies by age and those thresholds are found in [MCG 1309](#) and can be used in decisions for fluid resuscitation.
- 13 A head-elevated position at about 30 degrees reduces intra-cranial pressure and improves respiratory status. Reverse Trendelenburg is an option for patients that cannot be seated. Patients who are hypotensive should be maintained supine unless airway compromise requires repositioning.
- 14 Open femur fracture is not a contraindication to apply the traction splint. If the bone is protruding and there is gross contamination, wash with saline prior to applying the splint.

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**Medical Control Guideline: PREHOSPITAL CODE OF ETHICS**

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The Emergency Medical Services (EMS) System consists of health care professionals that include EMTs, paramedics, nurses, physicians, educators, and administrators. This Code defines our ethical responsibilities and beliefs in the following principles for guiding practice...

**RESPECT**

- Recognize, acknowledge, listen, and encourage all members of the health care team
- Uphold and maintain patient confidentiality and privacy
- Honor the patient's rights and autonomy to make decisions regarding their medical care

**CARING**

- Provide professional, compassionate, and competent care to all patients
- Advocate for the patient's care needs
- Participate and support the advancement of the EMS system through education, training, and continuous quality improvement
- Support prehospital care research to validate, improve and promote evidence-based practice

**FAIRNESS**

- Provide competent medical care to all persons with compassion and respect for human dignity regardless of nationality, race, creed, religion, sex, status, or financial considerations
- Ensure justice by treating all individuals equally and fairly
- Encourage justice by treating all individuals equally and fairly
- Encourage and support impartiality in the delivery of patient care. Decisions should be absent of bias, prejudice or benefit one person over another for improper reasons but based on objective criteria

**INTEGRITY**

- Promote honesty, truthfulness, and consistency in action and practice by all members of the health care team
- Demonstrate responsibility and accountability by maintaining licensure/certification, operating within one's scope of practice, and providing thorough documentation
- Inspire fidelity by adhering to professional code(s) of ethics, following policies and procedures, ensuring team members are respectful, competent and capable of performing duties, and honoring agreements with patients and colleagues
- Maintain trustworthiness and excellence in the delivery of patient care and medical practice

**Medical Control Guideline: AIRWAY MANAGEMENT AND MONITORING**

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**DEFINITIONS:**

**Advanced Airway Maneuvers:** Use of a cuffed endotracheal tube (ET) or supraglottic airway (SGA), e.g., i-gel, to facilitate ventilation and/or oxygenation in a patient who is unable to protect his/her own airway or maintain spontaneous ventilation.

**Attempt Advanced Airway Placement:** Insertion of the laryngoscope into the mouth for the purposes of intubation (for endotracheal intubation (ETI)); insertion of the SGA into the mouth.

**Basic Airway Maneuvers:** Manual airway positioning, obstructed airway maneuvers, bag-mask-ventilation (BMV), and/or use of airway adjuncts (nasopharyngeal or oropharyngeal airways) to provide ventilation and/or to facilitate oxygenation in a patient who is unable to maintain adequate spontaneous ventilation.

**Emerging Infectious Disease (EID):** Infectious diseases that have newly appeared in a population or have existed but are rapidly increasing in incidence or geographic range, or that are caused by one of the National Institute of Allergy and Infectious Diseases (NIAID) Category A, B, or C priority pathogens.

**Hypoxia:** Lower than normal oxygen (O<sub>2</sub>) concentration in the blood resulting in diminished availability of O<sub>2</sub> to the body tissues.

**Hyperoxia:** Exposure of cells, tissues and organs to an excess supply of oxygen.

**Hypoventilation:** Ventilation that is inadequate to support gas exchange in the lung.

**Manageable Airway:** Ventilation is effective, such that one of the following holds true:

- a. Patient is breathing adequately through a patent airway.
- b. Patient is mechanically ventilated effectively via bag-mask-ventilation (BMV), SGA or ET.

**Unmanageable Airway:** The patient is not able to breathe adequately, and EMS personnel are not able to maintain the patient's airway and/or cannot ventilate the patient effectively via BMV, SGA or ET.

**Secure Airway:** The patient's trachea is isolated from the risk of aspiration via a cuffed ET in the trachea.

**Successful Advanced Airway Placement:** Placement of the device such that the patient can be ventilated with minimal or no air leak, confirmed primarily with end-tidal CO<sub>2</sub> measurement with capnography. Secondary confirmation methods include visible chest rise during ventilation and air movement on pulmonary auscultation.

**PRINCIPLES:**

1. Signs and symptoms of hypoxia may include O<sub>2</sub> saturation (SpO<sub>2</sub>) < 94% with respiratory distress, altered mental status or changes in skin signs.



2. Providing O<sub>2</sub> to emergency medical services (EMS) patients may be a lifesaving procedure. Both hypoxia and hyperoxia are potentially harmful; therefore, O<sub>2</sub> should be treated like any other drug and administered when indicated.
3. Hypoventilation results in high arterial carbon dioxide (CO<sub>2</sub>). In general, this results in an end-tidal CO<sub>2</sub> > 45mmHg on capnography, but end-tidal CO<sub>2</sub> may not reflect arterial CO<sub>2</sub> when lung disease and/or increased dead space are present.
4. Basic airway maneuvers should be performed prior to advanced airway maneuvers on patients with hypoventilation.
5. Techniques and procedures utilized for airway management may vary based on operational environment, patient condition and the EMS personnel's level of training and expertise.
6. Patients with unmanageable airway shall be transported to the most accessible receiving facility.
7. In Los Angeles County, endotracheal intubation (ETI) and the supraglottic airway (SGA) i-gel are approved advanced airway options.
8. ETI provides a secure airway. SGAs may not protect the patient from aspiration. However, the device is easier to place than an ET and can provide effective ventilations to most patients in need of an advanced airway.
9. SGA placement is recommended when a patient's medical condition or anatomy predicts likely failure of ETI and in situations where prehospital personnel attempt but are unable to successfully perform ETI. If ventilation via SGA is effective, it should not be removed and replaced with an ET.
10. SGA is the preferred advanced airway for patients experiencing cardiac arrest.
11. Advanced airway placement must be verified and continually monitored.
12. Pulse oximetry and capnography are essential tools for monitoring the effectiveness of airway management. While pulse oximetry monitors oxygenation, it does not assess adequacy of ventilation. Capnography is necessary to monitor ventilation. Capnography is most accurate with proper two-person BMV technique or advanced airway.
13. Hyperventilation (end-tidal CO<sub>2</sub> <30 mmHg), by rate or volume or both, should be avoided.
  - a. Hyperventilation, when applied inappropriately, increases intrathoracic pressure reducing venous return and cardiac output, and is particularly harmful in low-flow states including cardiac arrest. It results in low arterial carbon dioxide (CO<sub>2</sub>), which is harmful in multiple conditions, such as mild or moderate traumatic brain injury. Further, it can cause pulmonary injury including barotrauma and increased incidence of acute respiratory distress syndrome (ARDS).

14. Under rare circumstances, targeted mild hyperventilation (end-tidal CO<sub>2</sub> 30-35 mmHG) may be indicated for comatose patients with signs of severe traumatic brain injury and impending herniation or to match a patient's physiology in cases of severe metabolic acidosis.

**GUIDELINES:**

1. If pulse oximetry is not available (BLS Unit) and the patient is in mild or moderate respiratory distress, provide O<sub>2</sub> with nasal cannula at 2-6 liters per minute.
2. When available, use pulse oximetry to guide oxygen therapy. The desired SpO<sub>2</sub> for most non-critical patients is 94-98%. Document pulse oximetry reading.
3. Initiate immediate high-flow O<sub>2</sub> (15 L/min) for the following conditions:
  - a. Respiratory Arrest (impending or actual)
  - b. Cardiac Arrest
  - c. Shock/Poor Perfusion (including anaphylactic shock)
  - d. Traumatic Brain Injury
  - e. Carbon Monoxide Exposure
  - f. Suspected Pneumothorax
  - g. Hypoxia <94% not corrected with nasal cannula or simple mask
4. If high-flow O<sub>2</sub> is indicated, use one of the following O<sub>2</sub> delivery system based on the patient's condition:
  - a. Non-rebreather mask
  - b. BMV with reservoir
  - c. Endotracheal tube
  - d. Supraglottic airway (SGA)
  - e. CPAP per [MCG 1315](#)
5. For stable patients with mild hypoxia (SpO<sub>2</sub> less than 94%), start O<sub>2</sub> with nasal cannula at 2-6 L/min or simple mask at 8-10 L/min if available. If patient is unable to tolerate nasal cannula or mask, use blow-by technique with O<sub>2</sub> flowing at 15 L/min.
6. Consider the following special populations when titrating oxygen therapy:
  - a. Chronic Obstructive Pulmonary Disease (COPD) – goal SpO<sub>2</sub> is 88 – 92%
  - b. Newborns in need of positive-pressure ventilation – ventilate for 90 seconds with room air, if heart rate remains less than 100 beats per minute, start O<sub>2</sub> at 15 L/min
  - c. Pediatric Congenital Heart Disease – use O<sub>2</sub> with caution if known history of low baseline O<sub>2</sub> saturation
7. Continue to monitor SpO<sub>2</sub> and titrate O<sub>2</sub> therapy as appropriate for the patient's clinical condition until transfer of patient care.
8. Document the SpO<sub>2</sub>, O<sub>2</sub> delivery system used, and the liters per minute administered.
9. If suctioning is required, pre-oxygenate (as applicable) prior to suctioning and do not suction longer than 10 seconds per occurrence. For tracheal suctioning, maintain sterile procedures.

10. Considerations for oropharyngeal airway:
  - a. Unresponsive patient requiring BMV – should be utilized in all such patients where gag reflex is absent
  - b. In pediatric patients, placement may not be necessary to achieve adequate ventilation
11. Considerations for nasopharyngeal airway:
  - a. Spontaneously breathing patients who require assistance in maintaining a patent airway (e.g., seizure patient, intoxication)
  - b. Unresponsive patients requiring BMV in whom an oropharyngeal airway cannot be inserted
12. Considerations for BMV:
  - a. Apnea or agonal respirations
  - b. Altered level of consciousness with hypoventilation or hypoxia despite maximal supplemental O<sub>2</sub>
13. Considerations for ETI:

Adults or Pediatrics 12 years or greater, or longer than the length-based resuscitation tape (e.g., Broselow Tape™)

  - a. Ineffective ventilation with BMV
  - b. Prolonged transport time
  - c. Risk for aspiration
  - d. Other determined need for advanced airway and SGA contraindicated
14. Considerations for SGA i-gel:
  - a. Adult and pediatric patients experiencing respiratory and/or cardiac arrest with ineffective BMV
  - b. Adult and pediatric patients experiencing respiratory arrest after initial BMV
  - c. Adult and pediatric patients experiencing cardiac arrest after initial priorities of the resuscitation are met including:
    - Shockable rhythms: defibrillation x2
    - Nonshockable rhythms: epinephrine x1 and reversible causes addressed prn
    - Traumatic arrest: hemorrhage control and transport initiated
  - d. Adult and pediatric patients after return of spontaneous circulation
  - e. Need for advanced airway and suspected difficult ETI based on assessment and anatomical features
  - f. Unsuccessful attempts (maximum three attempts) at ETI (with or without the use of a flexible introducer guide)
15. i-gel size is based on patient's ideal body weight ([MCG 1309](#)). Patients in between sizes may require changing sizes if the initial selection results in leak. Initial size should be based on the table below.

i-gel size selection		
Patient Weight	Patient Size	i-gel Size
2-5 kg	Neonate	1
5-12 kg	Infant	1.5

10-25 kg	Small Pediatric	2
25-35 kg	Large Pediatric	2.5
30-60 kg	Small Adult (short <5ft)	3
50-90 kg	Medium Adult (average 5-6ft)	4
90+ kg	Large Adult (tall >6ft)	5

16. Considerations for stoma intubation:  
Adult patients with obstruction unrelieved by suctioning and replacing inner cannula. For pediatric patients, and for adult patients in which a new tube cannot be placed, utilize bag mask ventilation via mouth (while covering the stoma) or stoma (if no chest rise with mask over mouth).
17. Verify endotracheal tube or rescue airway placement utilizing capnography. In case of device failure, use an End-tidal CO<sub>2</sub> detector. Document the method used for placement verification.
18. Additional confirmation of endotracheal tube placement shall include **all** of the following:
  - a. Bilateral lung sounds
  - b. Bilateral chest rise
  - c. Absent gastric sounds
  - d. Pulse oximetry
19. Continuously assess ventilation status and monitor capnography for all patients requiring BMV or advanced airway placement. Report capnography reading to the base hospital and document capnography reading as follows:
  - a. Every five minutes during transport
  - b. After any patient movement
  - c. With any change in patient condition
  - d. Upon transfer of care
20. Ventilation should be performed at the correct rate and tidal volume according to the age and size of the patient.
  - a. Rate should target the lower range of normal by age.
  - b. Tidal volumes should be 6-8ml/kg, which is approximated by squeezing the bag just sufficiently to observe chest rise.
  - c. Ventilation shall be regulated by use of a manometer and/or airflow meter device.
    - i. To ensure appropriate ventilatory pressure, a manometer at target pressures of <20 cmH<sub>2</sub>O is recommended, with pressure >40 cm most harmful. Pressures between 20-40 cm may be needed to ventilate some patients but with caution.
    - ii. To ensure appropriate ventilatory volume, use of an airflow meter device is recommended, especially when using a bag with >1000mL volume.

Approximate Ventilation Rates and Volumes		
Patient Size	Rate (bpm)	Tidal Volume (mL)
Neonate	40	30 (2 tbsp)
Infant	30	40-80 (3-5 tbsp)

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Small Pediatric	20-25	150-250
Large Pediatric	20-25	250-350
Small Adult (short <5ft)	10-12	400-450
Medium Adult (average 5-6ft)	10-12	450-500
Large Adult (tall >6ft)	10-12	500-550

21. Apply a viral filter during positive-pressure ventilation for patients with suspected communicable respiratory illness (e.g., COVID-19, influenza) and to all patients during periods of respiratory or emerging infectious disease surge (as supplies allow).

22. Sedation may be administered by paramedics as needed during transport of intubated patients. This sedation may only be administered after the patient is intubated and may not be administered to facilitate intubation.

Adult Dose:

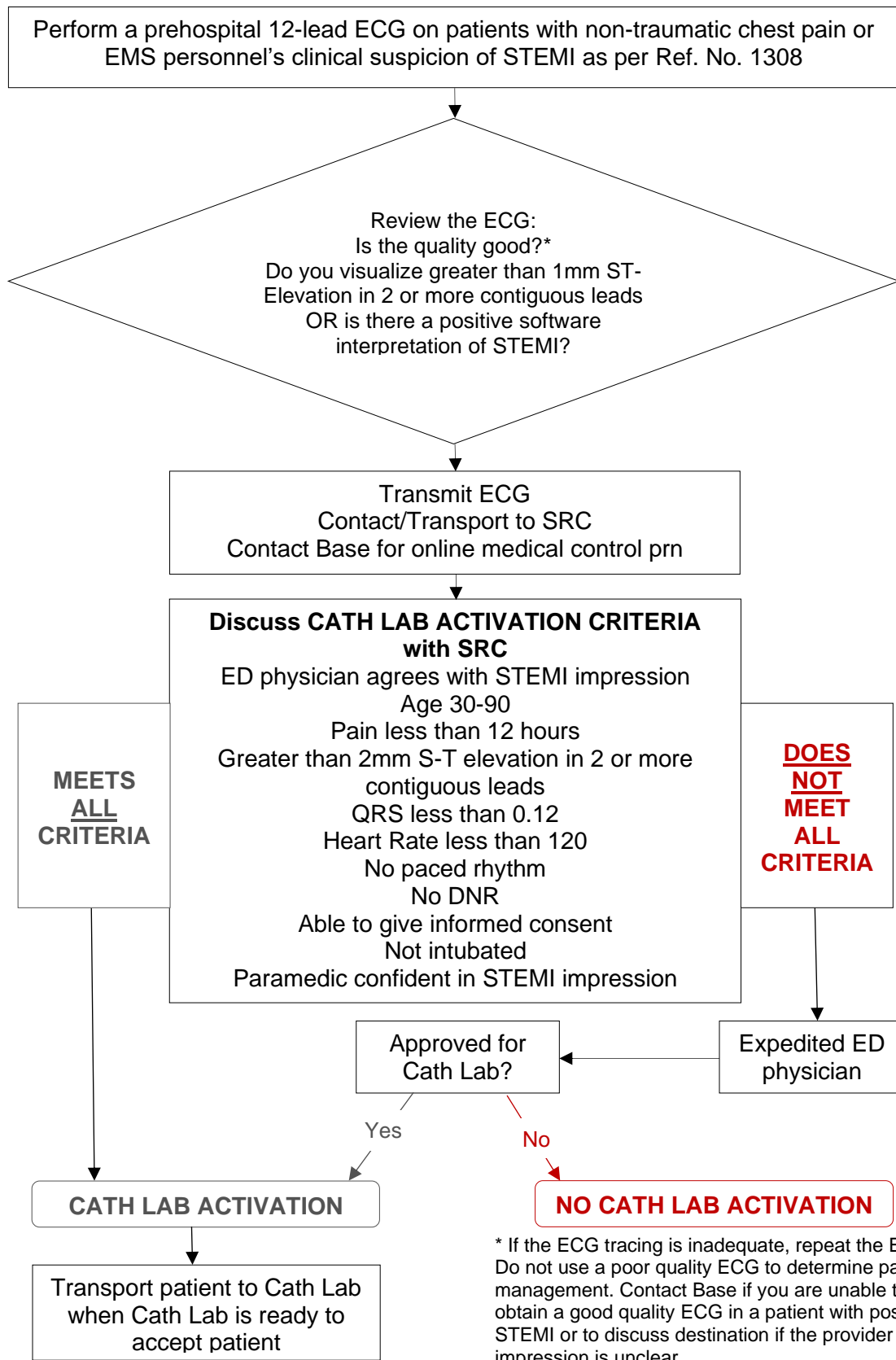
**Midazolam (5mg/mL) 5mg**, may repeat in 5 min x1, maximum total dose prior to Base contact 10mg

Pediatric Dose:

**Midazolam (5mg/mL) 0.1mg/kg** dose per *MCG 1309*, may repeat in 5 min prn x1, maximum 2 doses prior to Base contact

**Medical Control Guideline: ALGORITHM FOR CATH LAB ACTIVATION**

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## Medical Control Guideline: CAPNOGRAPHY

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**PURPOSE:** To describe use of capnography for 911 responses and for inter-facility transfers.

### DEFINITIONS:

**Capnography:** Analysis and recording of carbon dioxide (CO<sub>2</sub>) concentrations in respiratory gases via continuous waveform.

**Capnometry:** Measurement of the amount of carbon dioxide in exhaled air. This gives a specific value for the end-tidal CO<sub>2</sub> measurement.

**Colorimetric CO<sub>2</sub> device:** Device that changes color due to a chemical reaction in the presence of CO<sub>2</sub>, which can be used to detect CO<sub>2</sub> in exhaled air in order to confirm placement of an advanced airway.

**End-Tidal CO<sub>2</sub> (ETCO<sub>2</sub>):** The amount of carbon dioxide measured at the end of exhalation.

### PRINCIPLES:

1. Ventilation is an active process, which is assessed with end-tidal CO<sub>2</sub> measurement. End-tidal CO<sub>2</sub> measurement is an indication of air movement in and out of the lungs. The normal value of exhaled CO<sub>2</sub> is 35-45mmHg.
2. Oxygenation is a passive process, which occurs by diffusion of oxygen across the alveolar membrane into the blood. The amount of oxygen available in the bloodstream is assessed with pulse oximetry.
3. Capnography provides both a specific value for the end-tidal CO<sub>2</sub> measurement and a continuous waveform representing the amount of CO<sub>2</sub> in the exhaled air. A normal capnography waveform is square, with a slight upslope to the plateau phase during exhalation. (See figures below) The height of the waveform at its peak corresponds to the ETCO<sub>2</sub>.
4. Capnography is necessary to monitor ventilation. For patients requiring positive pressure ventilation, capnography is most accurate with proper mask seal (two-hand mask hold for adults during bag-mask ventilation) or with an advanced airway.
5. Capnography can also be applied via a nasal cannula device to measure end-tidal CO<sub>2</sub> in the spontaneously breathing patient. It is useful to monitor for hypoventilation, in patients who are sedated either due to ingestion of substances or treatment with medication with sedative properties such as midazolam or opioids. In a patient with suspected sepsis, an ETCO<sub>2</sub> <25mmHg further supports this provider impression.
6. Capnography is standard of care for confirmation of advanced airway placement. Unlike simple colorimetric devices, capnography is also useful to monitor the airway position over time, for ventilation management, and for early detection of return of spontaneous circulation (ROSC) in patients in cardiac arrest.

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7. Capnography is the most reliable way to immediately confirm advanced airway placement. Capnography provides an instantaneous measurement of the amount of CO<sub>2</sub> in the exhaled air and absence of waveform and/or values <10mmHg suggest possible advanced airway placement. However, patients in cardiac arrest or profound shock may also have end-tidal CO<sub>2</sub> values <10 despite proper airway placement.
8. Capnography provides the most reliable way to continuously monitor advanced airway position. The waveform provides a continuous assessment of ventilation over time. A normal waveform which becomes suddenly absent suggests dislodgement and requires clinical confirmation.
9. The value of exhaled CO<sub>2</sub> is affected by ventilation (effectiveness of CO<sub>2</sub> elimination), perfusion (transportation of CO<sub>2</sub> in the body) and metabolism (production of CO<sub>2</sub> via cellular metabolism). In addition to the end-tidal CO<sub>2</sub> value, the ventilation rate as well as the size and shape of the capnograph must be used to interpret the results.
10. Decreased perfusion will reduce the blood flow to the tissues, decreasing offload of CO<sub>2</sub> from the lungs. Therefore, patients in shock and patients in cardiac arrest will generally have reduced end-tidal CO<sub>2</sub> values.
11. A sudden increase in perfusion will cause a sudden rise in end-tidal CO<sub>2</sub> values and is a reliable indicator of ROSC. It is common to have an elevated ETCO<sub>2</sub> reading after ROSC. Hyperventilation is harmful and should not be done to attempt to normalize the ETCO<sub>2</sub>.
12. Ventilation can have varied effect on CO<sub>2</sub> measurement. Hyperventilation will reduce end-tidal CO<sub>2</sub> by increasing offload from the lungs. Disorders of ventilation that reduce CO<sub>2</sub> elimination (e.g., COPD), will cause CO<sub>2</sub> to build up in the body, increasing the measured value once ventilation is restored. Generally, hypoventilation will increase measured end-tidal CO<sub>2</sub> values by decreasing offload from the lungs. However, in patients with decreased tidal volumes, hypoventilation can also reduce end-tidal CO<sub>2</sub>, because of the relative increase in dead space.
15. End-tidal CO<sub>2</sub> can be detected using a colorimetric device (ETCO<sub>2</sub> detector). These devices provide limited information about ETCO<sub>2</sub> as compared to capnography. Colorimetric devices do not provide continuous measurement of the value of CO<sub>2</sub> in the exhaled air and cannot be used in ongoing monitoring. Colorimetric devices should only be used for confirmation of endotracheal tube placement if capnography is unavailable due to equipment failure.

**GUIDELINES:**

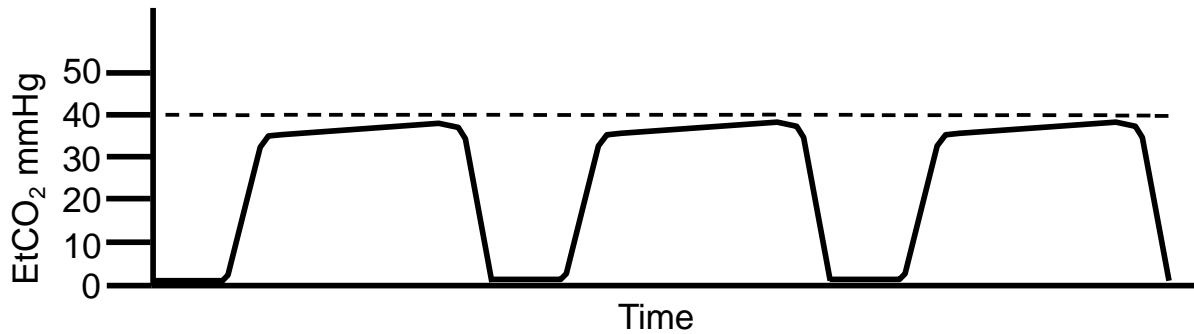
1. Capnography shall be used for ALL patients receiving positive-pressure ventilation (BMV or advanced airway). Utilize the capnography waveform to assess the patient's ventilation and perfusion status. Refer to the figures below for examples of typical waveform tracings.
2. Always attach the capnography device to the monitor first and wait for the capnography display to appear prior to applying the device to the patient. This zeros the device to ensure an accurate reading.
3. Apply the capnography device immediately upon initiating any positive-pressure ventilation, or as soon as feasible.



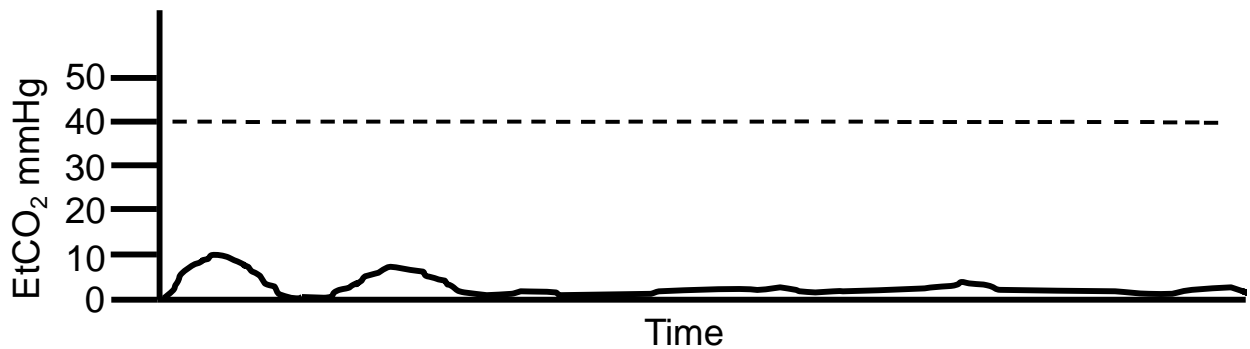
4. During bag-mask-ventilation, maintain a continuous seal in order to obtain accurate capnography readings.
5. When an advanced airway is placed, the capnography device shall be applied/re-applied immediately to confirm airway placement, along with assessing bilateral breath sounds and absence of gastric sounds.
6. Visualization of a normally shaped waveform with a normal or elevated value confirms placement. Extremely low values (<10mmHg) without the typical waveform implies esophageal placement and the endotracheal tube should be removed. For patients in shock or cardiac arrest, the value (and height of the waveform) will likely be reduced but the shape of the waveform should be normal.
7. Continuously monitor the waveform, report the capnography reading to the base hospital and document capnography reading on the patient care record as follows:
  - a. Immediately after placement of an advanced airway
  - b. With any change in patient condition
  - c. After any patient movement
  - d. Every five minutes during transport
  - e. Upon transfer of care
8. For patients in cardiac arrest, continuously monitor capnography during resuscitation. A sudden rise in  $\text{ETCO}_2$ , along with an organized rhythm, is a reliable sign of ROSC and should prompt a pulse check. Do not hyperventilate regardless of the  $\text{ETCO}_2$  value; elevated values will normalize with proper ventilation. A drop in  $\text{ETCO}_2$  below normal can signify progressive hypotension or re-arrest.
9. Consider use of capnography via nasal cannula, if available, in spontaneously ventilating patients who are:
  - a. Sedated due to illicit substance ingestion
  - b. Treated with medications with sedative properties (e.g., midazolam or opioids)
  - c. In severe respiratory distress
10. In spontaneously breathing patients, monitor for significant hypoventilation or apnea as an indication to begin assisted ventilation. A “shark-fin” waveform on  $\text{EtCO}_2$  monitoring indicates bronchospasm; treatment with albuterol is indicated.
11. During positive-pressure ventilation, if a “shark-fin” pattern and/or an elevating  $\text{EtCO}_2$  waveform (“breath stacking”) is visualized, decrease ventilation rate to avoid increases in intrathoracic pressure which can lead to decrease in venous blood return to the heart and cardiopulmonary arrest.

Capnography Waveforms[1200 Table of Contents](#)

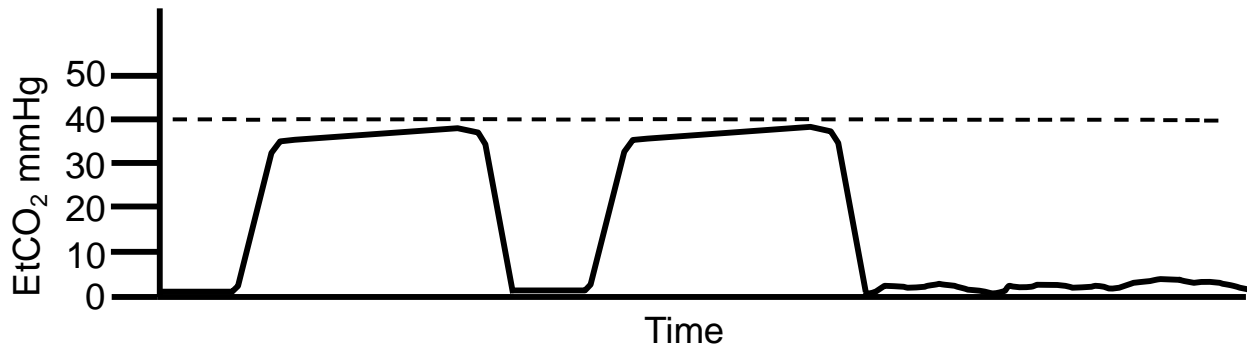
Normal shape of the capnograph (Normal waveform is depicted below)



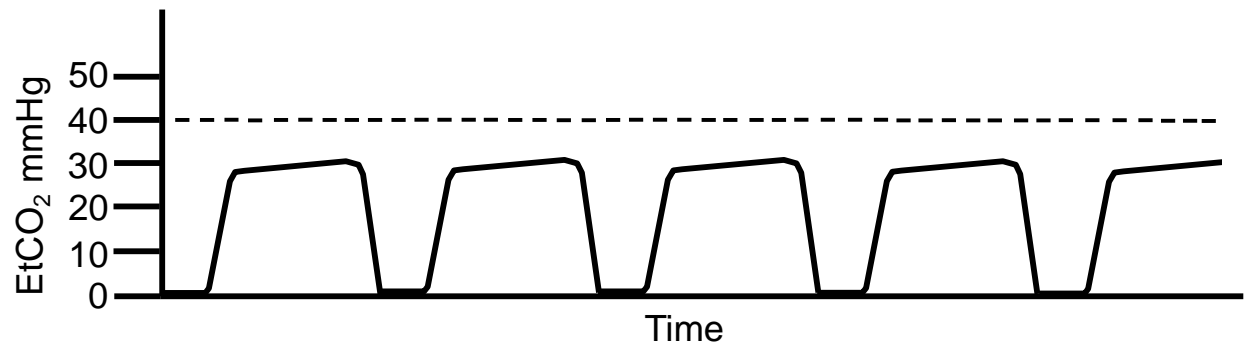
Esophageal Intubation (Low values <10 and irregular waveform or flat line)



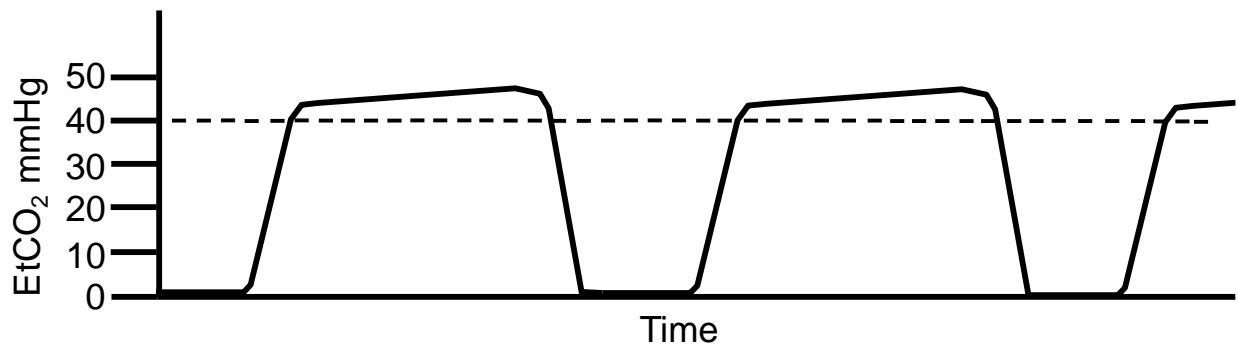
Obstructed or Dislodged Endotracheal Tube (Sudden loss of normal waveform followed by low irregular waveform or flat line)



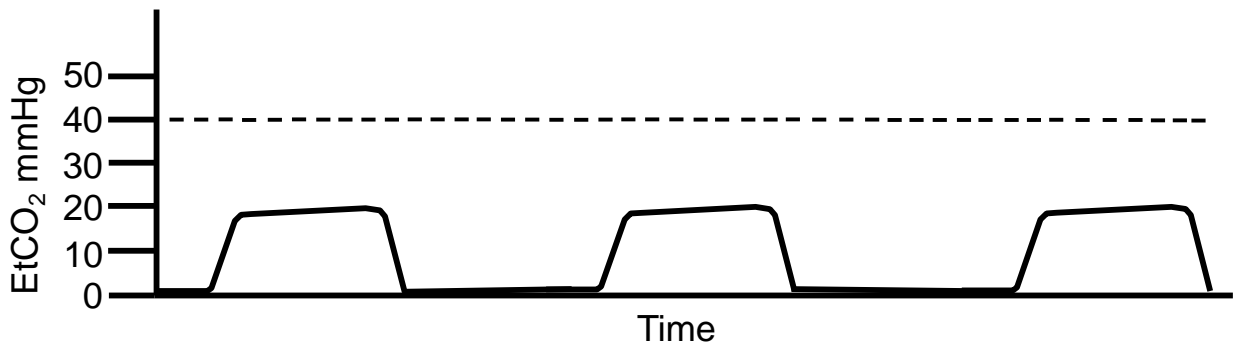
Hyperventilation (Normal waveform with reduced height, <35mmHg, and high ventilation rate)



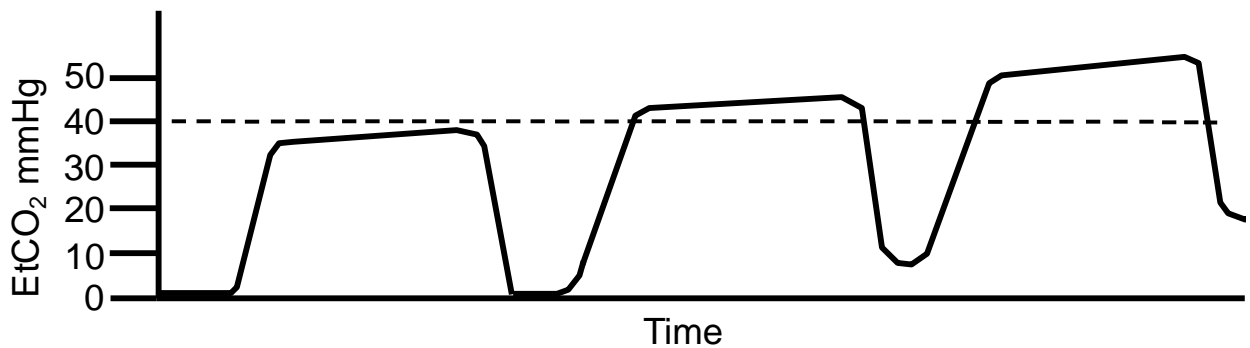
Hypoventilation / Bradypnea (Normal waveform with increased height, >45mmHg)



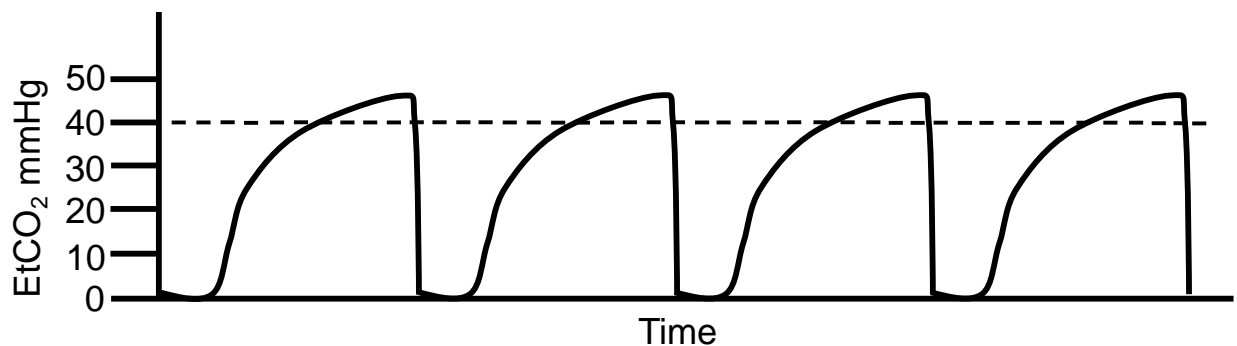
Hypoventilation / Low tidal volumes (Normal waveform with reduced height, <35mmHg, and slow ventilation rate; a similar reduced height waveform can also be seen with shock – see progressive hypotension below)



Air Trapping / Breath Stacking (Box waveforms that show increasing values with each successive breath)

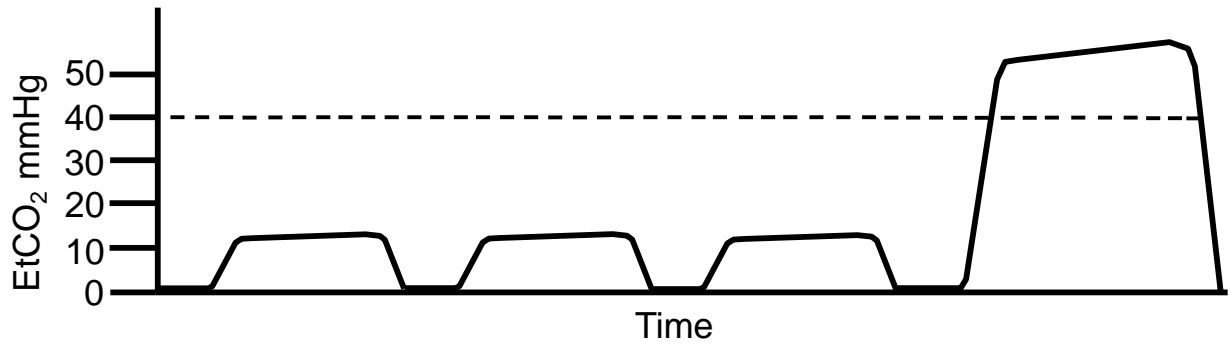


Bronchospasm ("Shark Fin Pattern")

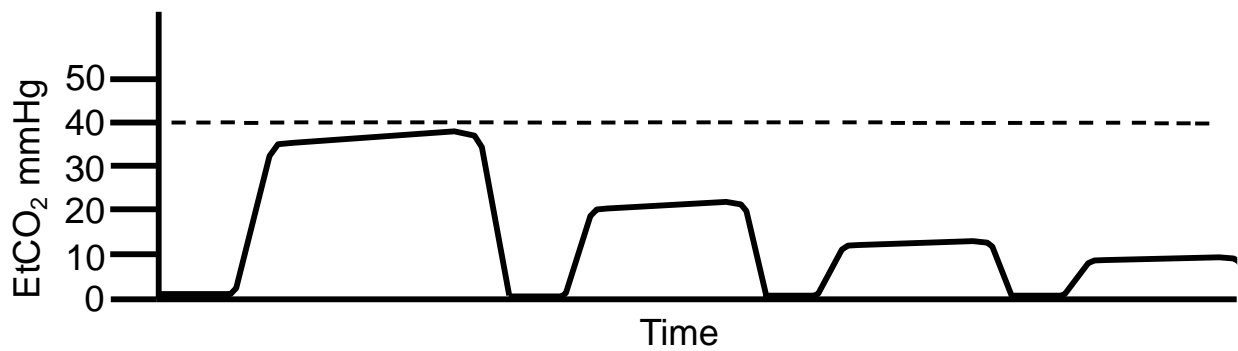


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Return of Spontaneous Circulation (Sudden increase in values in a patient in cardiac arrest)



Progressive Hypotension or Re-arrest (Progressive decrease in values with each successive breath)



**Medical Control Guideline: CARE OF THE PATIENT WITH AGITATION**

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**DEFINITIONS:**

**Agitation:** A hyper-aroused state (ranging in severity from anxious and cooperative to violent and combative) in which the individual exhibits excessive, repeated, and purposeless motor or verbal behaviors (e.g., pacing, fidgeting, clenching fists or teeth, prolonged staring, picking at clothing or skin, responding to internal stimuli such as hallucinations, threatening or carrying out violent acts).

**Agitated Delirium:** A state of agitation, excitability, and aggression associated with stimulant abuse, substance abuse and/or psychiatric disorders which leads to physiologic changes, such as hypertension, hyperthermia, diaphoresis, and cardiovascular instability. Also commonly referred to as “Excited Delirium”.

**Delirium:** An acute change in mental state due to an underlying medical condition characterized by confusion, disorientation, reduced awareness of the environment, and disordered thinking.

**Autism Spectrum Disorder:** A disorder diagnosed in childhood, but continuing into adulthood, with a wide range of severity involving difficulty with social communication and interaction, repetitive patterns of behavior, and narrowed interests or activities. Some patients have very little ability to communicate, or comprehend verbal and nonverbal communication, while others may communicate and are intelligent. Individuals are often sensitive (fearful/reactive) to environmental stimulation and depend on routines.

**Bipolar Disorder:** An episodic illness in which patients experience periods of elation or “high” mood (mania or hypomania), and periods of depression. Manic episodes are characterized by decreased sleep, lots of energy, rapid speech and ideas, impulsive and reckless decision-making (e.g., buying expensive objects, quitting a job, going on sudden unplanned trips) and an inflated view of oneself (grandiosity).

**Delusion:** A false belief that is firmly held despite objective and obvious contradictory proof or evidence. Delusions can be dangerous when the patient has a fixed idea that causes them to act violently.

**Dementia:** An illness generally diagnosed in older adults, associated with progressive cognitive decline including memory loss and an inability to carry out tasks or basic functions (i.e., driving, using a phone, dressing/grooming). The condition ranges in severity with some patients having little ability to speak, communicate, to those with less severe forms may be able to communicate well and manage their own care needs.

**Major Depressive Disorder:** An episodic illness in which a person feels profound sadness, a lack of enjoyment, and other symptoms that may include impairments in sleep, energy, appetite, motivation, concentration, and socialization. These patients often feel hopeless and are especially likely to think about or try to commit suicide.

**Disorganized behaviors:** A set of behaviors or actions that do not appear to accomplish anything meaningful (e.g., laughing to self, lying motionless and unresponsive to people around them, pacing or repeatedly sitting/standing without any clear reason, staring at the wall, or object with a blank expression). They can be seen with a variety of conditions including psychosis, autism, dementia, and mania.

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**Disorganized Speech:** A speech pattern that is extremely difficult to follow, such as garbled or non-sense speech, telling a story that jumps illogically from one topic to the next, making up new words, or highly repetitive speech (e.g., muttering to self with repetitive phrases).

**Hallucinations:** Patients experience sensing things that other people cannot hear, see, or smell (infrequent). Most commonly this means a patient is “hearing voices” or “seeing things”. This can be dangerous if the patient is experiencing hallucinations that command them to harm themselves, other people, or carry out dangerous acts. Hallucinations can be a symptom of psychosis or drug intoxication, but can be associated with other conditions like mania, depression, dementia and delirium.

**Iatrogenic escalation:** Escalation of a patient’s agitated state caused by EMS / healthcare personnel either inadvertently, or deliberately, by acting in ways that the patient does not expect or desire (e.g., restricting a patient’s freedom to move (cornering the patient), taking away patient belongings or invalidating, confronting, arguing with, or intimidating a patient).

**Intellectual Disability:** A range of disability from mild to severe, characterized by significant limitations in intellectual functioning (learning, reasoning, problem solving, planning) and adaptive behavior (everyday social skills like communication, and practical skills like living independently).

**Paranoia:** A state of suspicion or mistrust of people or institutions, such as hospitals/healthcare personnel, law enforcement or security.

**Psychosis:** A state where a person loses contact with reality. Common diagnoses or terms of psychotic illness include: “Schizophrenia”, “Psychotic disorder”, “Acute psychotic episode”, “Schizoaffective disorder” (a combination of schizophrenia and bipolar disorder), “delusional disorder”. The symptoms of a psychotic illness are commonly: hallucinations, delusions, paranoia and/or disorganized behaviors and speech.

**Self-injurious behaviors:** Behaviors or violent acts directed at oneself, occurring in many psychiatric disorders which may include depression or bipolar disorder, psychosis, drug abuse, and personality disorder (patients are often trying to distract themselves from extreme emotional pain they feel). (Also referred to as: Non-suicidal self-injury)

## **PRINCIPLES:**

1. Psychiatric emergencies, including those related to mental health and substance abuse, are medical emergencies, and as such are best treated by EMS personnel who are trained, equipped, and experienced to evaluate and manage medical patients.
2. A proportion of prehospital psychiatric emergencies involve acute behavioral agitation, violence, threats of harm to self or others, or criminal activity. Such patients are best managed by an EMS and law enforcement (LE) co-response.
3. The overarching goal in management of acute behavioral agitation is to help the patient regain control over their behaviors so that they can participate in their evaluation and treatment.
4. EMS personnel should maintain the patient’s dignity to the extent possible, including use of the least restrictive method of restraint or intervention to facilitate clinical patient assessment, medically indicated treatment, and safe transport to a hospital.

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5. Agitation has varying presentations on a spectrum, ranging in severity from anxious and cooperative to violent and combative. The patient may not have the ability to understand the situation or the dangers of their behavior or comply with directions because they lack insight and/or self-awareness.
6. The potential causes of agitation are numerous and varied and can include medical and/or psychiatric and/or substance abuse conditions. Agitation can also be unrelated to a medical/psychiatric condition, in such cases agitation may be used by a person “instrumentally” as a means of achieving a goal.
7. Physical restraint and pharmacologic management of agitation when providing EMS care are primarily indicated to protect a patient, the public, and other EMS personnel from injury.
8. The decision for EMS personnel to utilize medication management to treat agitation is a critical health care decision. (Note: “chemical sedation” or “chemical restraints” are not preferred terms)
9. Persons who lack decision-making capacity, or unaccompanied minors, are assessed and treated with implied consent ([Ref. No. 834 – Patient Refusal of Treatment/Transport and Treat and Release at Scene](#)).
10. LE officers, whenever available, should be involved in cases in which a patient poses a threat to themselves, the public, and/or EMS personnel.

**GUIDELINES:**

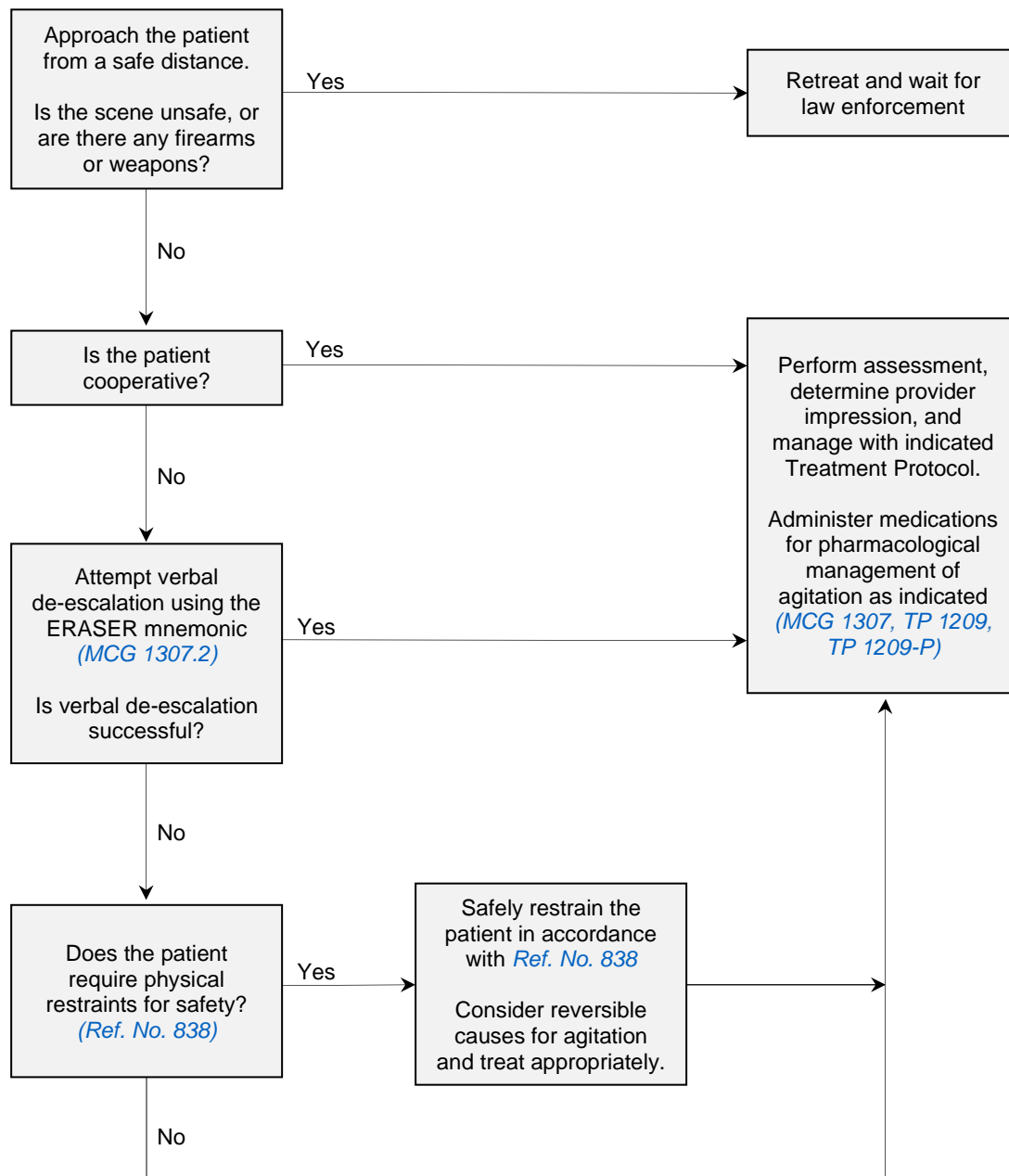
1. Initial Approach to Scene Safety:
  - A. Evaluation of the agitated patient should start from a safe and sensible distance (See [MCGs 1307.1](#) and [1307.2](#)).
  - B. If EMS personnel are in danger of harm, they should retreat to a safe location and await the arrival of LE.
    - i. Safety is paramount and at no time should EMS personnel jeopardize their safety by engaging with an agitated patient unless they feel that they have the knowledge, tools, and skills to do so.
  - C. The first EMS and/or LE responders should organize their approach by identifying a lead who is responsible for communicating with the patient and coordinating the actions of the rest of the team.
  - D. If there is no safe option for retreat, EMS personnel who are being physically attacked may defend themselves as permitted by local law. EMS personnel should not show aggression or retaliate against the patient.
  - E. The goals of EMS care are to determine whether the patient is a candidate for verbal de-escalation (the preferred first step in managing agitation), if physical restraint is indicated, if pharmacologic intervention is indicated, and ultimately to provide an assessment for acute medical and psychiatric conditions.
  - F. The flowchart in [MCG 1307.1](#) describes the initial approach to the scene of an agitated patient.

2. Verbal De-escalation:
  - A. All EMS personnel shall be trained, capable, and competent in verbal de-escalation techniques, (e.g., using the “ERASER” mnemonic, see [MCG 1307.2](#)).
  - B. The use of appropriate de-escalation techniques should take precedence and be attempted prior to physical restraint and/or administration of pharmacologic management, whenever possible and clinically appropriate.
  - C. EMS personnel should not directly question or confront a patient’s psychotic symptoms (e.g., hallucinations, delusions, paranoia, or behaviors) as it may worsen the patient’s agitation.
  - D. EMS personnel should remain self-aware and not allow themselves to react to provocative patients because this can lead to iatrogenic escalation of agitation.
3. Assessment of Agitation:
  - A. EMS personnel shall attempt to perform an appropriate patient assessment to identify and manage clinical conditions that may be contributing to a patient’s agitated, combative, or violent behavior. The table in [MCG 1307.3](#) describes potential clinical scenarios where a patient presents with agitation and provides guidance on use of verbal de-escalation.
4. Pharmacologic intervention may be required for the safety of the patient, EMS personnel and/or public when verbal de-escalation techniques are ineffective ([TP 1209](#) or [1209-P, Behavioral/Psychiatric Crisis](#)).
5. Use of Restraints:
  - A. If determined that the patient is not an appropriate candidate for verbal de-escalation (i.e., after failed attempts at verbal de-escalation, or acute medical situation requires immediate intervention) or when managing a patient who re-escalates to agitated behavior after verbal de-escalation, physical restraint may be required in conjunction with pharmacologic management ([Ref. No. 838, Application of Patient Restraints](#)).
6. Co-Response with Law Enforcement:
  - A. At all times, EMS personnel should act as an advocate for the safety, medical monitoring, and clinical care of the patient.
  - B. In some situations, it may be necessary for LE to apply restraint techniques or interventions (e.g., handcuffs or flex cuffs, herein referred to as LE restraint).
    - a. Patients requiring ongoing care and/or EMS transport that are in LE restraints shall be managed in accordance with [Ref. No. 838, Application of Patient Restraints](#), with preference for discontinuing LE restraint in favor of EMS approved restraint interventions when appropriate.
  - C. Patients who are in LE custody or who are under arrest must always have a LE officer present or immediately available during EMS transport.



**Medical Control Guideline: FLOWCHART FOR INITIAL APPROACH TO SCENE SAFETY**

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**Medical Control Guideline: VERBAL DE-ESCALATION (ERASER MNEMONIC)**

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<b>E</b>	<b>Eyeball the patient</b>	Evaluate the patient from a safe distance. Survey the scene and ask about weapons or other features that make the scene unsafe. Decide if Law Enforcement (LE) is necessary (if in doubt err on the side of caution). Are there signs that the patient will not respond to verbal de-escalation?
<b>R</b>	<b>Respect the Patient's Space</b>	Patients may escalate when there is intrusion into the personal space. EMS personnel should maintain a respectful distance while being aware of escape routes should the patient become violent.
<b>A</b>	<b>A single member of EMS personnel does the talking and builds rapport</b>	Establishing rapport is critical. With multiple EMS personnel on the scene, a single individual should be charged with talking to the patient. The EMS personnel charged with this task must remain neutral, and not become "emotionally involved" in the patient (such as becoming angry, irritated, or frightened of the patient). <ul style="list-style-type: none"> <li>• State your name and position, offer your help.</li> <li>• Be genuine and honest.</li> <li>• Use a calm, reassuring, and helpful voice, and a neutral expression. Be concise in your questions, statements, or instructions.</li> <li>• Give the patient time to respond.</li> </ul>
<b>S</b>	<b>Sensible Listening</b>	Often patients want to be heard, and people who are upset or confused generally want a way to resolve the issue. Help them find a "way out" if it is reasonable. Try to understand what the patient wants. Show a willingness to calmly listen to the patient, without necessarily reacting to demands. This step can result in re-escalation of agitation if EMS personnel becomes emotionally reactive, angry, frightened, or frustrated. Other EMS personnel may need to step in and continue if this happens.
<b>E</b>	<b>Establish expectations and set boundaries</b>	Boundaries should be set with the patient about behavior that will not be tolerated, consequences of actions, and what the patient is likely to expect. It is important to be clear but avoid using language that can sound intimidating or threatening. <ul style="list-style-type: none"> <li>• For example, "You may not threaten people, it is our job to make sure everyone stays safe." "We need to make sure that you are ok, can we check your vitals and ask you some questions." "Unfortunately, we are worried that you cannot make informed medical decisions because you are intoxicated. We are going to take you to the hospital so you can be treated for your injuries."</li> <li>• Give specific instructions such as "can you please sit down so we can talk", "can you put down your bag". Avoid generic directives like "calm down" or "relax".</li> <li>• Provide a clear warning to the patient about the need to ensure the safety of both the patient and EMS personnel and public. Warn that restraint, or medications will be given as necessary, but as a last resort.</li> </ul>
<b>R</b>	<b>Reasonable choices are given to the patient</b>	By retaining some degree of control, many patients will comply with direction if given reasonable choices. For example, EMS personnel could say, "would you like to walk over to the ambulance and sit on the bed inside, or do you prefer we bring the bed over here for you to sit on?"

**Medical Control Guideline: COMMON ETIOLOGIES OF AGITATION, FIELD PRESENTATION, LIKELIHOOD OF VERBAL DE-ESCALATION**

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	Etiology / Cause	General Description or Examples	Candidate for Verbal De-escalation?
1	Autism spectrum disorder	History of such provided by bystanders/collaterals; repetitive behaviors, odd or highly limited or immature speech, awkward social interaction / communication, inflexibility of being out of a routine, hypersensitive to external stimulation.	Yes. High likelihood of success; use extensively
2	Intellectual disability	Varied presentation, may have childlike speech and demeanor, may have caretakers despite being an adult, some intellectual disabilities co-occur with reliable physical findings / stigmata (e.g., Down syndrome).	Yes. High likelihood of success; use extensively
3	Emotional dysregulation	Can occur with many conditions such as bipolar disorder, depression, dementia, autism, or acute stress or trauma. Free from altered mental status; highly emotional, potentially angry, frightened, or stressed beyond ability to cope.	Yes. High likelihood of success; use extensively
4	Intoxication - Alcohol	Odor of alcoholic beverage, unstable gait / balance, slurred speech, family/bystander report of alcohol ingestion, emotional swings, relatively acute onset	Consider a short trial
5	Intoxication - stimulants / amphetamines	Tachycardia, mydriasis, hypertension, psychosis, delusions or paranoia, hallucinations, sleeplessness, hyperactivity, or drug paraphernalia found on scene	Consider a short trial
6	Traumatic brain injury	Physical findings or history consistent with trauma, other findings of injury, repetitive questions, grogginess or confusion.	Consider a short trial
7	Seizure / post-ictus	Oral trauma, bladder or bowel incontinence, altered mental status, may improve over time without intervention	Consider a short trial
8	Cerebral Vascular Accident (CVA)	Acute onset, loss of speech, pupillary changes, hemiparesis, confusion, known risk factors for CVA, hypertension	Consider a short trial
9	Dementia	Typically found in older age patients, impaired memory (especially short-term memory), impaired ability to make plans or carry out tasks.	Consider a short trial
10	Psychosis	Paranoia, delusions, hallucinations, disorganized speech or behaviors, typically free from altered mental status	Consider, may be highly effective in certain cases
11	Acute Mania (Bipolar Disorder)	Exhibiting euphoric mood or irritability, elevated sense of oneself / grandiosity, rapid speech, impulsive and risky behaviors or decision making	Consider, may be highly effective in certain cases
12	Instrumental Violence	Agitation used as a tool for achieving a goal; no confusion or underlying medical or psychiatric cause, be aware of persons engaged in potential criminal behavior or in police custody	Consider a short trial; involve law enforcement
13	Delirium	Altered mental status and agitation with waxing and waning course; confusion; poor attention; may be disoriented	Consider potential causes, refer to protocol (TP 1229); if verbal de-escalation ineffective, consider medication administration (TP 1209)
14	Agitated Delirium	Highly agitated, impervious to pain, unresponsive to verbal commands, unusual superhuman strength / lack of fatiguing, often sheds clothing due to hyperthermia, diaphoretic, combative	No, pharmacologic management and early intervention important. See TP 1208
15	Hypoxia	Altered mental status, changes in skin color, low pulse oximetry readings, respiratory distress	No, treat underlying cause
16	Hypoglycemia	Diaphoresis, pale pallor, confusion, ataxia, declining mental status	No, treat underlying cause

**Medical Control Guideline: CARDIAC MONITORING / 12-LEAD ECG**

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**PRINCIPLES:**

1. Continuous cardiac monitoring is a key component of a thorough patient assessment and treatment in the prehospital setting.
2. Continuous observation of a patient's cardiac rhythm ensures early identification of potentially lethal dysrhythmias and provides other information about the patient's condition to guide treatment and destination decisions.
3. The 12-lead electrocardiogram (ECG) in the prehospital care setting plays a key role in identifying STEMI and determining the most appropriate treatment and destination for patients with Chest Pain - Suspected Cardiac and STEMI.
4. Prehospital identification and communication of ST-elevation myocardial infarction (STEMI) reduces critical "door-to-intervention" times for STEMI patients and saves lives.
5. When a 12-lead ECG is indicated, it should be obtained as early as possible in the assessment.
6. A good quality 12-lead ECG is a key component of a thorough patient assessment. A good quality 12-lead ECG includes the presence of all 12-leads on the ECG tracing and absence of artifacts and/or wavy baseline.
7. Complete and accurate ECG documentation is essential for patient care and quality improvement purposes.

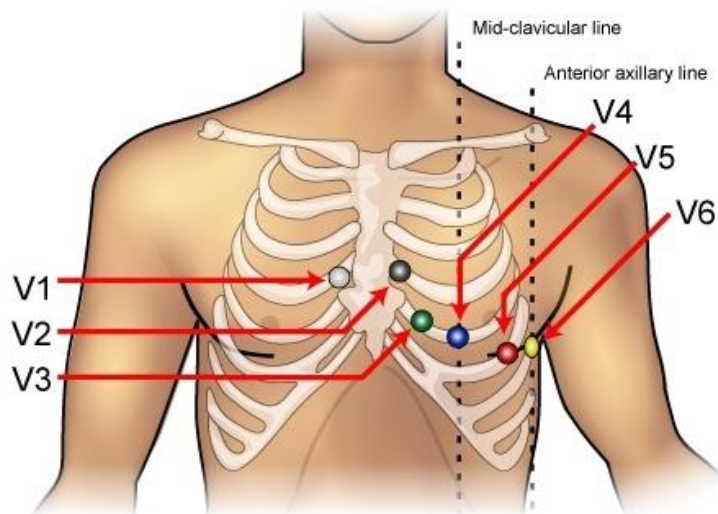
**GUIDELINES:**

1. Once ongoing cardiac monitoring is determined to be necessary, observe the rhythm continuously and leave the monitor in place until care has been transferred to appropriate hospital personnel or as directed by the base hospital.
2. Document the ECG interpretation on the appropriate section in the EMS Report Form or Electronic Patient Care Report (ePCR). If a dysrhythmia is identified, provide an ECG strip labeled with the patient's name, sequence number, date and time to the receiving facility (in either paper or electronic format) as part of the patient's prehospital medical record. Retain a copy per the provider agency's departmental policy.
3. Perform a prehospital 12-lead ECG on patients with any of the following:
  - a. Chest pain or discomfort in all patients  $\geq 35$  years or any suspected cardiac etiology
  - b. Dysrhythmia (in order to capture rhythm and possible etiology)
  - c. Syncope in all patients  $\geq 35$  years or any suspected cardiac etiology
  - d. Return of spontaneous circulation (ROSC) after a cardiac arrest
  - e. Other symptoms with paramedic suspicion of cardiac etiology (e.g., non-traumatic shoulder, jaw or upper arm pain, shortness of breath, epigastric pain)

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- f. Vague or unexplained symptoms (e.g. general weakness, lightheadedness, nausea, malaise) in patients at high risk of acute cardiac ischemia (e.g. coronary artery disease, myocardial infarction, elderly diabetic patients, stroke, peripheral vascular disease)
4. To obtain a good quality ECG:
  - a. Minimize electrode exposure to air prior to use; ideally they should be removed from the packaging immediately before application
  - b. Ensure that all electrodes are in good contact with the patient's skin (wipe sweat with dry towel before applying and shave hair if necessary)
  - c. Place electrodes according to the diagram in order to observe all aspects of the left heart
  - d. For female patients or obese patients of either gender, electrodes should be attached in the same anatomic location; this may require placement on the breast if lifting the breast places the electrodes too low in the chest
  - e. Attach the limb leads to the extremities (distal to the deltoid and to the inguinal line)
  - f. Stabilize the ECG fan-out (i.e., cable management / junction point) on the patient
  - g. Lay the patient supine or as recumbent as possible
  - h. Instruct the patient relax, remain still, and close their eyes prior to acquisition
  - i. Obtain the ECG prior to transport so that the ambulance is not in motion
  - j. Leave the electrodes and leads in place for continuous monitoring and repeat ECGs
5. Treat symptoms and rhythms identified according to applicable treatment protocols.
6. Maintain the patient's privacy and dignity while performing the 12-lead ECG.
7. For patients in which at least two of the following are true:
  - a. Paramedic interpretation of the ECG is STEMI. The 12-lead ECG tracing has greater than 1mm ST-segment elevation in 2 or more contiguous leads
  - b. The software interpretation indicates "**ST Elevation** Acute MI" or "STEMI".
  - c. The patient's clinical condition is consistent with STEMI

Transmit the ECG tracing to the SRC receiving the patient. Discuss with receiving SRC ED physician. Transport the patient to the closest SRC.
8. For software interpretations of STEMI for which the paramedic disagrees, due to the patient's clinical presentation and paramedic ECG interpretation, paramedics should contact the Base Hospital for online medical direction, to discuss destination decision.
9. Report to the SRC physician and/or Base Hospital shall include the software interpretation, paramedic interpretation, any quality issues, the rate on the ECG, whether the QRS is wide or narrow, and whether there is a paced rhythm. Document this information on the appropriate prehospital care record.
10. Provide prehospital 12-lead ECGs that are labeled with the patient's name, sequence number, date and time to the receiving facility (in either paper or electronic format) as part of the patient's prehospital medical record.



## Medical Control Guideline: COLOR CODE DRUG DOSES



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### PRINCIPLES:

1. Correct dosing of medications based on weight in kilograms is a safety concern for delivery of medications to children and adults in the prehospital setting.
2. To optimize safety in dosing medications for children and adults, a standard formulary has been created. This **Color Code Drug Doses** medical control guideline pre-calculates all doses based on kilogram weight for children and an adult dose including maximum dose is delineated.
3. EMS provider agencies shall procure medications and stock approved Assessment and ALS Units in accordance with the drug formulation specified in this medical control guideline.
4. The Color Code Drug Doses and the Treatment Protocols shall be used to determine drug doses.

### GUIDELINES:

1. EMS providers shall utilize a length-based resuscitation tape (i.e., Broselow™) to determine weight in kilograms and color code of children less than or equal to 14 years of age.
2. EMS providers shall use this guideline to determine dose of medication for children 3 to 36 kilograms. Documentation of dose will be in mgs and in mLs.
3. EMS providers contacting the base hospital shall report and document the appropriate color code and weight in kilograms utilizing a length-based resuscitation tape (i.e., Broselow™).
4. Base hospital personnel shall use this guideline to order dose of medication for children 3 to 36 kilograms; all doses will be given in mg and mLs.
5. Adult dosing will be used for children who are measured to be longer than the length-based resuscitation tape.





## DRUG FORMULATIONS:

MEDICATION	FORMULATION	DOSAGE	Maximum Single Dose
Adenosine	3mg/mL	0.1mg/kg Repeat dose 0.2mg/kg	12mg
Albuterol	2.5mg/3mL	2.5mg <4 years; 5mg ≥4 years	5mg
Albuterol MDI	90 mcg/puff	2 puffs <4 years; 4 puffs ≥4 years	360 mcg
Amiodarone	50mg/mL	5mg/kg	300mg
Atropine	0.1mg/mL	0.02mg/kg	1mg (adult) 0.5mg (pediatric)
Calcium Chloride (dilute 1:1 with NS if <1year)	100mg/mL	20mg/kg	1gm
Dextrose 10%	0.1gm/mL	5mL/kg*	250mL
≤24kg: Dextrose 10% 5mL/kg IV/IO in 1mL/kg increments, reassess for clinical improvement after every 1mL/kg. Administer slow IVP. May repeat as needed, maximum total dose 5mL/kg. Recheck glucose prn after 3mL/kg infused			
>24 kg: Dextrose 10% administer 125mL IV/IO and reassess, continue infusion as needed with maximum dose of 5mL/kg			
Diphenhydramine	50mg/mL	1mg/kg	50mg
DuoDote™ (Pralidoxime Chloride)	Auto injector	1 DuoDote™	3 DuoDotes™
Epinephrine ( <b>Push Dose</b> ) <b>0.1mg/mL IV</b>	0.01mg/mL	0.1mL/kg every 1-5 mins	10mcg (1 mL)
Mix 9mL of normal saline with 1mL of epinephrine 0.1mg/mL (IV epi) in a 10mL syringe to create epinephrine 0.01mg/mL, administer 0.1mL/kg (up to 1 mL at a time) every 1-5 mins to maintain adequate SBP.			
Epinephrine <b>0.1mg/mL IV</b>	0.1mg/mL	0.01mg/kg	1mg
Epinephrine <b>1mg/mL IM</b>	1mg/mL	0.01mg/kg	0.5mg
Epinephrine <b>1mg/mL Nebulized (NEB)</b>	1mg/mL	2.5mg <1 year; 5mg ≥1 year	5mg (5mL)
Fentanyl <b>IV/IM</b>	50mcg/mL	1mcg/kg	50mcg
Fentanyl <b>IN</b>	50mcg/mL	1.5mcg/kg	50mcg
Glucagon	1mg/mL	0.5 mg <1 year; 1mg ≥1 year	1mg
Glucopaste (4 years or older)	15gm	15gm	15gm
Ketorolac <b>slow IV/IO push</b>	15mg/mL	0.5mg/kg	15mg
Ketorolac <b>IM (Adult)</b>	15mg/mL	1mg/kg	30mg
Ketorolac <b>IM (Pediatric)</b>	15mg/mL	0.5mg/kg ≥4 years	15mg
Lidocaine 2% ( <b>IO ONLY</b> )	20mg/mL	0.5 mg/kg	40mg
Midazolam all indications <b>IV/IO</b>	5mg/mL	0.1mg/kg	5mg
Midazolam Agitation/Sedation <b>IN/IM</b>	5mg/mL	0.2mg/kg	5mg



MEDICATION	FORMULATION	DOSAGE	Maximum Single Dose
Midazolam Seizure 0-16 mo <b>IN/IM</b>	5mg/mL	0.2mg/kg	2.2mg
Midazolam Seizure ≥17mo <b>IN/IM</b>	5mg/mL	PediDOSE* 17months-5 years: 2.5mg 6-11 years: 5mg ≥12 years: 10mg	2.5mg, 5mg, or 10mg depending on age
Morphine Sulfate <b>IV/IM/IO</b>	4mg/mL	0.1mg/kg	4mg
Naloxone	1mg/mL	0.1mg/kg	2mg
Normal Saline	0.9% Na Cl	20mL/kg	1L
Nitroglycerin SL (adults only)	0.4mg	0.4mg	1.2mg
Olanzapine ODT	10mg	10mg	10mg
Ondansetron ODT/IV/IM	4mg tab or (4 years or older ODT only) 2mg/mL IV/IM (adults only)	4mg	4mg
Sodium Bicarbonate IV (dilute 1:1 with NS if <1year)	1mEq/mL	1mEq/kg	50mEq
Tranexamic Acid (TXA)	1gm/10mL	1gm/10mL	1gm in 50 or 100mL infused over 10 minutes

**\*PediDOSE Midazolam IN/IM only - dosing chart for treatment of seizures**

Age	0-16 months	17 months – 5 years	6-11 years	≥12 years
Midazolam Dose IN/IM	0.2mg/kg	2.5 mg	5 mg	10 mg
Volume IN/IM	See color code	0.5 mL	1mL	2mL
If age is unknown				

## COLOR CODE DRUG DOSES:

3 Kg	Length 47 – 59.5 cm			Less than 3 months				
	Normal Vital Signs:		Heart Rate: 100-180	Respirations: 30-60		Systolic BP: >60		
	Cardioversion:		3 joules	6 joules		6 joules		
	Defibrillation:		6 joules	12 joules		12 joules		
	Supraglottic Airway:		igel	Size 1	No gastric suction catheter			
	Medication		Dose	mLs	Medication		Dose	mLs
	Adenosine		0.3mg	0.1mL	Fentanyl IV/IM		3mcg	0.06mL
	Albuterol NEB		2.5mg	3mL	Fentanyl IN		4.5mcg	0.09mL
	Amiodarone		15mg	0.3mL	Glucagon IM		0.5mg	0.5mL
	Atropine		0.06mg	0.6mL	Lidocaine 2% IO		1.5mg	0.08mL
	Calcium Chloride*		60mg	0.6mL	Midazolam Agitation/Sedation IV/IO		0.3mg	0.06mL
	Dextrose 10% slow IV		15mL	15mL	Midazolam Agitation/Sedation IN/IM		0.6mg	0.12mL
	Diphenhydramine IV/IM		3mg	0.06mL	Midazolam Seizure 0-16mo IN/IM		0.6mg	0.12mL
DuoDote™		1 dose	NA	Morphine IV/IM/IO		0.3mg	0.08mL	
Epinephrine Push Dose		3mcg	0.3mL	Naloxone IV/IM/IN		0.3mg	0.3mL	
Epinephrine 0.1mg/mL IV		0.03mg	0.3mL	Normal Saline IV Bolus		60mL	60mL	
Epinephrine 1mg/mL IM		0.03mg	0.03mL	Sodium Bicarbonate*		3mEq	3mL	
Epinephrine 1mg/mL NEB		2.5mg	2.5mL					
*Dilute 1:1 with NS								

GREY

4 Kg	Length 47 – 59.5 cm			Less than 3 months		
	Normal Vital Signs:		Heart Rate: 100-180	Respirations: 30-60		Systolic BP: >60
	Cardioversion:		4 joules	8 joules		8 joules
	Defibrillation:		8 joules	16 joules		16 joules
	Supraglottic Airway:		igel	Size 1	No gastric suction catheter	
	Medication	Dose	mLs	Medication	Dose	mLs
	Adenosine	0.4mg	0.13mL	Fentanyl IV/IM	4mcg	0.08mL
	Albuterol NEB	2.5mg	3mL	Fentanyl IN	6mcg	0.12mL
	Amiodarone	20mg	0.4mL	Glucagon IM	0.5mg	0.5mL
	Atropine	0.08mg	0.8mL	Lidocaine 2% IO	2mg	0.1mL
Calcium Chloride*	80mg	0.8mL	Midazolam Agitation/Sedation IV/IO	0.4mg	0.08mL	
Dextrose 10% slow IV	20mL	20mL	Midazolam Agitation/Sedation IN/IM	0.8mg	0.16mL	
Diphenhydramine IV/IM	4mg	0.08mL	Midazolam Seizure 0-16mo IN/IM	0.8mg	0.16mL	
DuoDote™	1 dose	NA	Morphine IV/IM/IO	0.4mg	0.1mL	
Epinephrine Push Dose	4mcg	0.4mL	Naloxone IV/IM/IN	0.4mg	0.4mL	
Epinephrine 0.1mg/mL IV	0.04mg	0.4mL	Normal Saline IV Bolus	80mL	80mL	
Epinephrine 1mg/mL IM	0.04mg	0.04mL	Sodium Bicarbonate*	4mEq	4mL	
Epinephrine 1mg/mL NEB	2.5mg	2.5mL	*Dilute 1:1 with NS			
			GREY			

5Kg	Length 47 – 59.5 cm			Less than 3 months		
	Normal Vital Signs:		Heart Rate: 100-180	Normal Vital Signs:		Heart Rate: 100-180
	Cardioversion:		5 joules	10 joules		10 joules
	Defibrillation:		10 joules	20 joules		20 joules
	Supraglottic Airway:		igel Size 1	No gastric suction catheter		
	Medication	Dose	mLs	Medication	Dose	mLs
	Adenosine	0.5mg	0.17mL	Fentanyl IV/IM	5mcg	0.1mL
	Albuterol NEB	2.5mg	3mL	Fentanyl IN	7.5mcg	0.15mL
	Amiodarone	25mg	0.5mL	Glucagon IM	0.5mg	0.5mL
	Atropine	0.1mg	1mL	Lidocaine 2% IO	2.5mg	0.12mL
Calcium Chloride*	100mg	1mL	Midazolam Agitation/Sedation IV/IO	0.5mg	0.1mL	
Dextrose 10% slow IV	25mL	25mL	Midazolam Agitation/Sedation IN/IM	1mg	0.2mL	
Diphenhydramine IV/IM	5mg	0.1mL	Midazolam Seizure 0-16mo IN/IM	1mg	0.2mL	
DuoDote™	1 dose	NA	Morphine IV/IM/IO	0.5mg	0.12mL	
Epinephrine Push Dose	5mcg	0.5mL	Naloxone IV/IM/IN	0.5mg	0.5mL	
Epinephrine 0.1mg/mL IV	0.05mg	0.5mL	Normal Saline IV Bolus	100mL	100mL	
Epinephrine 1mg/mL IM	0.05mg	0.05mL	Sodium Bicarbonate*	5mEq	5mL	
Epinephrine 1mg/mL NEB	2.5mg	2.5mL	*Dilute 1:1 with NS			

GREY

6 Kg	Length 59.5 – 62 cm			3 – 4 months			PINK		
	Normal Vital Signs:		Heart Rate:	100-160	Respirations:	25-40		Systolic BP:	>70
	Cardioversion:		6 joules		12 joules			12 joules	
	Defibrillation:		12 joules		24 joules			24 joules	
	Supraglottic Airway:		igel	Size 1.5	10 F gastric suction catheter				
	Medication	Dose	mLs	Medication	Dose	mLs			
	Adenosine	0.6mg	0.2mL	Fentanyl IV/IM	6mcg	0.12mL			
	Albuterol NEB	2.5mg	3mL	Fentanyl IN	9mcg	0.18mL			
	Amiodarone	30mg	0.6mL	Glucagon IM	0.5mg	0.5mL			
	Atropine	0.12mg	1.2mL	Lidocaine 2% IO	3mg	0.15mL			
Calcium Chloride*	120mg	1.2mL	Midazolam Agitation/Sedation IV/IO	0.6mg	0.12mL				
Dextrose 10% slow IV	30mL	30mL	Midazolam Agitation/Sedation IN/IM	1.2mg	0.24mL				
Diphenhydramine IV/IM	6mg	0.12mL	Midazolam Seizure 0-16mo IN/IM	1.2mg	0.24mL				
DuoDote™	1 dose	NA	Morphine IV/IM/IO	0.6mg	0.15mL				
Epinephrine Push Dose	6mcg	0.6mL	Naloxone IV/IM/IN	0.6mg	0.6mL				
Epinephrine 0.1mg/mL IV	0.06mg	0.6mL	Normal Saline IV Bolus	120mL	120mL				
Epinephrine 1mg/mL IM	0.06mg	0.06mL	Sodium Bicarbonate*	6mEq	6mL				
Epinephrine 1mg/mL NEB	2.5mg	2.5mL	*Dilute 1:1 with NS						

7 Kg	Length 62 – 66 cm			5 – 6 months			PINK
	Normal Vital Signs:		Heart Rate: 100-160	Respirations: 25-40		Systolic BP: >70	
	Cardioversion:		7 joules	14 joules		14 joules	
	Defibrillation:		14 joules	28 joules		28 joules	
	Supraglottic Airway:		igel	Size 1.5	10 F gastric suction catheter		
	Medication	Dose	mLs	Medication	Dose	mLs	
	Adenosine	0.7mg	0.23mL	Fentanyl IV/IM	7mcg	0.14mL	
	Albuterol NEB	2.5mg	3mL	Fentanyl IN	10.5mcg	0.21mL	
	Amiodarone	35mg	0.7mL	Glucagon IM	0.5mg	0.5mL	
	Atropine	0.14mg	1.4mL	Lidocaine 2% IO	3.5mg	0.18mL	
Calcium Chloride*	140mg	1.4mL	Midazolam Agitation/Sedation IV/IO	0.7mg	0.14mL		
Dextrose 10% slow IV	35mL	35mL	Midazolam Agitation/Sedation IN/IM	1.4mg	0.28mL		
Diphenhydramine IV/IM	7mg	0.14mL	Midazolam Seizure 0-16mo IN/IM	1.4mg	0.28mL		
DuoDote™	1 dose	NA	Morphine IV/IM/IO	0.7mg	0.18mL		
Epinephrine Push Dose	7mcg	0.7mL	Naloxone IV/IM/IN	0.7mg	0.7mL		
Epinephrine 0.1mg/mL IV	0.07mg	0.7mL	Normal Saline IV Bolus	140mL	140mL		
Epinephrine 1mg/mL IM	0.07mg	0.07mL	Sodium Bicarbonate*	7mEq	7mL		
Epinephrine 1mg/mL NEB	2.5mg	2.5mL	*Dilute 1:1 with NS				

8 Kg	Length 66 – 69.5 cm			7 - 8 months			RED
	Normal Vital Signs:		Heart Rate: 100-160	Respirations: 20-40		Systolic BP: >70	
	Cardioversion:		8 joules	16 joules		16 joules	
	Defibrillation:		16 joules	32 joules		32 joules	
	Supraglottic Airway:		igel	Size 1.5	10 F gastric suction catheter		
	Medication	Dose	mLs	Medication	Dose	mLs	
	Adenosine	0.8mg	0.27mL	Fentanyl IV/IM	8mcg	0.16mL	
	Albuterol NEB	2.5mg	3mL	Fentanyl IN	12mcg	0.24mL	
	Amiodarone	40mg	0.8mL	Glucagon IM	0.5mg	0.5mL	
	Atropine	0.16mg	1.6mL	Lidocaine 2% IO	4mg	0.2mL	
	Calcium Chloride*	160mg	1.6mL	Midazolam Agitation/Sedation IV/IO	0.8mg	0.16mL	
	Dextrose 10% slow IV	40mL	40mL	Midazolam Agitation/Sedation IN/IM	1.6mg	0.32mL	
Diphenhydramine IV/IM	8mg	0.16mL	Midazolam Seizure 0-16mo IN/IM	1.6mg	0.32mL		
DuoDote™	1 dose	NA	Morphine IV/IM/IO	0.8mg	0.2mL		
Epinephrine Push Dose	8mcg	0.8mL	Naloxone IV/IM/IN	0.8mg	0.8mL		
Epinephrine 0.1mg/mL IV	0.08mg	0.8mL	Normal Saline IV Bolus	160mL	160mL		
Epinephrine 1mg/mL IM	0.08mg	0.08mL	Sodium Bicarbonate*	8mEq	8mL		
Epinephrine 1mg/mL NEB	2.5mg	2.5mL	*Dilute 1:1 with NS				

9 Kg	Length 69 – 73 cm			9 – 10 months			RED
	Normal Vital Signs:		Heart Rate: 100-160	Respirations: 20-40	Systolic BP: >70		
	Cardioversion:		9 joules	18 joules	18 joules		
	Defibrillation:		18 joules	36 joules	36 joules		
	Supraglottic Airway:		igel	Size 1.5	10 F gastric suction catheter		
	Medication	Dose	mLs	Medication	Dose	mLs	
	Adenosine	0.9mg	0.3mL	Fentanyl IV/IM	9mcg	0.18mL	
	Albuterol NEB	2.5mg	3mL	Fentanyl IN	13.5mcg	0.27mL	
	Amiodarone	45mg	0.9mL	Glucagon IM	0.5mg	0.5mL	
	Atropine	0.18mg	1.8mL	Lidocaine 2% IO	4.5mg	0.22mL	
Calcium Chloride*	180mg	1.8mL	Midazolam Agitation/Sedation IV/IO	0.9mg	0.18mL		
Dextrose 10% slow IV	45mL	45mL	Midazolam Agitation/Sedation IN/IM	1.8mg	0.36mL		
Diphenhydramine IV/IM	9mg	0.18mL	Midazolam Seizure 0-16mo IN/IM	1.8mg	0.36mL		
DuoDote™	1 dose	NA	Morphine IV/IM/IO	0.9mg	0.22mL		
Epinephrine Push Dose	9mcg	0.9mL	Naloxone IV/IM/IN	0.9mg	0.9mL		
Epinephrine 0.1mg/mL IV	0.09mg	0.9mL	Normal Saline IV Bolus	180mL	180mL		
Epinephrine 1mg/mL IM	0.09mg	0.09mL	Sodium Bicarbonate*	9mEq	9mL		
Epinephrine 1mg/mL NEB	2.5mg	2.5mL	*Dilute 1:1 with NS				

10 Kg	Length 73 – 78 cm			11 – 14 months		
	Normal Vital Signs:		Heart Rate: 90-140	Respirations: 24-40		Systolic BP: >70
	Cardioversion:		10 joules	20 joules		20 joules
	Defibrillation:		20 joules	40 joules		40 joules
	Supraglottic Airway:		igel	Size 1.5	10 F gastric suction catheter	
	Medication	Dose	mLs	Medication	Dose	mLs
	Adenosine	1mg	0.33mL	Fentanyl IV/IM	10mcg	0.2mL
	Albuterol NEB	2.5mg	3mL	Fentanyl IN	15mcg	0.3mL
	Amiodarone	50mg	1mL	Glucagon IM	1mg	1mL
	Atropine	0.2mg	2mL	Lidocaine 2% IO	5mg	0.25mL
Calcium Chloride	200mg	2mL	Midazolam Agitation/Sedation IV/IO	1mg	0.2mL	
Dextrose 10% slow IV	50mL	50mL	Midazolam Agitation/Sedation IN/IM	2mg	0.4mL	
Diphenhydramine IV/IM	10mg	0.2mL	Midazolam Seizure 0-16mo IN/IM	2mg	0.4mL	
DuoDote™	1 dose	NA	Midazolam Seizure ≥17mo IN/IM	PediDOSE	-	
Epinephrine Push Dose	10mcg	1mL	Morphine IV/IM/IO	1mg	0.25mL	
Epinephrine 0.1mg/mL IV	0.1mg	1mL	Naloxone IV/IM/IN	1mg	1mL	
Epinephrine 1mg/mL IM	0.1mg	0.1mL	Normal Saline IV Bolus	200mL	200mL	
Epinephrine 1mg/mL NEB	5mg	5mL	Sodium Bicarbonate*	10mEq	10mL	

PURPLE

\*Dilute 1:1 with NS

11 Kg	Length 78 – 83 cm			15 – 18 months		
	Normal Vital Signs:		Heart Rate: 90-140	Respirations: 24-40		Systolic BP: >70
	Cardioversion:		11 joules	22 joules		22 joules
	Defibrillation:		22 joules	44 joules		44 joules
	Supraglottic Airway:		igel	Size 1.5	10 F gastric suction catheter	
	Medication	Dose	mLs	Medication	Dose	mLs
	Adenosine	1.1mg	0.37mL	Fentanyl IV/IM	11mcg	0.22mL
	Albuterol NEB	2.5mg	3mL	Fentanyl IN	16.5mcg	0.33mL
	Amiodarone	55mg	1.1mL	Glucagon IM	1mg	1mL
	Atropine	0.22mg	2.2mL	Lidocaine 2% IO	5.5mg	0.28mL
	Calcium Chloride	220mg	2.2mL	Midazolam Agitation/Sedation IV/IO	1.1mg	0.22mL
	Dextrose 10% slow IV	55mL	55mL	Midazolam Agitation/Sedation IN/IM	2.2mg	0.44mL
Diphenhydramine IV/IM	11mg	0.22mL	Midazolam Seizure 0-16mo IN/IM	2.2mg	0.44mL	
DuoDote™	1 dose	NA	Midazolam Seizure ≥17mo IN/IM	PediDOSE	-	
Epinephrine Push Dose	10mcg	1mL	Morphine IV/IM/IO	1.1mg	0.28mL	
Epinephrine 0.1mg/mL IV	0.11mg	1.1mL	Naloxone IV/IM/IN	1.1mg	1.1mL	
Epinephrine 1mg/mL IM	0.11mg	0.11mL	Normal Saline IV Bolus	220mL	220mL	
Epinephrine 1mg/mL NEB	5mg	5mL	Sodium Bicarbonate	11mEq	11mL	

PURPLE

12 Kg	Length 83 – 94.5 cm			19 -35 months		
	Normal Vital Signs:		Heart Rate: 90-140	Respirations: 20-30	Systolic BP: >70	
	Cardioversion:		12 joules	24 joules	24 joules	
	Defibrillation:		24 joules	48 joules	48 joules	
	Supraglottic Airway:		igel	Size 2	12 F gastric suction catheter	
	Medication	Dose	mLs	Medication	Dose	mLs
	Adenosine	1.2mg	0.4mL	Fentanyl IV/IM	12mcg	0.24mL
	Albuterol NEB	2.5mg	3mL	Fentanyl IN	18mcg	0.36mL
	Amiodarone	60mg	1.2mL	Glucagon IM	1mg	1mL
	Atropine	0.24mg	2.4mL	Lidocaine 2% IO	6mg	0.3mL
	Calcium Chloride	240mg	2.4mL	Midazolam Agitation/Sedation IV/IO	1.2mg	0.24mL
	Dextrose 10% slow IV	60mL	60mL	Midazolam Agitation/Sedation IN/IM	2.4mg	0.48mL
Diphenhydramine IV/IM	12mg	0.24mL	Midazolam Seizure ≥17mo IN/IM	PediDose	-	
DuoDote™	1 dose	NA	Morphine IV/IM/IO	1.2mg	0.3mL	
Epinephrine Push Dose	10mcg	1mL	Naloxone IV/IM/IN	1.2mg	1.2mL	
Epinephrine 0.1mg/mL IV	0.12mg	1.2mL	Normal Saline IV Bolus	240mL	240mL	
Epinephrine 1mg/mL IM	0.12mg	0.12mL	Sodium Bicarbonate	12mEq	12mL	
Epinephrine 1mg/mL NEB	5mg	5mL				

YELLOW

13 Kg	Length 83 – 94.5 cm			19 -35 months				
	Normal Vital Signs:		Heart Rate: 90-140	Respirations: 20-30		Systolic BP: >70		
	Cardioversion:		13 joules	26 joules		26 joules		
	Defibrillation:		26 joules	52 joules		52 joules		
	Supraglottic Airway:		igel	Size 2	12 F gastric suction catheter			
	Medication		Dose	mLs	Medication		Dose	mLs
	Adenosine		1.3mg	0.43mL	Fentanyl IV/IM		13mcg	0.26mL
	Albuterol NEB		2.5mg	3mL	Fentanyl IN		19.5mcg	0.39mL
	Amiodarone		65mg	1.3mL	Glucagon IM		1mg	1mL
	Atropine		0.26mg	2.6mL	Lidocaine 2% IO		6.5mg	0.32mL
	Calcium Chloride		260mg	2.6mL	Midazolam Agitation/Sedation IV/IO		1.3mg	0.26mL
	Dextrose 10% slow IV		65mL	65mL	Midazolam Agitation/Sedation IN/IM		2.6mg	0.52mL
	Diphenhydramine IV/IM		13mg	0.26mL	Midazolam Seizure ≥17mo IN/IM		PediDose	-
DuoDote™		1 dose	NA	Morphine IV/IM/IO		1.3mg	0.32mL	
Epinephrine Push Dose		10mcg	1mL	Naloxone IV/IM/IN		1.3mg	1.3mL	
Epinephrine 0.1mg/mL IV		0.13mg	1.3mL	Normal Saline IV Bolus		260mL	260mL	
Epinephrine 1mg/mL IM		0.13mg	0.13mL	Sodium Bicarbonate		13mEq	13mL	
Epinephrine 1mg/mL NEB		5mg	5mL					
YELLOW								

14 Kg	Length 83 – 94.5 cm			19 -35 months				
	Normal Vital Signs:		Heart Rate: 90-140	Respirations: 20-30		Systolic BP: >70		
	Cardioversion:		14 joules	28 joules		28 joules		
	Defibrillation:		28 joules	56 joules		56 joules		
	Supraglottic Airway:		igel	Size 2	12 F gastric suction catheter			
	Medication		Dose	mLs	Medication		Dose	mLs
	Adenosine		1.4mg	0.47mL	Fentanyl IV/IM		14mcg	0.28mL
	Albuterol NEB		2.5mg	3mL	Fentanyl IN		21mcg	0.42mL
	Amiodarone		70mg	1.4mL	Glucagon IM		1mg	1mL
	Atropine		0.28mg	2.8mL	Lidocaine 2% IO		7mg	0.35mL
	Calcium Chloride		280mg	2.8mL	Midazolam Agitation/Sedation IV/IO		1.4mg	0.28mL
	Dextrose 10% slow IV		70mL	70mL	Midazolam Agitation/Sedation IN/IM		2.8mg	0.56mL
	Diphenhydramine IV/IM		14mg	0.28mL	Midazolam Seizure ≥17mo IN/IM		PediDose	-
DuoDote™		1 dose	NA	Morphine IV/IM/IO		1.4mg	0.35mL	
Epinephrine Push Dose		10mcg	1mL	Naloxone IV/IM/IN		1.4mg	1.4mL	
Epinephrine 0.1mg/mL IV		0.14mg	1.4mL	Normal Saline IV Bolus		280mL	280mL	
Epinephrine 1mg/mL IM		0.14mg	0.14mL	Sodium Bicarbonate		14mEq	14mL	
Epinephrine 1mg/mL NEB		5mg	5mL					

YELLOW



15 Kg	Length 94.5 – 107 cm			3 – 4 years			WHITE						
	Normal Vital Signs:		Heart Rate: 80-130		Respirations: 20-30			Systolic BP: >75					
	Cardioversion:		15 joules		30 joules			30 joules					
	Defibrillation:		30 joules		60 joules			60 joules					
	Supraglottic Airway:		igel		Size 2			12 F gastric suction catheter					
	Medication		Dose		mLs			Medication		Dose		mLs	
	Adenosine		1.5mg		0.5mL			Glucagon IM		1mg		1mL	
	Albuterol NEB		2.5mg		3mL			Glucopaste*		15gm		1 dose	
	Amiodarone		75mg		1.5mL			Ketorolac slow IV/IO*		7.5mg		0.5mL	
	Atropine		0.3mg		3mL			Ketorolac IM*		7.5mg		0.5mL	
	Calcium Chloride		300mg		3mL			Lidocaine 2% IO		7.5mg		0.38mL	
	Dextrose 10% slow IV		75mL		75mL			Midazolam Agitation/Sedation IV/IO		1.5mg		0.3mL	
	Diphenhydramine IV/IM		15mg		0.3mL			Midazolam Agitation/Sedation IN/IM		3mg		0.6mL	
	DuoDote™		1 dose		NA			Midazolam Seizure ≥17mo IN/IM		PediDose		-	
	Epinephrine Push Dose		10mcg		1mL			Morphine IV/IM/IO		1.5mg		0.38mL	
	Epinephrine 0.1mg/mL IV		0.15mg		1.5mL			Naloxone IV/IM/IN		1.5mg		1.5mL	
	Epinephrine 1mg/mL IM		0.15mg		0.15mL			Normal Saline IV Bolus		300mL		300mL	
Epinephrine 1mg/mL NEB		5mg		5mL		Ondansetron ODT*		4mg		1 tablet			
Fentanyl IV/IM		15mcg		0.3mL		Sodium Bicarbonate		15mEq		15mL			
Fentanyl IN		22.5mcg		0.45mL						*4 years or older			

16 Kg	Length 94.5 – 107 cm			3 – 4 years		
	Normal Vital Signs:		Heart Rate: 80-130	Respirations: 20-30	Systolic BP: >75	
	Cardioversion:		16 joules	32 joules	32 joules	
	Defibrillation:		32 joules	64 joules	64 joules	
	Supraglottic Airway:		igel	Size 2	12 F gastric suction catheter	
	Medication		Dose	mLs	Medication	
	Adenosine		1.6mg	0.53mL	Glucagon IM	
	Albuterol NEB		2.5mg	3mL	Glucopaste*	
	Amiodarone		80mg	1.6mL	Ketorolac slow IV/IO*	
	Atropine		0.32mg	3.2mL	Ketorolac IM*	
	Calcium Chloride		320mg	3.2mL	Lidocaine 2% IO	
	Dextrose 10% slow IV		80mL	80mL	Midazolam Agitation/Sedation IV/IO	
	Diphenhydramine IV/IM		16mg	0.32mL	Midazolam Agitation/Sedation IN/IM	
	DuoDote™		1 dose	NA	Midazolam Seizure ≥17mo IN/IM	
	Epinephrine Push Dose		10mcg	1mL	Morphine IV/IM/IO	
	Epinephrine 0.1mg/mL IV		0.16mg	1.6mL	Naloxone IV/IM/IN	
	Epinephrine 1mg/mL IM		0.16mg	0.16mL	Normal Saline IV Bolus	
Epinephrine 1mg/mL NEB		5mg	5mL	Ondansetron ODT*		
Fentanyl IV/IM		16mcg	0.32mL	Sodium Bicarbonate		
Fentanyl IN		24mcg	0.48mL			
				*4 years or older		

17 Kg	Length 94.5 – 107 cm			3 – 4 years				
	Normal Vital Signs:		Heart Rate: 80-130	Respirations: 20-30		Systolic BP: >75		
	Cardioversion:		17 joules	34 joules		34 joules		
	Defibrillation:		34 joules	68 joules		68 joules		
	Supraglottic Airway:		igel	Size 2	12 F gastric suction catheter			
	Medication		Dose	mLs	Medication		Dose	mLs
	Adenosine		1.7mg	0.57mL	Glucagon IM		1mg	1mL
	Albuterol NEB		2.5mg	3mL	Glucopaste*		15gm	1 dose
	Amiodarone		85mg	1.7mL	Ketorolac slow IV/IO*		8.5mg	0.57mL
	Atropine		0.34mg	3.4mL	Ketorolac IM*		8.5mg	0.57mL
	Calcium Chloride		340mg	3.4mL	Lidocaine 2% IO		8.5mg	0.42mL
	Dextrose 10% slow IV		85mL	85mL	Midazolam Agitation/Sedation IV/IO		1.7mg	0.34mL
	Diphenhydramine IV/IM		17mg	0.34mL	Midazolam Agitation/Sedation IN/IM		3.4mg	0.68mL
	DuoDote™		1 dose	NA	Midazolam Seizure ≥17mo IN/IM		PediDose	-
	Epinephrine Push Dose		10mcg	1mL	Morphine IV/IM/IO		1.7mg	0.43mL
Epinephrine 0.1mg/mL IV		0.17mg	1.7mL	Naloxone IV/IM/IN		1.7mg	1.7mL	
Epinephrine 1mg/mL IM		0.17mg	0.17mL	Normal Saline IV Bolus		340mL	340mL	
Epinephrine 1mg/mL NEB		5mg	5mL	Ondansetron ODT*		4mg	1 tablet	
Fentanyl IV/IM		17mcg	0.34mL	Sodium Bicarbonate		17mEq	17mL	
Fentanyl IN		25.5mcg	0.51mL					
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18 Kg	Length 94.5 – 107 cm			3 – 4 years				
	Normal Vital Signs:		Heart Rate: 80-130	Respirations: 20-30		Systolic BP: >75		
	Cardioversion:		18 joules	36 joules		36 joules		
	Defibrillation:		36 joules	72 joules		72 joules		
	Supraglottic Airway:		igel	Size 2	12 F gastric suction catheter			
	Medication		Dose	mLs	Medication		Dose	mLs
	Adenosine		1.8mg	0.6mL	Glucagon IM		1mg	1mL
	Albuterol NEB		2.5mg	3mL	Glucopaste*		15gm	1 dose
	Amiodarone		90mg	1.8mL	Ketorolac slow IV/IO*		9mg	0.6mL
	Atropine		0.36mg	3.6mL	Ketorolac IM*		9mg	0.6mL
	Calcium Chloride		360mg	3.6mL	Lidocaine 2% IO		9mg	0.45mL
	Dextrose 10% slow IV		90mL	90mL	Midazolam Agitation/Sedation IV/IO		1.8mg	0.36mL
	Diphenhydramine IV/IM		18mg	0.36mL	Midazolam Agitation/Sedation IN/IM		3.6mg	0.72mL
	DuoDote™		1 dose	NA	Midazolam Seizure ≥17mo IN/IM		PediDose	-
	Epinephrine Push Dose		10mcg	1mL	Morphine IV/IM/IO		1.8mg	0.45mL
Epinephrine 0.1mg/mL IV		0.18mg	1.8mL	Naloxone IV/IM/IN		1.8mg	1.8mL	
Epinephrine 1mg/mL IM		0.18mg	0.18mL	Normal Saline IV Bolus		360mL	360mL	
Epinephrine 1mg/mL NEB		5mg	5mL	Ondansetron ODT*		4mg	1 tablet	
Fentanyl IV/IM		18mcg	0.36mL	Sodium Bicarbonate		18mEq	18mL	
Fentanyl IN		27mcg	0.54mL					

19 Kg	Length 107 – 119.5 cm			5 – 6 years		
	Normal Vital Signs:		Heart Rate: 70-120	Respirations: 15-30	Systolic BP: >80	
	Cardioversion:		19 joules	38 joules	38 joules	
	Defibrillation:		38 joules	76 joules	76 joules	
	Supraglottic Airway:		igel	Size 2	12 F gastric suction catheter	
	Medication	Dose	mLs	Medication	Dose	mLs
	Adenosine	1.9mg	0.63mL	Glucagon IM	1mg	1mL
	Albuterol NEB	5mg	6mL	Glucopaste	15gm	1 dose
	Amiodarone	95mg	1.9mL	Ketorolac slow IV/IO	9.5mg	0.63mL
	Atropine	0.38mg	3.8mL	Ketorolac IM	9.5mg	0.63mL
	Calcium Chloride	380mg	3.8mL	Lidocaine 2% IO	9.5mg	0.48mL
	Dextrose 10% slow IV	95mL	95mL	Midazolam Agitation/Sedation IV/IO	1.9mg	0.38mL
Diphenhydramine IV/IM	19mg	0.38mL	Midazolam Agitation/Sedation IN/IM	3.8mg	0.76mL	
DuoDote™	1 dose	NA	Midazolam Seizure ≥17mo IN/IM	PediDose	-	
Epinephrine Push Dose	10mcg	1mL	Morphine IV/IM/IO	1.9mg	0.48mL	
Epinephrine 0.1mg/mL IV	0.19mg	1.9mL	Naloxone IV/IM/IN	1.9mg	1.9mL	
Epinephrine 1mg/mL IM	0.19mg	0.19mL	Normal Saline IV Bolus	380mL	380mL	
Epinephrine 1mg/mL NEB	5mg	5mL	Ondansetron ODT	4mg	1 tablet	
Fentanyl IV/IM	19mcg	0.38mL	Sodium Bicarbonate	19mEq	19mL	
Fentanyl IN	28.5mcg	0.57mL				

BLUE

20 Kg	Length 107 – 119.5 cm			5 – 6 years			BLUE
	Normal Vital Signs:		Heart Rate: 70-120	Respirations: 15-30	Systolic BP: >80		
	Cardioversion:		20 joules	40 joules	40 joules		
	Defibrillation:		40 joules	80 joules	80 joules		
	Supraglottic Airway:		igel	Size 2	12 F gastric suction catheter		
	Medication	Dose	mLs	Medication	Dose	mLs	
	Adenosine	2mg	0.67mL	Glucagon IM	1mg	1mL	
	Albuterol NEB	5mg	6mL	Glucopaste	15gm	1 dose	
	Amiodarone	100mg	2mL	Ketorolac slow IV/IO	10mg	0.67mL	
	Atropine	0.4mg	4mL	Ketorolac IM	10mg	0.67mL	
	Calcium Chloride	400mg	4mL	Lidocaine 2% IO	10mg	0.5mL	
	Dextrose 10% slow IV	100mL	100mL	Midazolam Agitation/Sedation IV/IO	2mg	0.4mL	
Diphenhydramine IV/IM	20mg	0.4mL	Midazolam Agitation/Sedation IN/IM	4mg	0.8mL		
DuoDote™	1 dose	NA	Midazolam Seizure ≥17mo IN/IM	PediDose	-		
Epinephrine Push Dose	10mcg	1mL	Morphine IV/IM/IO	2mg	0.5mL		
Epinephrine 0.1mg/mL IV	0.2mg	2mL	Naloxone IV/IM/IN	2mg	2mL		
Epinephrine 1mg/mL IM	0.2mg	0.2mL	Normal Saline IV Bolus	400mL	400mL		
Epinephrine 1mg/mL NEB	5mg	5mL	Ondansetron ODT	4mg	1 tablet		
Fentanyl IV/IM	20mcg	0.4mL	Sodium Bicarbonate	20mEq	20mL		
Fentanyl IN	30mcg	0.6mL					

22 Kg	Length 107 – 119.5 cm			5 – 6 years		
	Normal Vital Signs:		Heart Rate: 70-120	Respirations: 15-30	Systolic BP: >80	
	Cardioversion:		22 joules	44 joules	44 joules	
	Defibrillation:		44 joules	88 joules	88 joules	
	Supraglottic Airway:		igel	Size 2	12 F gastric suction catheter	
	Medication	Dose	mLs	Medication	Dose	mLs
	Adenosine	2.2mg	0.73mL	Glucagon IM	1mg	1mL
	Albuterol NEB	5mg	6mL	Glucopaste	15gm	1 dose
	Amiodarone	110mg	2.2mL	Ketorolac slow IV/IO	11mg	0.73mL
	Atropine	0.44mg	4.4mL	Ketorolac IM	11mg	0.73mL
	Calcium Chloride	440mg	4.4mL	Lidocaine 2% IO	11mg	0.55mL
	Dextrose 10% slow IV	110mL	110mL	Midazolam Agitation/Sedation IV/IO	2.2mg	0.44mL
Diphenhydramine IV/IM	22mg	0.44mL	Midazolam Agitation/Sedation IN/IM	4.4mg	0.88mL	
DuoDote™	1 dose	NA	Midazolam Seizure ≥17mo IN/IM	PediDose	-	
Epinephrine Push Dose	10mcg	1mL	Morphine IV/IM/IO	2.2mg	0.55mL	
Epinephrine 0.1mg/mL IV	0.22mg	2.2mL	Naloxone IV/IM/IN	2mg	2mL	
Epinephrine 1mg/mL IM	0.22mg	0.22mL	Normal Saline IV Bolus	440mL	440mL	
Epinephrine 1mg/mL NEB	5mg	5mL	Ondansetron ODT	4mg	1 tablet	
Fentanyl IV/IM	22mcg	0.44mL	Sodium Bicarbonate	22mEq	22mL	
Fentanyl IN	33mcg	0.66mL				

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24 Kg	Length 119 – 129 cm			7 – 9 years		
	Normal Vital Signs:		Heart Rate: 70-110	Respirations: 15-30		Systolic BP: >80
	Cardioversion:		24 joules	48 joules		48 joules
	Defibrillation:		48 joules	96 joules		96 joules
	Supraglottic Airway:		igel	Size 2.5	12 F gastric suction catheter	
	Medication	Dose	mLs	Medication	Dose	mLs
	Adenosine	2.4mg	0.8mL	Glucagon IM	1mg	1mL
	Albuterol NEB	5mg	6mL	Glucopaste	15gm	1 dose
	Amiodarone	120mg	2.4mL	Ketorolac slow IV/IO	12mg	0.8mL
	Atropine	0.48mg	4.8mL	Ketorolac IM	12mg	0.8mL
Calcium Chloride	480mg	4.8mL	Lidocaine 2% IO	12mg	0.6mL	
Dextrose 10% slow IV	120mL	120mL	Midazolam Agitation/Sedation IV/IO	2.4mg	0.48mL	
Diphenhydramine IV/IM	24mg	0.48mL	Midazolam Agitation/Sedation IN/IM	4.8mg	0.96mL	
DuoDote™	2 doses	NA	Midazolam Seizure ≥17mo IN/IM	PediDose	-	
Epinephrine Push Dose	10mcg	1mL	Morphine IV/IM/IO	2.4mg	0.6mL	
Epinephrine 0.1mg/mL IV	0.24mg	2.4mL	Naloxone IV/IM/IN	2mg	2mL	
Epinephrine 1mg/mL IM	0.24mg	0.24mL	Normal Saline IV Bolus	480mL	480mL	
Epinephrine 1mg/mL NEB	5mg	5mL	Ondansetron ODT	4mg	1 tablet	
Fentanyl IV/IM	24mcg	0.48mL	Sodium Bicarbonate	24mEq	24mL	
Fentanyl IN	36mcg	0.72mL				
ORANGE						

26 Kg	Length 119 – 129 cm			7 – 9 years		
	Normal Vital Signs:		Heart Rate: 70-110	Respirations: 15-30		Systolic BP: >80
	Cardioversion:		26 joules	52 joules		52 joules
	Defibrillation:		52 joules	104 joules		104 joules
	Supraglottic Airway:		igel	Size 2.5	12 F gastric suction catheter	
	Medication	Dose	mLs	Medication	Dose	mLs
	Adenosine	2.6mg	0.87mL	Glucagon IM	1mg	1mL
	Albuterol NEB	5mg	6mL	Glucopaste	15gm	1 dose
	Amiodarone	130mg	2.6mL	Ketorolac slow IV/IO	13mg	0.87mL
	Atropine	0.5mg	5mL	Ketorolac IM	13mg	0.87mL
Calcium Chloride	520mg	5.2mL	Lidocaine 2% IO	13mg	0.65mL	
Dextrose 10% slow IV	130mL	130mL	Midazolam Agitation/Sedation IV/IO	2.6mg	0.52mL	
Diphenhydramine IV/IM	26mg	0.52mL	Midazolam Agitation/Sedation IN/IM	5mg	1mL	
DuoDote™	2 doses	NA	Midazolam Seizure ≥17mo IN/IM	PediDose	-	
Epinephrine Push Dose	10mcg	1mL	Morphine IV/IM/IO	2.6mg	0.65mL	
Epinephrine 0.1mg/mL IV	0.26mg	2.6mL	Naloxone IV/IM/IN	2mg	2mL	
Epinephrine 1mg/mL IM	0.26mg	0.26mL	Normal Saline IV Bolus	520mL	520mL	
Epinephrine 1mg/mL NEB	5mg	5mL	Ondansetron ODT	4mg	1 tablet	
Fentanyl IV/IM	26mcg	0.52mL	Sodium Bicarbonate	26mEq	26mL	
Fentanyl IN	39mcg	0.78mL				

ORANGE

28 Kg	Length 119 – 129 cm			7 – 9 years		
	Normal Vital Signs:		Heart Rate: 70-110	Normal Vital Signs:		Heart Rate: 70-110
	Cardioversion:		28 joules	56 joules		56 joules
	Defibrillation:		56 joules	112 joules		112 joules
	Supraglottic Airway:		igel	Size 2.5	12 F gastric suction catheter	
	Medication	Dose	mLs	Medication	Dose	mLs
	Adenosine	2.8mg	0.93mL	Glucagon IM	1mg	1mL
	Albuterol NEB	5mg	6mL	Glucopaste	15gm	1 dose
	Amiodarone	140mg	2.8mL	Ketorolac slow IV/IO	14mg	0.93mL
	Atropine	0.5mg	5mL	Ketorolac IM	14mg	0.93mL
ORANGE	Calcium Chloride	560mg	5.6mL	Lidocaine 2% IO	14mg	0.7mL
	Dextrose 10% slow IV	140mL	140mL	Midazolam Agitation/Sedation IV/IO	2.8mg	0.56mL
	Diphenhydramine IV/IM	28mg	0.56mL	Midazolam Agitation/Sedation IN/IM	5mg	1mL
	DuoDote™	2 doses	NA	Midazolam Seizure ≥17mo IN/IM	PediDose	-
	Epinephrine Push Dose	10mcg	1mL	Morphine IV/IM/IO	2.8mg	0.7mL
	Epinephrine 0.1mg/mL IV	0.28mg	2.8mL	Naloxone IV/IM/IN	2mg	2mL
	Epinephrine 1mg/mL IM	0.28mg	0.28mL	Normal Saline IV Bolus	560mL	560mL
	Epinephrine 1mg/mL NEB	5mg	5mL	Ondansetron ODT	4mg	1 tablet
	Fentanyl IV/IM	28mcg	0.56mL	Sodium Bicarbonate	28mEq	28mL
	Fentanyl IN	42mcg	0.84mL			

30 Kg	Length 129 – 141.5 cm			10 – 12 years		
	Normal Vital Signs:		Heart Rate: 60-100	Respirations: 15-20		Systolic BP: >90
	Cardioversion:		30 joules	60 joules		60 joules
	Defibrillation:		60 joules	120 joules		120 joules
	Supraglottic Airway:		igel	Size 2.5	12 F gastric suction catheter	
	Medication	Dose	mLs	Medication	Dose	mLs
	Adenosine	3mg	1mL	Glucagon IM	1mg	1mL
	Albuterol NEB	5mg	6mL	Glucopaste	15gm	1 dose
	Amiodarone	150mg	3mL	Ketorolac slow IV/IO	15mg	1mL
	Atropine	0.5mg	5mL	Ketorolac IM	15mg	1mL
	Calcium Chloride	600mg	6mL	Lidocaine 2% IO	15mg	0.75mL
	Dextrose 10% slow IV	150mL	150mL	Midazolam Agitation/Sedation IV/IO	3mg	0.6mL
Diphenhydramine IV/IM	30mg	0.6mL	Midazolam Agitation/Sedation IN/IM	5mg	1mL	
DuoDote™	2 doses	NA	Midazolam Seizure ≥17mo IN/IM	PediDose	-	
Epinephrine Push Dose	10mcg	1mL	Morphine IV/IM/IO	3mg	0.75mL	
Epinephrine 0.1mg/mL IV	0.3mg	3mL	Naloxone IV/IM/IN	2mg	2mL	
Epinephrine 1mg/mL IM	0.3mg	0.3mL	Normal Saline IV Bolus	600mL	600mL	
Epinephrine 1mg/mL NEB	5mg	5mL	Ondansetron ODT	4mg	1 tablet	
Fentanyl IV/IM	30mcg	0.6mL	Sodium Bicarbonate	30mEq	30mL	
Fentanyl IN	45mcg	0.9mL				

GREEN

32 Kg	Length 129 – 141.5 cm			10 – 12 years		
	Normal Vital Signs:		Heart Rate: 60-100	Respirations: 15-20		Systolic BP: >90
	Cardioversion:		32 joules	64 joules		64 joules
	Defibrillation:		64 joules	128 joules		128 joules
	Supraglottic Airway:		igel	Size 2.5	12 F gastric suction catheter	
	Medication	Dose	mLs	Medication	Dose	mLs
	Adenosine	3.2mg	1.07mL	Glucagon IM	1mg	1mL
	Albuterol NEB	5mg	6mL	Glucopaste	15gm	1 dose
	Amiodarone	160mg	3.2mL	Ketorolac slow IV/IO	15mg	1mL
	Atropine	0.5mg	5mL	Ketorolac IM	15mg	1mL
	Calcium Chloride	640mg	6.4mL	Lidocaine 2% IO	16mg	0.8mL
	Dextrose 10% slow IV	160mL	160mL	Midazolam Agitation/Sedation IV/IO	3.2mg	0.64mL
	Diphenhydramine IV/IM	32mg	0.64mL	Midazolam Agitation/Sedation IN/IM	5mg	1mL
DuoDote™	2 doses	NA	Midazolam Seizure ≥17mo IN/IM	PediDose	-	
Epinephrine Push Dose	10mcg	1mL	Morphine IV/IM/IO	3.2mg	0.8mL	
Epinephrine 0.1mg/mL IV	0.32mg	3.2mL	Naloxone IV/IM/IN	2mg	2mL	
Epinephrine 1mg/mL IM	0.32mg	0.32mL	Normal Saline IV Bolus	640mL	640mL	
Epinephrine 1mg/mL NEB	5mg	5mL	Ondansetron ODT	4mg	1 tablet	
Fentanyl IV/IM	32mcg	0.64mL	Sodium Bicarbonate	32mEq	32mL	
Fentanyl IN	48mcg	0.96mL				

GREEN

34 Kg	Length 129 – 141.5 cm			10 – 12 years		
	Normal Vital Signs:		Heart Rate: 60-100	Respirations: 15-20		Systolic BP: >90
	Cardioversion:		34 joules	68 joules		68 joules
	Defibrillation:		68 joules	136 joules		136 joules
	Supraglottic Airway:		igel	Size 2.5	12 F gastric suction catheter	
	Medication	Dose	mLs	Medication	Dose	mLs
	Adenosine	3.4mg	1.13mL	Glucagon IM	1mg	1mL
	Albuterol NEB	5mg	6mL	Glucopaste	15gm	1 dose
	Amiodarone	170mg	3.4mL	Ketorolac slow IV/IO	15mg	1mL
	Atropine	0.5mg	5mL	Ketorolac IM	15mg	1mL
	Calcium Chloride	680mg	6.8mL	Lidocaine 2% IO	17mg	0.85mL
	Dextrose 10% slow IV	170mL	170mL	Midazolam Agitation/Sedation IV/IO	3.4mg	0.68mL
	Diphenhydramine IV/IM	34mg	0.68mL	Midazolam Agitation/Sedation IN/IM	5mg	1mL
DuoDote™	2 doses	NA	Midazolam Seizure ≥17mo IN/IM	PediDose	-	
Epinephrine Push Dose	10mcg	1mL	Morphine IV/IM/IO	3.4mg	0.85mL	
Epinephrine 0.1mg/mL IV	0.34mg	3.4mL	Naloxone IV/IM/IN	2mg	2mL	
Epinephrine 1mg/mL IM	0.34mg	0.34mL	Normal Saline IV Bolus	680mL	680mL	
Epinephrine 1mg/mL NEB	5mg	5mL	Ondansetron ODT	4mg	1 tablet	
Fentanyl IV/IM	34mcg	0.68mL	Sodium Bicarbonate	34mEq	34mL	
Fentanyl IN	50mcg	1mL				

GREEN

36 Kg	Length 129 – 141.5 cm			10 – 12 years				
	Normal Vital Signs:		Heart Rate: 60-100	Respirations: 15-20		Systolic BP: >90		
	Cardioversion:		36 joules	72 joules		72 joules		
	Defibrillation:		72 joules	144 joules		144 joules		
	Supraglottic Airway:		igel	Size 2.5	12 F gastric suction catheter			
	Medication		Dose	mLs	Medication		Dose	mLs
	Adenosine		3.6mg	1.2mL	Glucagon IM		1mg	1mL
	Albuterol NEB		5mg	6mL	Glucopaste		15gm	1 dose
	Amiodarone		180mg	3.6mL	Ketorolac slow IV/IO		15mg	1mL
	Atropine		0.5mg	5mL	Ketorolac IM		15mg	1mL
	Calcium Chloride		720mg	7.2mL	Lidocaine 2% IO		18mg	0.9mL
	Dextrose 10% slow IV		180mL	180mL	Midazolam Agitation/Sedation IV/IO		3.6mg	0.72mL
	Diphenhydramine IV/IM		36mg	0.72mL	Midazolam Agitation/Sedation IN/IM		5mg	1mL
	DuoDote™		2 doses	NA	Midazolam Seizure ≥17mo IN/IM		PediDose	-
Epinephrine Push Dose		10mcg	1mL	Morphine IV/IM/IO		3.6mg	0.9mL	
Epinephrine 0.1mg/mL IV		0.36mg	3.6mL	Naloxone IV/IM/IN		2mg	2mL	
Epinephrine 1mg/mL IM		0.36mg	0.36mL	Normal Saline IV Bolus		720mL	720mL	
Epinephrine 1mg/mL NEB		5mg	5mL	Ondansetron ODT		4mg	1 tablet	
Fentanyl IV/IM		36mcg	0.72mL	Sodium Bicarbonate		36mEq	36mL	
Fentanyl IN		50mcg	1mL					
GREEN								



**Longer than the Length-Based Resuscitation Tape**

<b>Normal Vital Signs:</b>	<b>Heart Rate:</b> 60-100	<b>Respirations:</b> 12-20	<b>Systolic BP:</b> >90
<b>Cardioversion:</b>	120 joules	150 joules	200 joules
<b>Defibrillation:</b>	200 joules	200 joules	200 joules
<b>Supraglottic Airway:</b>	igel	30-60 kg	Size 3 (12 F gastric suction catheter)
		50-90 kg	Size 4 (12 F gastric suction catheter)
		>90 kg	Size 5 (12 F gastric suction catheter)

**ADULT**

Medication	Dose	mLs	Medication	Dose	mLs
Adenosine	6 or 12mg	<b>2 or 4mL</b>	Ketorolac IM	30mg	<b>2mL</b>
Albuterol NEB	5mg	<b>6mL</b>	Lidocaine 2% IO	40mg	<b>2mL</b>
Amiodarone	300mg	<b>6mL</b>	Midazolam Agitation/Sedation IV/IO <sup>3</sup>	5mg	<b>1mL</b>
Aspirin	325mg	<b>1 tablet</b>	Midazolam Agitation/Sedation IM/IN <sup>3</sup>	5mg	<b>1mL</b>
Atropine	1mg	<b>10mL</b>	Midazolam Seizure >14y IV/IO <sup>3</sup>	5mg	<b>1mL</b>
Calcium Chloride	1gm	<b>10mL</b>	Midazolam Seizure IM/IN <sup>3</sup>	10mg	<b>2mL</b>
Dextrose 10% slow IV <sup>1</sup>	125-250mL	<b>125-250mL</b>	Morphine IV/IM/IO <sup>4</sup>	4mg	<b>1mL</b>
Diphenhydramine IV/IM	50mg	<b>1mL</b>	Naloxone IV	0.8-2mg	<b>0.8-2mL</b>
DuoDote™	1-3 doses	<b>NA</b>	Naloxone IM	2mg	<b>2mL</b>
Epinephrine <b>Push Dose</b>	10mcg	<b>1mL</b>	Naloxone IN	2-4mg	<b>2-4mL</b>
Epinephrine <b>0.1mg/mL IV</b>	1mg	<b>10mL</b>	Nitroglycerin <sup>5</sup>	0.4mg	<b>1 dose</b>
Epinephrine <b>1mg/mL IM</b>	0.5mg	<b>0.5mL</b>	Normal Saline IV Bolus	1L	<b>1L</b>
Epinephrine <b>1mg/mL NEB</b>	5mg	<b>5mL</b>	Olanzapine ODT <sup>6</sup>	10mg	<b>1 tablet</b>
Fentanyl IV/IM/IN <sup>2</sup>	50mcg	<b>1mL</b>	Ondansetron ODT	4mg	<b>1 tablet</b>
Glucagon IM	1mg	<b>1mL</b>	Ondansetron IV/IM <sup>7</sup>	4mg	<b>2mL</b>
Glucopaste	15gm	<b>1 dose</b>	Sodium Bicarbonate	50mEq	<b>50mL</b>
Ketorolac slow IV/IO	15mg	<b>1mL</b>	Tranexamic Acid (TXA) <sup>8</sup>	1gm	<b>50/100mL</b>

**BLACK****NOTES:**<sup>1</sup> Dextrose: **125mL IV** and reassess, if patient remains symptomatic, repeat x1 for a total of 250mL<sup>2</sup> Fentanyl: **50mcg (1mL) slow IV push or IM/IN**, repeat every 5min prn, maximum total dose prior to Base Contact 150mcg<sup>3</sup> Midazolam:

Agitated Delirium / Behavioral / Psychiatric Crisis

**5mg (1mL) IM/IN/IV**, repeat x1 in 5 min prn, maximum total dose prior to Base contact 10mg for Agitated Delirium (Psychiatric Crisis requires Base order prior to any medication administered)

Cardiac Dysrhythmia - sedation prior to synchronized cardioversion / transcutaneous pacing

**5mg (1mL) slow IV/IO push/IM/IN**, may repeat X1 in 5 min prn, maximum total dose prior to Base contact 10mg

Seizure - Active

**10 mg (2mL) IN/IM**, contact Base for additional dosing, with Base Contact may repeat x1 to a maximum of 20mg**5 mg (1mL) IV/IO**, if existing vascular access, repeat x1 in 2 min prn<sup>4</sup> Morphine: **4mg (1mL) slow IV/IO push or IM**, repeat every 5min prn, maximum total dose prior to Base contact 12mg<sup>5</sup> Nitroglycerin

Chest Pain – Suspected Cardiac / Chest Pain – STEMI

**0.4 mg SL** prn, repeat every 5min prn x2, total 3 doses, hold if SBP < 100mmHg or patient has taken sexually enhancing medication within 48 hours

Pulmonary Edema / CHF

**0.4mg SL**, for SBP ≥ 100mmHg; **0.8mg SL**, for SBP ≥ 150mmHg; **1.2mg SL**, for SBP ≥ 200mmHg

Repeat every 3-5 min prn x2 for persistent dyspnea, assess blood pressure prior to each administration and determine subsequent dose base on SBP as listed above. Hold if SBP

<sup>6</sup> Olanzapine ODT given once<sup>7</sup> Ondansetron IV/IM – only for 15 years of age or older<sup>8</sup> Tranexamic Acid (TXA) – 1gm(10mL) dilute in 50 or 100mL of normal saline infused over 10 minutes

## **Medical Control Guideline: CONDUCTED ELECTRICAL WEAPON**

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### **PRINCIPLE:**

1. Safety is the first priority in any situation involving the use of a conducted electrical weapon (CEW), trade name Taser®. Law enforcement should secure the scene and ensure the safety of EMS personnel before the patient is assessed or treated.
2. Aggressive or violent behavior may be symptomatic of medical conditions such as head trauma, alcohol or drug related problems, metabolic disorders, stress or psychiatric problems.
3. Concurrent intoxication with cocaine, methamphetamine, phencyclidine (PCP), or other stimulants is common among those subdued by law enforcement with electrical weapons.
4. Physical assessment should include evaluation for any potential injury that may have occurred as a result of the use of a CEW.
5. Paramedics cannot medically clear CEW patients for booking by law enforcement.

### **GUIDELINES:**

1. Do not remove CEW barbs, probes or darts unless they interfere with the patient's airway, for life-saving measures, or the individual cannot be safely transported with the barbs in place.
2. Complete a thorough physical assessment for all patients who have sustained the use of a CEW.
3. Maintain a high index of suspicion for traumatic injuries (i.e., sustained from fall) as a result of the deployment and discharge of the CEW.
4. Paramedics shall make Base Hospital Contact and transport in accordance with the protocol appropriate for the Provider Impression. For isolated CEW injury, the appropriate Provider Impression is Traumatic Injury.
5. Documentation on the Patient Care Report.

## **Medical Control Guideline: CONTINUOUS POSITIVE AIRWAY PRESSURE**

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### **PRINCIPLES:**

1. Continuous Positive Airway Pressure (CPAP) is a non-invasive, mechanical ventilatory support system. It is effective in treating patients with shortness of breath by decreasing work of breathing, improving pulmonary gas exchange and improving pulmonary compliance. CPAP decreases the need for endotracheal intubation, reduces intensive care unit admissions, and shortens hospital length of stay.
2. CPAP is approved for patients with moderate-to-severe respiratory distress who meet ALL of the following criteria:
  - a. Greater than the length of the length-based resuscitation tape (i.e. Broselow tm)
  - b. Awake
  - c. Cooperative
  - d. Able to follow commands
3. Contraindications to CPAP include:
  - a. Respiratory or cardiac arrest
  - b. Inability to protect airway
  - c. Cannot follow basic commands
  - d. Hypotension (systolic blood pressure < 90mmHg)
  - e. Tracheostomy
  - f. Vomiting
  - g. Suspected pneumothorax
  - h. Respiratory distress due to traumatic injury

### **GUIDELINES:**

1. Explain the procedure to the patient prior to starting CPAP. Patient understanding and cooperation are critical to successful treatment.
2. Titrate CPAP pressure per manufacturer's guidelines to improvement of symptoms as tolerated by patient. Improvement is demonstrated by a decrease in respiratory distress, improvement in vital signs, and/or an increase in oxygen saturation.
3. Continuously monitor vital signs, including oxygen saturation and end-tidal carbon dioxide, to ensure adequate ventilation and hemodynamic stability. Document findings at least every five minutes throughout the treatment until the transfer of care.
4. If the patient's condition worsens or is unable to tolerate CPAP, discontinue CPAP and continue to supplement oxygen per [MCG 1302](#). Be prepared to assist ventilations with a bag mask as indicated.
5. Maintain CPAP for patients who tolerate treatment until care is assumed by the receiving facility.
6. Document the patient's response to therapy, CPAP pressure (initial and at transfer of care), any adverse event while on CPAP, and rationale if CPAP is discontinued prior to the transfer of care.

**Medical Control Guideline: DRUG REFERENCE**

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<b>DRUG</b>	<b>Ref. No.</b>	<b>Date of last Revision</b>
Adenosine	1317.1	02-01-22
Albuterol	1317.3	02-01-22
Amiodarone	1317.5	01-01-20
Aspirin	1317.7	07-01-18
Atropine	1317.9	10-01-23
Calcium Chloride	1317.11	07-01-18
Dextrose	1317.13	01-01-23
Diphenhydramine	1317.15	07-01-21
Epinephrine	1317.17	02-01-22
Fentanyl	1317.19	04-01-23
Glucagon	1317.21	04-01-23
Ketorolac	1317.22	10-01-20
Lidocaine	1317.23	07-01-18
Midazolam	1317.25	10-01-23
Morphine Sulfate	1317.27	02-01-22
Naloxone	1317.29	01-01-20
Nitroglycerin	1317.31	09-01-19
Olanzapine	1317.32	04-01-23
Ondansetron	1317.33	01-01-20
Oxygen	1317.35	07-01-22
Pralidoxime Chloride (DuoDote™)	1317.37	07-01-18
Sodium Bicarbonate	1317.39	07-01-18
Tranexamic Acid (TXA)	1317.41	09-01-23

**Classification**

Antidysrhythmic

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**LA County Prehospital Indications**

Cardiac Dysrhythmia:

SVT - Narrow Complex: HR  $\geq$  150 for adults;  $\geq$ 180 for a child; and  $\geq$ 220 for infants

Perfusing unresponsive to Valsalva

Alert patients with poor perfusion

Regular/Monomorphic Wide Complex Tachycardia

Adequate perfusion

Alert patients with poor perfusion

**Other Common Indications (Not authorized for EMS administration in LA County)**

Used in hospital setting as part of drug combination for cardiac “stress testing” and diagnosis of pulmonary hypertension

**Adult Dose**

**6 or 12mg rapid IVP** (per protocol), within 1-3 seconds, followed by a rapid flush of 10mL of NS

**If no conversion after 1-2 minutes**, may repeat 12mg rapid IVP followed by rapid flush of 10mL of NS.

**Pediatric Dose**

**0.1mg/kg (3mg/mL) rapid IVP**, dose per [MCG 1309](#), maximum first dose 6mg, followed by a rapid flush of 10mL NS

**If no conversion after 1-2 minutes**, may repeat one time 0.2mg/kg (3mg/mL) followed by a rapid flush of 10mL NS, dose per [MCG 1309](#), maximum second dose 12mg

**Mechanism of Action**

Slows conduction through the AV node and interrupts AV reentry pathways as well as conduction through the sinoatrial (SA) nodes

**Pharmacokinetics**

Onset immediate, Duration < 10 secs

**Contraindications**

Sinus tachycardia or atrial fibrillation/flutter, despite rate >150

2<sup>nd</sup> and 3<sup>rd</sup> degree heart block without pacemaker

Wolff-Parkinson-White (WPW) Syndrome and atrial fibrillation (wide complex, irregular rhythm)

Sinus Node Disease (Sick Sinus Syndrome)

Heart transplant

Use of Carbamazepine (Tegretol) for seizure disorder

**Interactions**

Potentiated by blocker of nucleoside transport [e.g., carbamazepine (Tegretol)]

Antagonized by methylxanthines such as caffeine and theophylline

**Adverse Effects**

Blurred vision

Bradycardia / Asystole

Chest pain / Chest pressure

Dyspnea

Head pressure

Hypotension

Lightheadedness / Dizziness

Metallic taste / Throat tightness

Numbness / Tingling

Palpitations

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**Prehospital Considerations**

- Cannulate a large proximal vein with an 18-20g catheter. Use IV port closest to patient and immediately flush with 10mL Normal Saline to ensure rapid administration of drug.
- Run a 6 second ECG strip before, during and after drug administration.
- Patients usually have a 10 second period of escape beats or asystole before the sinus node starts up again. This is perceived as a feeling of impending death and can be extremely frightening for patients.
- If the wide-complex tachycardia is ventricular in origin, Adenosine is highly unlikely to cause successful cardioversion.

**Classification**

Sympathomimetic, B<sub>2</sub> Receptor Agonist, Bronchodilator

**LA County Prehospital Indications**

Cardiac Dysrhythmia: suspected hyperkalemia causing bradycardia

Respiratory Distress: bronchospasm caused by acute asthma, bronchitis, bronchiolitis, COPD, drug overdose, near drowning, pulmonary edema, and/or toxic gas inhalation

Pulmonary Edema/CHF: persistent wheezing despite CPAP

Traumatic Injury: suspected hyperkalemia in the setting of crush injury or potential for development of crush syndrome (administer prior to release of crushed tissue)

**Other Common Indications (Not authorized for EMS administration in LA County)**

None

**Adult Dose**

Cardiac Dysrhythmia/Crush – Evidence of or suspected hyperkalemia

**5mg (6mL) via neb**, repeat continuously until hospital arrival

Crush – at risk for Crush Syndrome

5 minutes prior to extrication: **5mg (6mL) via mask nebulization** x2 for a total dose of 10mg

Respiratory Distress, Pulmonary Edema/CHF with wheezing, Allergic Reaction with wheezing, Inhalation Injury with wheezing

**5mg (6mL) via neb or 4 puffs via Metered-Dose Inhaler (MDI)**

May repeat x2 prn for wheezing

**Pediatric Dose**

Crush – Evidence of or suspected hyperkalemia

**5mg (6mL) via neb**, repeat continuously until hospital arrival

Crush – at risk for Crush Syndrome

5 minutes prior to extrication: **5mg (6mL) via neb**, repeat immediately x1

Respiratory Distress, Allergic Reaction with wheezing, Inhalation Injury with wheezing

< 4 year of age **2.5mg (3mL) via neb or 2 puffs via MDI**

≥ 4 year of age **5mg (6mL) via neb or 2 puffs via MDI**

Repeat x2 prn, maximum 3 total doses prior to Base contact

**Mechanism of Action**

Selective beta-2 adrenergic agonist that causes relaxation of smooth muscles in the bronchial tree, decreasing airway resistance, facilitating mucous drainage and increasing vital capacity  
Shifts potassium intracellular. Has mild beta-1 activity with mild effect on heart rate.

**Pharmacokinetics**

Onset 5-15 min inhaled, Duration 3-6 hours for bronchial smooth muscle relaxation, Duration 3-4 hours for hyperkalemia shifting potassium intracellular

**Contraindications**

Do not use for patients with a known hypersensitivity/allergy to the drug

**Interactions**

Administer with extreme caution to patients being treated with MAO inhibitors or tricyclic antidepressants  
Beta blocking agents and Albuterol may each inhibit the effects of the other, monitor closely

**Adverse Effects**

Anxiety/Tremors

Hypertension

Hypokalemia

Palpitations/Tachycardia

**Prehospital Considerations**

- Young children 2-6 years old may be more prone to adverse effects
- Don't assume patients have administered their own drug properly. Do not include home doses of albuterol in your total drug administration consideration.
- Administration via MDI with spacer is typically required for this route to be effective in novice users.
- MDIs are single use and should be left with the hospital staff upon handoff of the patient.



**Classification**

Antidysrhythmic

**LA County Prehospital Indications**

Cardiac Arrest – Non-Traumatic (adult and pediatric): pulseless ventricular tachycardia or persistent/recurrent ventricular fibrillation (i.e., continued VT/VF after 3 defibrillations)

**Other Common Indications (Not authorized for EMS administration in LA County)**

Ventricular tachycardia with pulses and adequate perfusion,  
Atrial fibrillation or atrial flutter with rapid ventricular rate unresponsive to other treatments

**Adult Dose**

**300mg (6mL) IV/IO**

May repeat 150mg (3mL) IV/IO x1 prn after additional defibrillation x2, max total dose 450mg

**Pediatric Dose**

**5mg/kg (50mg/mL) IV/IO** dose per [MCG 1309](#), max total dose 300mg

**Mechanism of Action**

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

**Pharmacokinetics**

Onset minutes after IV bolus administration

**Contraindications**

None in cardiac arrest

**Interactions**

**None in cardiac arrest**

**Adverse Effects**

Bradysrhythmias  
Congestive heart failure  
Hypotension

**Prehospital Considerations**

- Monitor heart rate, blood pressure, and cardiac rhythm closely post resuscitation
- Should not be used routinely in cardiac arrest. For use only in ventricular fibrillation or ventricular tachycardia without pulses unresponsive to attempted defibrillation x2

**Classification**

Non- steroidal anti-inflammatory drug (NSAID)  
Platelet Inhibitor

**LA County Prehospital Indications**

Chest Pain – Suspected Cardiac  
Chest Pain – STEMI

**Other Common Indications (Not authorized for EMS administration in LA County)**

Mild to moderate pain  
Prophylactic use in the primary prevention of cardiovascular disease

**Adult Dose**

**325mg nonenteric/chewable tablets PO**

**Pediatric Dose**

Not recommended for pediatric administration in the out-of-hospital setting

**Mechanism of Action**

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

**Pharmacokinetics**

Onset is 5-30 min,

**Contraindications**

Known aspirin allergy, bleeding GI ulcers

Should not be administered to pediatric patients

**Interactions**

Anticoagulants and alcohol abuse potentiates risk of bleeding

**Adverse Effects**

GI bleeding  
Prolonged bleeding time

**Prehospital Considerations**

- Chewing allows for rapid absorption. Chewable preparations are preferred, because it is less likely to provoke nausea but the pill can also be swallowed if chewable not available.
- A significant portion (7%) of patients with asthma may have aspirin sensitivity. Careful respiratory monitoring should be performed on all patients with history of asthma who receive aspirin in the prehospital setting.
- Tinnitus can be a clinical symptom of aspirin overdose

**Classification**

Anticholinergic

**LA County Prehospital Indications**

Cardiac Dysrhythmia: symptomatic bradycardia in adults; suspected AV Block or increased vagal tone in pediatrics  
Hazmat exposure: organophosphate/pesticide/nerve agent poisoning with heart rate < 60 bpm, respiratory depression and/or extreme salivation

**Other Common Indications (Not authorized for EMS administration in LA County)**

End-of-life care, to dry secretions for patient comfort  
Eye disorders requiring mydriasis (pupillary dilation) for treatment/testing, administered as eye drop  
GI disorders caused by hypermobility (chronic diarrhea, irritable bowel syndrome)

**Adult Dose**

Cardiac Dysrhythmia  
**1mg (10mL) IV/IO push** repeat every 3-5 min prn, maximum total dose 3mg  
Organophosphate poisoning  
**2mg (20mL) IV/IM/IO**, may repeat every 5 min until patient is asymptomatic

**Pediatric Dose**

Cardiac Dysrhythmia  
**0.02mg/kg (0.1mg/mL) IV/IO**, dose per [MCG 1309](#), may repeat x1 in 5 min  
Organophosphate poisoning  
**0.05mg/kg (0.1mg/mL) IV/IM**, may be repeated every 5 min, maximum total dose 5mg

**Mechanism of Action**

Competitively inhibits action of acetylcholine on autonomic effectors innervated by postganglionic nerves

**Pharmacokinetics**

Peak effect in 20-30 min IM, 2-4 min IV/IO, duration 4 hr,

**Contraindications**

Tachycardia  
Thyrotoxicosis

**Interactions**

None for IV/IM/IO administration

**Adverse Effects**

Dry mouth / Thirst  
Dysrhythmias  
Flushed dry skin  
Hypertension / Hypotension  
Hyperthermia  
Increased intraocular pressure  
Mydriasis (pupil dilation)

**Prehospital Considerations**

- Use cautiously if myocardial infarction and/or ischemia is suspected, as atropine will increase myocardial O<sub>2</sub> demand, which may worsen the infarct.
- Bradycardia due to 2<sup>nd</sup> degree type II and 3<sup>rd</sup> degree heart blocks will not improve with atropine; if treatment indicated, transcutaneous pacing (TCP) should be performed.

**Classification**

Electrolyte

**LA County Prehospital Indications**

Cardiac Arrest – Non-Traumatic: suspected hyperkalemia, patients with renal failure

Cardiac Dysrhythmia: suspected hyperkalemia causing bradycardia

Overdose / Poisoning / Ingestion: calcium channel blocker toxicity

Traumatic Injury: suspected hyperkalemia in the setting of crush injury or potential for development of crush syndrome (administer prior to release of crushed tissue)

**Other Common Indications (Not authorized for EMS administration in LA County)**

Acute hypocalcemia with or without tetany

Topically for hydrofluoric acid burns

Calcium channel blocker overdose

**Adult Dose**

Cardiac Arrest

**1gm (10mL) IVP/IO**

Cardiac Dysrhythmia/Crush - Suspected hyperkalemia

**1gm (10mL) slow IV/IO push**, may repeat x1 for persistent symptoms / ECG abnormalities

Overdose / Poisoning / Ingestion - Suspected Calcium Channel Blocker Overdose

**1g (10mL) IV slow push** over 60 seconds

**Pediatric Dose**

Crush - Suspected hyperkalemia

**20mg/kg (100mg/mL) slow IV/IO push**, dose per [MCG 1309](#), repeat x1 for persistent ECG abnormalities

Overdose / Poisoning / Ingestion - Suspected Calcium Channel Blocker Overdose

**20mg/kg (100mg/mL) IV slow push**, dose per [MCG 1309](#)

**Mechanism of Action**

Essential regulator for the excitation threshold of nerves and muscles; causes significant increase in myocardial contractility and ventricular automaticity. Antidote for some electrolyte imbalances and calcium channel blocker toxicity.

**Pharmacokinetics**

Onset and peaks immediately, duration varies

**Contraindications**

Hypercalcemia

Ventricular fibrillation

**Interactions**

Inactivates or minimizes the effects of catecholamines if not flushed properly

Can cause cardiac standstill in patients taking Digoxin

**Adverse Effects**

Cardiac arrest

Hypotension or hypertension

Pain and burning at injection site

Tingling sensations

**Prehospital Considerations**

- Precipitates to form calcium carbonate (chalk) when used with sodium bicarbonate. Administer calcium chloride and sodium bicarbonate in separate IV/ IO or thoroughly flush in between administrations using at least 10mL of normal saline
- Confirm IV is patent prior to administration as extravasation causes severe tissue necrosis

**Classification**

Carbohydrate

**LA County Prehospital Indication**

Hypoglycemia: blood glucose < 60mg/dL

**Other Common Indications (Not authorized for EMS administration in LA County)**

None

**Adult Dose**

**Dextrose 10% 125 mL IV** and reassess, if patient remains symptomatic, repeat x1 for a total of 250 mL

**Pediatric Dose**

= or <24 kg: **Dextrose 10% 5mL/kg IV/IO in 1mL/kg** increments dose per [MCG 1309](#), reassess for clinical improvement after every 1mL/kg. Administer slow IVP. May repeat as needed, maximum total dose 5mL/kg. Recheck glucose prn after 3mL/kg infused.

>24 kg: **Dextrose 10% administer 125mL IV/IO** and reassess, continue infusion as needed with maximum dose of 5mL/ kg

**Mechanism of Action**

Principal form of glucose (sugar) used by the body to create energy

**Pharmacokinetics**

Onset < 1min, peak effect dependent upon degree and cause of hypoglycemia

**Contraindications**

None

**Interactions**

None

**Adverse Effects**

Pain or burning at injection site

Phlebitis or thrombosis in vein of administration

**Prehospital Considerations**

- Confirm the IV line is patent prior to administration as severe tissue necrosis may occur with extravasation.
- Report and record blood glucose levels before and after administering this solution.

**Classification**

Antihistamine

**LA County Prehospital Indications**

Allergic Reaction: itching and/or hives  
Dystonic Reaction

**Other Common Indications (Not authorized for EMS administration in LA County)**

Over-the-counter sleep aid, prevention or treatment of motion sickness, nausea and vomiting  
Mild Parkinson's disease  
Prevention of extrapyramidal symptoms in patients on antipsychotic medications

**Adult Dose**

**50mg slow IV push or 50mg IM**

**Pediatric Dose**

**1mg/kg slow IV push** one time, dose per [MCG 1309](#), if unable to obtain venous access **1mg/kg deep IM**, dose per [MCG 1309](#)

**Mechanism of Action**

Histamine H1- receptor antagonist of effector cells in respiratory tract, blood vessels, and GI smooth muscle. Possesses anticholinergic properties, resulting in antidyskinetic properties.

**Pharmacokinetics**

Onset is 15-30 min

**Contraindications**

None

**Interactions**

Increase central nervous system depression when used with alcohol and other central nervous system depressants, or MAO inhibitors

**Adverse Effects**

Confusion  
Drowsiness  
Mild hypotension  
Palpitation  
Paradoxical excitement in children  
Tachycardia

**Prehospital Considerations**

- Administer injection deep IM into a large muscle group (lateral thigh, gluteus).
- Diphenhydramine (Benadryl) does not treat anaphylaxis/airway edema; if signs of anaphylaxis present, administer epinephrine IM
- Use with caution in elderly as they have increased adverse effects such as confusion, drowsiness
- May cause paradoxical agitation in pediatric patients.

## Classification

Sympathomimetic

## LA County Prehospital Indications

Anaphylaxis

Cardiac Arrest – Non-Traumatic: cardiac arrest resuscitation, hypotension after return of spontaneous circulation (ROSC) not responsive to IV fluid resuscitation

Cardiac Dysrhythmia: symptomatic bradycardia not responsive to atropine and transcutaneous pacing for adults; and for symptomatic bradycardia unresponsive to oxygenation and ventilation for pediatric patients

Respiratory Distress / Bronchospasm: asthma, reactive bronchospasm (unlikely to benefit in COPD)

Airway Obstruction: stridor or visible airway swelling, croup/tracheitis in pediatrics

Shock / Hypotension: non-traumatic hypotension not responsive to IV fluid resuscitation

## Other Common Indications (Not authorized for EMS administration in LA County)

None

## Adult Dose

Anaphylaxis

**0.5mg (1mg/mL) IM** in the lateral thigh, may repeat every 10 min x2 prn, maximum total 3 doses

Cardiac Arrest

**1mg (0.1mg/mL) 10mL IV/IO** may repeat every 5 min x2, maximum total dose 3mg

Non-traumatic shock (including from symptomatic bradycardia or after ROSC)

**Push-dose epinephrine** – mix 9mL normal saline with 1mL epinephrine 0.1mg/mL (IV formulation) in a 10mL syringe. Administer push-dose epinephrine 1mL IV/IO every 1-5 min as needed to maintain SBP >90mmHg

Respiratory Distress/Bronchospasm

**0.5mg (1mg/mL) IM** in the lateral thigh

Airway Obstruction - Stridor

**Epinephrine (1mg/mL solution) administer 5mg (5mL) via neb**, repeat x1 in 10 min prn

Airway Obstruction – Airway swelling

**Epinephrine (1mg/mL) administer 0.5mg (0.5mL) IM**, repeat every 10 min prn x2, maximum total 3 doses

## Pediatric Dose

Anaphylaxis

**0.01mg/kg (1mg/mL) IM**, dose per [MCG 1309](#), in the lateral thigh, may repeat every 10 min x2 prn for persistent symptoms, maximum total 3 doses

Cardiac Arrest

**0.01mg/kg (0.1mg/mL) IV/IO**, dose per [MCG 1309](#), may repeat every 5 min, maximum single dose 1mg, and maximum 3 total doses

Cardiac Dysrhythmia - Symptomatic bradycardia

**0.01mg/kg (0.1mg/mL) slow IV/IO push**, dose per [MCG 1309](#)

Shock / Hypotension (including hypotension after ROSC)

**Push-dose epinephrine** – mix 9mL normal saline with 1mL epinephrine (0.1mg/mL) IV formulation in a 10mL syringe. Administer push-dose epinephrine (0.01mg/mL), dose per [MCG 1309](#) every 1-5 min as needed to maintain SBP >70mmHg

Respiratory Distress/Bronchospasm

**Epinephrine (1mg/mL) 0.01mg/kg IM** in the lateral thigh, dose per [MCG 1309](#)

Airway obstruction – Stridor from croup/tracheitis

<1 year old: **Epinephrine (1mg/mL) 2.5mL via neb**, dose per [MCG 1309](#)

≥ 1 year of age: **Epinephrine (1mg/mL) 5mL via neb**, dose per [MCG 1309](#)

Repeat x1 in 10 min prn, maximum 2 total doses prior to Base contact

Airway obstruction - Airway swelling

**Epinephrine (1mg/mL) 0.01mg/kg IM** dose per [MCG 1309](#), repeat every 10 min prn x2, maximum 3 total doses prior to Base contact

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### **Mechanism of Action**

A naturally occurring catecholamine. Acts directly on alpha and beta adrenergic receptors. It is the most potent activator of alpha receptors vasoconstricting the aorta and peripheral vasculature. Beta 1 stimulation increases inotropy, chronotropy, and AV conduction. Beta 2 stimulation causes bronchial smooth muscle relaxation and vasodilation to internal organs and skeletal muscles.

### **Pharmacokinetics**

Onset is < 2 min IV, 1-3 min IM; duration is 5-10 min IV, 20-30 min IM

### **Contraindications**

None

### **Interactions**

Can be partially deactivated by highly alkaline solutions, such as sodium bicarbonate.

### **Adverse Effects**

Anxiety  
CVA or MI (rare, IV only)  
Hypertension  
Palpitations  
Tachydysrhythmias  
Tremors

### **Prehospital Considerations**

- Inadvertent IV injection of usual IM formulation and dose constitutes a 10-fold overdose that can result in sudden severe hypertension and possible cerebral hemorrhage.



**Classification**

Synthetic opioid

**LA County Prehospital Indications**

Multiple provider impressions: pain management

**Other Common Indications (Not authorized for EMS administration in LA County)**

None

**Adult Dose**

**50mcg (1mL) slow IV/IO push or IM/IN**, repeat every 5 min prn, maximum total dose prior to Base contact 150mcg  
Contact Base for additional pain management after maximum dose administered: may repeat dose for a maximum total dose of 250mcg

**Pediatric Dose**

**1mcg/kg (50mcg/mL) slow IV/IO push or IM**, dose per [MCG 1309](#), or  
**1.5mcg/kg (50mcg/mL) IN**, dose per [MCG 1309](#)

Repeat in 5 min prn x1, maximum 2 total doses prior to Base contact

Contact Base for additional pain management after maximum dose administered: may repeat dose for a maximum 4 total doses

**Mechanism of 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

**Pharmacokinetics**

Onset is immediate; peak in 3-5 min; duration is 30-60 min

**Contraindications**

Hypersensitivity  
Pregnant patients in labor

**Interactions**

Alcohol and other central nervous system depressants potentiate its effect

**Adverse Effects**

Chest wall stiffness / Chest wall pain  
Delirium / Convulsions (uncommon)  
Muscle stiffness  
Nausea and vomiting (most common)  
Respiratory depression

**Prehospital Considerations**

- Monitor respiratory status. Respiratory depression, when it occurs, may last longer than the analgesic effect.
- Administer slowly to decrease likelihood of chest stiffness, which can be life threatening.
- Onset of fentanyl is quicker, and duration of action is shorter as compared to morphine. Unlike morphine, fentanyl does not cause histamine release. Therefore, it is unlikely to cause hypotension in therapeutic dosages.
- Naloxone can be used for reversal if needed.

**Classification**

Hormone (pancreatic)

**LA County Prehospital Indications**

Hypoglycemia: glucose <60mg/dL and venous access cannot be established

**Other Common Indications (Not authorized for EMS administration in LA County)**

Clearance of impacted esophageal foreign body (via smooth muscle relaxation) in an ED monitored setting  
Treatment of beta-blocker overdose and/or adjunctive treatment of calcium channel blocker overdose

**Adult Dose**

**1mg (1mL) IM**, may repeat in x1 in 20 min prn

**Pediatric Dose**

< 1 year of age **0.5mL (1mg/mL) IM**, may repeat in x1 in 20 min prn

≥ 1 year of age **1.0mL (1mg/mL) IM**, may repeat in x1 in 20 min prn

**Mechanism of Action**

A hormone naturally produced by pancreatic alpha cells of the islets of Langerhans. Causes breakdown of glycogen (stored in the liver) to glucose and inhibits the synthesis of glycogen from glucose. The combined actions increase the blood levels of glucose.

**Pharmacokinetics**

Onset is 5-20 min; duration is 1-1.5 hr

**Contraindications**

In patients with known insulinoma (insulin-secreting tumor), glucagon will produce worsening hypoglycemia

**Interactions**

None

**Adverse Effects**

Hypotension  
Nausea and vomiting

**Prehospital Considerations**

- Use mixture immediately after reconstitution of dry powder and provided solution.
- Patient usually awakens from hypoglycemic coma 5-20 min after glucagon injection. PO carbohydrates should be given as soon as possible after patient regains consciousness.
- Symptoms such as headache, nausea and weakness may persist after recovery from hypoglycemic reaction.
- Glucagon is effective only if there are glycogen stores in the liver. Therefore, it is unlikely to be effective in patients with severe malnutrition, adrenal insufficiency or young infants.

**Classification**

Nonsteroidal Anti-inflammatory Drug (NSAID)

**LA County Prehospital Indications**

Multiple provider impressions: pain management

**Other Common Indications (Not authorized for EMS administration in LA County)**

None

**Adult Dose**

**15mg (1mL) slow IV/IO push, or  
30mg (2mL) IM**

**Pediatric Dose**

**0.5mg/kg (15mg/mL) slow IV/IO push/IM**, dose per [MCG 1309](#) (maximum dose 15mg by any route)

**Mechanism of Action**

Reversibly inhibits cyclooxygenase-1 and 2 enzymes, which decreases formation of prostaglandin precursors. Inhibits platelet function. Ketorolac has analgesic and anti-inflammatory properties.

**Pharmacokinetics**

Onset minutes after IM/IV/IO administration

**Contraindications**

Active bleeding  
Active wheezing  
Age < 4 years old or > 65 years old  
Allergy to NSAIDs  
Current anticoagulation therapy  
Current steroid use  
Head or multisystem trauma  
History of upper GI bleeding or peptic ulcer disease  
History of renal disease or kidney transplant  
Known or suspected pregnancy  
Suspected sepsis or septic shock

**Interactions**

May enhance the adverse/toxic effect of other NSAIDs and enhance the antiplatelet effect of other agents with antiplatelet properties; it may be used if the patient is taking aspirin

**Adverse Effects**

Abdominal Pain  
Headache  
Nausea

**Prehospital Considerations**

- Review contraindications prior to administration
- One time does in the prehospital setting

**Classification**

Local Anesthetic

**LA County Prehospital Indications**

Multiple provider impressions: patients responsive to pain that have intraosseous (IO) access

**Other Common Indications (Not authorized for EMS administration in LA County)**

Topical, transmucosal or intradermal anesthesia

Ventricular arrhythmias refractory to other treatments

**Adult Dose**

**2% 40mg slow IO push over 2 minutes;** may give second dose of 20 mg x1 prn

**Pediatric Dose**

**2% 0.5mg/kg (20mg/mL) slow IO push over 2 minutes,** dose per [MCG 1309](#), not to exceed adult dose;  
may repeat second dose at half the initial dose x1 prn

**Mechanism of Action**

Inhibits sodium ion channels, stabilizing neuronal cell membranes causing a nerve conduction blockage

**Pharmacokinetics**

Onset is 2 min; peak in 3-5 min; duration is 10-20 min

**Contraindications**

None, when used for anesthesia in IO placement

**Interactions**

No significant interaction at therapeutic doses for IO placement. In larger doses, multiple interactions possible including potentiation of fentanyl and amiodarone.

**Adverse Effects**

None for IO use, high doses have been associated with increased risk of seizure

**Prehospital Considerations**

- This should be given pre-infusion if IV fluids or infusion of other medications through the IO on patients that are responsive to pain.
- Lidocaine 2% (preservative and epinephrine free) should be used.
- Slow infusion is necessary to ensure the lidocaine remains in the medullary space.
- A base order is not needed to administer lidocaine as part of the IO procedure

**Classification**

Sedative, benzodiazepine

**LA County Prehospital Indications**

Agitated Delirium: patients requiring restraints for patient and provider safety  
Behavioral / Psychiatric Crisis: patients requiring restraints for patient and provider safety  
Cardiac Dysrhythmia: sedation prior to and/or during synchronized cardioversion or transcutaneous pacing  
Sedation and amnestic agent for patients receiving manual/mechanical ventilation if already intubated  
Seizure - Active

**Other Common Indications (Not authorized for EMS administration in LA County)**

None

**Adult Dose**

Agitated Delirium / Behavioral / Psychiatric Crisis  
**5mg (1mL) IM/IN/IV**, repeat x1 in 5 min prn, maximum total dose prior to Base contact 10mg for Agitated Delirium (Psychiatric Crisis requires Base order prior to any medication administered)  
Cardiac Dysrhythmia - sedation prior to synchronized cardioversion / transcutaneous pacing  
**5mg (1mL) slow IV/IO push/IM/IN**, may repeat x1 in 5 min prn, maximum total dose prior to Base contact 10mg  
Seizure - Active  
**10mg (2mL) IM/IN**, contact Base for additional dosing  
**5mg (1mL) IV/IO**, repeat x1 in 2 min prn, maximum total dose prior to Base contact 10 mg  
With Base Contact may repeat as above up to a maximum total dose of 20mg

**Pediatric Dose**

Agitated Delirium / Behavioral / Psychiatric Crisis  
**0.1mg/kg (5mg/mL) IV** or **0.2mg/kg (5mg/mL) IM/IN**, dose per [MCG 1309](#), repeat x1 in 5 min, maximum single dose 5mg, maximum total dose prior to Base contact 10mg for Agitated Delirium (Psychiatric Crisis requires a Base order prior to any medication administered)  
Cardiac Dysrhythmia - sedation prior to synchronized cardioversion / transcutaneous pacing  
**0.1mg/kg (5mg/mL) IV/IO** or **0.2mg/kg (5mg/mL) IM/IN**, dose per [MCG 1309](#), repeat dosing every 5 min prn per Base order, maximum single dose 5mg  
Seizure - Active  
**0-16 months (Gray, Pink, Red)**  
**0.2mg/kg (5mg/mL) IM/IN**, dose per [MCG 1309](#)  
Repeat x1 in 2 min prn, up to 2 doses prior to Base contact  
  
**17 months – 5 years (Purple, Yellow, White if age unknown)**  
2.5 mg or 0.5mL IM/IN repeat x1 in 2 min prn  
Repeat x1 in 2 min prn, up to 2 doses prior to Base contact  
  
**6-11 Years (Blue, Orange, Green if age unknown)**  
5mg or 1mL IM/IN repeat x1 in 2 min prn  
Repeat x1 in 2 min prn, up to 2 doses prior to Base contact  
  
**≥12 years (Longer than the length-based tape if age unknown)**  
10 mg or 2mL IM/IN repeat x1 in 2 min prn,  
Single dose prior to Base contact

May repeat **Midazolam** as above, maximum total of 3 doses or 20 milligrams, whichever is less

**Mechanism of Action**

Binds to receptors at several sites within the CNS, potentiates GABA receptor system which produces anxiolytic,

anticonvulsant, muscle relaxant, and amnesic effects.

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**Pharmacokinetics**

Onset 3-5 min IV, 15-20 min IM, 6-14 min IN

Duration 1-6 hours IV/IM

**Contraindications**

Respiratory depression

Shock / Poor perfusion (see prehospital considerations)

**Interactions**

Risk of respiratory or central nervous system depression, increases when used with diphenhydramine, fentanyl, morphine, or other opiate or sedative medications

**Adverse Effects**

Hypotension

Respiratory depression / arrest

**Prehospital Considerations**

- Closely monitor respiratory and cardiac function after administration
- Caution in patients with suspected alcohol intoxication as midazolam can increase the risk for respiratory depression
- For patients with agitated delirium and violent behavior, IM/IN administration is recommended over IV for the initial dose for the safety of EMS personnel.
- If available, waveform EtCO<sub>2</sub> monitoring should be instituted after administration.
- For patients who are poorly perfusing and require sedation for safety (e.g., prevent inadvertent extubation) or require a painful procedure (e.g., transcutaneous pacing), one should use judgment in consultation with Base.

**Classification**

Opiate Analgesic

**LA County Prehospital Indications**

Multiple provider impressions: pain management

**Other Common Indications (Not authorized for EMS administration in LA County)**

None

**Adult Dose**

**4mg (1mL) slow IV/IO push or IM**, repeat every 5 min prn, maximum total dose prior to Base contact 12mg

Contact Base for additional pain management after maximum dose administered: may repeat dose for a maximum total dose of 20mg

**Pediatric Dose**

**0.1mg/kg (4mg/mL) slow IV/IO push or IM**, dose per [MCG 1309](#), repeat in 5 min x1, maximum 2 total doses prior to Base contact

Contact Base for additional pain management after maximum dose administered: may repeat dose for a maximum 4 total doses

**Mechanism of Action**

Narcotic agonist- analgesic of opiate receptors; inhibits ascending pain pathways, thus altering response to pain.

**Pharmacokinetics**

Onset is immediate IV, 15-30 min IM; duration is 2-7 hr

**Contraindications**

Hypotension or evidence of poor perfusion  
History of allergy to morphine or other narcotic medications  
Pregnant patients in labor

**Interactions**

Central nervous system depressants, sedatives, barbiturates, alcohol, benzodiazepines and tricyclic depressants may potentiate the central nervous system and respiratory depressant effects.

**Adverse Effects**

Decrease cough reflex  
Disorientation  
Hypotension  
Nausea and vomiting  
Respiratory depression

**Prehospital Considerations**

- Monitor vital signs at regular intervals
- Consider monitoring with EtCO<sub>2</sub> if available
- Use extreme caution in patient at risk for respiratory depression or ALOC
- Naloxone may be used for reversal of respiratory depression if needed

**Classification**

Opiate Antagonist

**LA County Prehospital Indications**

Overdose / Poisoning/ Ingestion: suspected opiate overdose with altered mental status and hypoventilation/apnea

**Other Common Indications (Not authorized for EMS administration in LA County)**

None

**Adult Dose**

**2-4 mg IN** (1mg per nostril or 4mg/0.1mL IN if formulation available) or **2mg IM** or **0.8-2mg IV push**

Maximum dose all routes 8mg, titrate to adequate respiratory rate and tidal volume

**Pediatric Dose**

**0.1mg/kg (1mg/mL) IM/IN/IV**, dose per [MCG 1309](#), or **2-4mg IN** if using pre-packaged nasal spray (1mg per nostril or 4mg/0.1mL IN depending on formulation available); excludes newborns

Maximum dose all routes 8mg, titrate to adequate respiratory rate and tidal volume

**Mechanism of Action**

Competes for and displaces narcotic molecules from opiate receptors in the brain. Reverses the respiratory depression associated with overdose of narcotic agents.

**Pharmacokinetics**

Onset is < 2 min IV, 2-10min IM; duration is 20-120 min

**Contraindications**

Hypersensitivity

**Interactions**

None

**Adverse Effects**

Nausea and vomiting

Sweating

Tachycardia

Agitation

Hypertension

Abdominal pain

Acute pulmonary edema

**Prehospital Considerations**

- Give in small increments until the desired narcotic reversal is achieved (respiratory rate 12 and adequate tidal volume).
- Duration of action of some narcotics may exceed that of naloxone; therefore, patient must be closely observed for need for repeat doses.
- Naloxone causes acute withdrawal symptoms and can precipitate acute pulmonary edema when given in large boluses to narcotic addicts. Use only enough to reverse respiratory depression.
- Naloxone is not indicated in cardiac arrest though can be given after ROSC if narcotic overdose suspected.
- Higher dose pre-packaged nasal spray should not be used in the newborn/neonate due to potential risk to precipitate withdrawal.



**Classification**

Nitrate Vasodilator

**LA County Prehospital Indications**

Chest Pain – Suspected Cardiac

Chest Pain – STEMI

Pulmonary Edema / CHF

**Other Common Indications (Not authorized for EMS administration in LA County)**

Rapid blood pressure lowering in hypertensive emergency

**Adult Dose**

Chest Pain – Suspected Cardiac / Chest Pain – STEMI

**0.4 mg SL** prn, repeat every 5 min prn x2, total 3 doses, hold if SBP < 100mmHg or patient has taken sexually enhancing medication within 48 hours

Pulmonary Edema / CHF

**0.4mg SL**, for SBP ≥ 100mmHg

**0.8mg SL**, for SBP ≥ 150mmHg

**1.2mg SL**, for SBP ≥ 200mmHg

Repeat every 3-5 min prn x2 for persistent dyspnea, assess blood pressure prior to each administration and determine subsequent dose base on SBP as listed above. Hold if SBP < 100mmHg

**Pediatric Dose**

Not recommended for pediatric administration

**Mechanism of Action**

Organic nitrate which causes systemic venous dilatation, decreasing preload. Cellular mechanism: nitrate enters vascular smooth muscle and is converted to nitric oxide leading to vasodilation. Relaxes smooth muscle via dose-dependent dilation of arterial and venous beds to reduce both preload and afterload, and myocardial oxygen demand. Also improves coronary collateral circulation. Lowers BP, increases heart rate and occasional paradoxical bradycardia.

**Pharmacokinetics**

Onset is 1-3 min SL or TM; duration is 20-30 min

**Contraindications**

Use of sexually enhancing/erectile dysfunction medications such as sildenafil, tadalafil or vardenafil within the past 48 hours

Hypotension with SBP < 100mmHg

Suspected cardiac tamponade

**Interactions**

Alcohol, opiates and antihypertensive agents may compound hypotensive effects. Patients taking sexually enhancing/erectile dysfunction medications are at risk for severe, prolonged hypotension leading to death.

**Adverse Effects**

Circulatory Collapse

Dizziness

Headache

Hypotension / Postural Hypotension

Syncope

Weakness

**Prehospital Considerations**

- Caution advised in suspected intracranial hemorrhage or stroke patients

**Classification**

Atypical anti-psychotic

**LA County Prehospital Indications**

Agitation in a cooperative patient (able to self-administer medication)

**Other Common Indications (Not authorized for EMS administration in LA County)**

None

**Adult Dose**

**10 mg ODT given ONCE**

**Pediatric Dose**

**10mg ODT given ONCE** for pediatric patients longer than the length-based resuscitation tape

**Mechanism of Action**

2<sup>nd</sup> generation anti-psychotic. Antagonizes serotonin 5-HT, dopamine, histamine and alpha-1 receptors. The precise mechanism is unknown but thought to be mediated through serotonin 5-HT and dopamine receptor sites.

**Pharmacokinetics**

Onset is 10-15 min; duration is hours

**Contraindications**

Pregnancy  
Dementia related psychosis  
Patients  $\leq 14$  years AND on the length-based resuscitation tape  
Ondansetron co-administration (QT prolongation)

**Interactions**

CNS Depressants (enhances sedative effect)  
Blood pressure lowering agents (enhances hypotensive effect)  
QT prolonging drugs (additive prolongation of QT may produce torsade de pointes/polymorphic ventricular tachycardia)

**Adverse Effects**

Dry mouth  
Dystonic reaction  
Drowsiness  
GI upset  
Headache  
Orthostatic hypotension  
Sedation

**Prehospital Considerations**

- Caution use in patients  $>70$  years of age.
- May cause prolonged QT interval. Caution in patients with known prolonged QT syndrome or recent/simultaneous use of other QT-prolonging drugs.
- Should not be administered in patients known to be pregnant, regardless of gestational age.
- Patients with known schizophrenia or bipolar disorder that are symptomatic (i.e., hearing voices, paranoid thoughts) may benefit most for symptom management. May be administered safely for undifferentiated agitation.

- Monitor airway and sedation, especially if concomitant CNS depressant use is suspected as depressant effects may be enhanced.
- Look Alike; Sound Alike medications are defined as those medications when written or verbally pronounced have the potential to lead to a medication error by mimicking the appearance or sound of another medication. The drug names Olanzapine and Ondansetron are similar enough to cause confusion. A second check of drug names should be performed before administration.

**Classification**

Antiemetic

**LA County Prehospital Indications**

Multiple provider impressions: Nausea and/or vomiting, or prior to fentanyl or morphine administration to reduce potential for nausea/ vomiting

**Other Common Indications (Not authorized for EMS administration in LA County)**

None

**Adult Dose**

**4 mg ODT/IV/IM**, may repeat x1 in 15 min prn

**Pediatric Dose**

**4 mg ODT**, only for 4 years of age or older

**Mechanism of Action**

Mechanism of action has not been fully characterized but believed to function via serotonin antagonism at central and/or peripheral receptors. Serotonin receptors of the 5-HT<sub>3</sub> type are present both peripherally on vagal nerve terminals and centrally in the chemoreceptor trigger zone of the area of the medullary structure that controls vomiting.

**Pharmacokinetics**

Onset is 1-5 min; duration is 4-6 hr

**Contraindications**

Known allergy to Ondansetron  
Pregnancy, regardless of gestational age

**Interactions**

Amiodarone and other QT prolonging drugs (additive prolongation of QT may produce torsade de pointes/polymorphic ventricular tachycardia)

**Adverse Effects**

Constipation  
Headache  
QT prolongation  
Sedation

**Prehospital Considerations**

- May cause prolonged QT interval. Caution in patients with known prolonged QT syndrome or recent/simultaneous use of other QT-prolonging drugs.
- Should not be administered in patients known to be pregnant, regardless of gestational age.
- Peak activity is decreased by approximately 40% in oral administration, compared to IV, due to first pass metabolism in the liver.

**Classification**

Gas

**LA County Prehospital Indications**

Multiple provider impressions: hypoxia SPO<sub>2</sub> <94% on room air, respiratory or cardiac arrest, shock, anaphylaxis, traumatic brain injury, carbon Monoxide exposure/poisoning/toxicity, suspected pneumothorax

**Other Common Indications (Not authorized for EMS administration in LA County)**

Chronic hypoxia in patients with restrictive lung disease

**Adult and Pediatric Dose**

<b>Delivery Device</b>	<b>Flow Rate</b>	<b>% Delivered</b>
Nasal Cannula	1-6 L/min	22-44%
Simple Face Mask	8-10 L/min	40-60%
Face Mask with O <sub>2</sub> Reservoir	15 L/min	90%
Bag-Mask with O <sub>2</sub> Reservoir	15 L/min	90%
ET with Bag with O <sub>2</sub> Reservoir	15 L/min	100%
ET with T-Tube	15 L/min	70%
Supraglottic Airway (King LT)	15 L/min	90%

**Mechanism of Action**

Oxygen is a tasteless, odorless gas transported by hemoglobin in the blood to organ tissues. It is required for the breakdown of glucose into a useable energy form (aerobic metabolism). Therapeutic oxygen administration increases the oxygen concentration in the alveoli, which in turn increases the oxygen saturation of available hemoglobin.

**Pharmacokinetics**

Onset is immediate; duration is < 2 min

**Contraindications**

None

**Adverse Effects**

High flow O<sub>2</sub> (100%) by mask may produce a 30% decrease in coronary blood flow in as little as 5 min, and may decrease the efficiency of nitroglycerin.

In patients with COPD or other chronic lung disease, high inspired O<sub>2</sub> concentration may decrease respiratory drive and cause CO<sub>2</sub> retention.

O<sub>2</sub> will dry mucus membranes.

**Classification**

Cholinesterase Reactivator

**LA County Prehospital Indications**

HAZMAT Exposure: nerve agent or organophosphate poisoning

**Other Common Indications (Not authorized for EMS administration in LA County)**

Antidote to toxicity from agents (neostigmine, pyridostigmine) used in treatment of myasthenia gravis

**Adult Dose**

Given in conjunction with atropine as a DuoDote injection – Atropine 2.1mg and Pralidoxime Chloride 600mg (2PAMCl). Medications delivered sequentially by one syringe into 2 different areas of the muscle.

Mild Exposure **DuoDote™ IM x1**

Moderate Exposure **DuoDote™ IM x2**, one after another

Severe Exposure **DuoDote™ IM x3**, one after another

**Pediatric Dose**

Pediatric patients **longer** than the length-based resuscitation tape (Broselow™) should receive adult dose  
Pediatric patients between **3-36kg** body weight, based on measurement using the length-based resuscitation tape (Broselow™), should be treated as follows:

Mild Exposure **Atropine (0.1mg/mL) 0.02mg/kg IV/IM**, dose as per [MCG 1309](#)

Moderate Exposure **1 DuoDote™ IM**

Severe Exposure **1 or 2 DuoDote(s)™ IM**, one after the other when applicable, based on the table below:

Avg. Wt. (kg)	Color	Initial Emergency Dose
4	Grey	1 DuoDote™
6.5	Pink	
8.5	Red	
10.5	Purple	
13	Yellow	
16.5	White	
20.5	Blue	
26	Orange	2 DuoDotes™
33	Green	

**Mechanism of Action**

Reactivates cholinesterase by displacing the enzyme from its receptor sites. The free enzyme then can resume its function of degrading accumulated acetylcholine, thereby restoring normal neuromuscular transmission. Pralidoxime also detoxifies some organophosphates by direct chemical reaction.

**Pharmacokinetics**

Onset is 2-3 min; peak effect in 5-15 min; duration is 2-3 hr

**Contraindications**

Poisonings with carbamate insecticide Sevin, inorganic phosphates, organophosphates with no anticholinesterase

**Interactions**

None

**Adverse Effects**

Dizziness

Blurred vision

Hypertension

Laryngospasm

Tachycardia

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**Classification**

Electrolyte / Alkalinizing Agent

**LA County Prehospital Indications**

Cardiac Arrest – Non-Traumatic: suspected hyperkalemia, patients with renal failure

Cardiac Dysrhythmia: suspected hyperkalemia causing bradycardia

Overdose / Poisoning / Ingestion: suspected tricyclic overdose with ECG changes

Traumatic Injury: suspected hyperkalemia in the setting of crush injury or potential for development of crush syndrome (administer prior to release of crushed tissue)

**Other Common Indications (Not authorized for EMS administration in LA County)**

None

**Adult Dose**

**50mEq (50mL) slow IV/IO push**

For crush injury repeat x1 for persistent ECG abnormalities

**Pediatric Dose**

**1mEq/kg (1mEq/mL) slow IV push**, dose per [MCG 1309](#)

For crush injury, repeat x1 for persistent ECG abnormalities

**Mechanism of Action**

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

**Pharmacokinetics**

Onset is < 15 min (observed < 5 for tricyclic overdose); clinical effect in < 15 min; duration is 1-2 hr

**Contraindications**

Evidence of pulmonary edema

Hypernatremia or hypocalcemia

**Interactions**

Precipitates to form calcium carbonate (chalk) when used with calcium chloride or calcium gluconate.

Administer calcium chloride and sodium bicarbonate separately.

Can reduce potency of epinephrine, flush line after administration.

**Adverse Effects**

Extracellular alkalosis

Tissue damage if IV infiltrates

Pulmonary edema

**Prehospital Considerations**

- Multiple doses may be needed in TCA overdose when indicate

**Classification**

Antifibrinolytic

**LA County Prehospital Indications**

Adult patients within 3 hours of traumatic injury with suspected internal truncal hemorrhage and systolic blood pressure (SBP) < 90mmHg or heart rate>SBP

Adult patients within 3 hours of traumatic injury with uncontrolled external/extremity hemorrhage despite applying pressure, and use of hemostatic agents and tourniquets where appropriate

Adult patients with post-partum hemorrhage as evidenced by ongoing bleeding and systolic blood pressure (SBP) < 90mmHg or heart rate>SBP or estimated blood loss >500mL

**Other Common Indications (Not authorized for EMS administration in LA County)**

Confirmed traumatic brain injury with intracranial hemorrhage on CT scan

Uncontrolled epistaxis

Dental bleeding

Surgical bleeding

Heavy menstrual bleeding (menorrhagia)

Bleeding prophylaxis in patients with hemophilia (pre-procedure)

**Adult Dose**

**1 gram in 50 or 100mL of Normal Saline infused over 10 minutes**

**Pediatric Dose**

**Not applicable**

**Pharmacokinetics**

Onset is 5-15 min; duration is 2-3 hours

**Contraindications**

Pediatric patients ≤14 years of age (or within the length-based resuscitation tape if age unknown)

Greater than 3 hours post injury/delivery

Isolated traumatic brain injury

Traumatic arrest with CPR >5 minutes

Active known thrombotic disease (e.g., DVT, PE)

Known allergic reaction to TXA

**Interactions**

None for EMS

**Adverse Effects**

Hypotension (related to infusion rate)

Seizure

Nausea/vomiting

Dizziness

Visual disturbances (blurry vision, color distortion)

**Prehospital Considerations**

- It is important to label the infusion bag with TXA 1 gram.
- Rapid infusion can increase risk of hypotension; administer slowly over 10 minutes.
- Consider ondansetron IV/IO to prevent nausea/vomiting.



## Medical Control Guideline: LEVEL OF CONSCIOUSNESS

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### PRINCIPLE:

1. Evaluation and documentation of the patient's level of consciousness are key components of a thorough patient assessment.
2. The patient's baseline level of consciousness should be taken into consideration when evaluating whether the altered level of consciousness (ALOC) finding represents an acute change or is normal for the patient.
3. Signs and symptoms of ALOC may present as disorientation to person, place or time; confusion; lethargy; impaired cognition; coma; inappropriate aggressiveness; or hostility. These findings should alert EMS personnel to the possibility that the patient may have a serious underlying medical condition.
4. If the patient has ALOC, evaluation of past medical history, including history of ALOC reported by patient or family members, may provide clues to the cause of the patient's ALOC.

### GUIDELINES:

1. Assess orientation by asking the patient the following:
  - a. Name
  - b. Where they live/where they are
  - c. Day of week/year/time of day
 Patients unable to reasonably answer one or more of the above shall be considered to have ALOC.
2. Utilize the appropriate Glasgow Coma Scale (GCS) to assess the neurological status of all patients. Report and document the GCS in the following order: eye opening, verbal response, and motor response.

	Adult	Child (1-4 yrs.)	Infant
<b>EYE OPENING</b>			
<b>4</b>	Spontaneous	Spontaneous	Spontaneous
<b>3</b>	To voice	To voice	To shout
<b>2</b>	To pain	To pain	To pain
<b>1</b>	None	None	None
<b>VERBAL RESPONSE</b>			
<b>5</b>	Oriented	Oriented	Smiles and coos appropriately
<b>4</b>	Confused	Confused	Cries and consolable
<b>3</b>	Inappropriate	Inappropriate	Persistent inappropriate crying and/or screaming
<b>2</b>	Incomprehensible	Incomprehensible	Grunts or is agitated or is restless
<b>1</b>	None	None	None
<b>MOTOR RESPONSE</b>			
<b>6</b>	Obedient	Obeys command	Spontaneous
<b>5</b>	Purposeful	Localizes to pain	Localizes to pain
<b>4</b>	Withdraws to pain	Withdraws to pain	Withdraws to pain
<b>3</b>	Flexion (decorticate)	Flexion (decorticate)	Flexion (decorticate)
<b>2</b>	Extension (decerebrate)	Extension (decerebrate)	Extension (decerebrate)
<b>1</b>	None	None	None

**NOTE: For patients unable to communicate or patients with a language barrier, estimate appropriateness of motor response, obedience, and verbal response by consulting with the family and/or primary caregiver(s), if applicable.**

3. If the patient has ALOC consider possible causes using AEIOU-TIPS:
  - A** – Alcohol, abuse of substances
  - E** – Electrolytes
  - I** – Infection
  - O** – Oxygen (hypoxia), overdose
  - U** – Uremia
  - T** – Trauma, tumor, child maltreatment, toxic substance (or adverse reactions to medications
  - I** – Insulin (hypoglycemia)
  - P** – Poisoning, Psych
  - S** – Seizures, Sepsis, Stroke, Subarachnoid Hemorrhage
4. Perform an on scene assessment, obtain history from caregivers including baseline functional status, and complete physical assessment including neurological exam to evaluate patient for signs of stroke.
5. Point of care testing should include pulse oximetry, glucose testing, and cardiac monitoring to include 12-lead ECG in patients with suspected cardiac ischemia or dysrhythmia.

## **Medical Control Guideline: MECHANICAL CIRCULATORY SUPPORT DEVICES**

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### **PRINCIPLES:**

1. A Mechanical Circulatory Support (MCS) device is an implanted device that is used to partially or completely replace the function of a failing heart in adults and children. MCS devices may be used as a bridge to transplant or as destination therapy for those who are not transplant candidates.
2. There are several types of MCS devices. A ventricular assist device (VAD) can support the function of the left ventricle with a left ventricular assist device (LVAD), the right ventricle (RVAD), or both ventricles (biventricular device). A total artificial heart (TAH) replaces the heart itself. The most common device is currently a LVAD.
3. MCS patients have a coordinator available 24 hours a day who will provide direction on managing the device. Contact information for the device coordinator may be located on the device, refrigerator, medical-alert bracelet or on a card in the patient's wallet.
4. The patient and family members receive extensive training on their specific MCS device and should be utilized in the care of the patient.
5. Many MCS device patients are on anticoagulants and prone to bleeding.
6. MCS device patients are preload dependent and may be harmed by vasodilators (e.g., nitrates).
7. Most MCS device patient emergencies will NOT be related to malfunction of the device.

### **Ventricular Assist Devices (VAD)**

8. Due to the continuous (non-pulsatile) flow of VAD devices, vital signs such as blood pressure, heart rate, and pulse oximetry are unobtainable or unreliable and perfusion status should be based on the clinical exam. Capnography will read accurately and can provide valuable information on the patient's perfusion status.
9. All VAD patients can be defibrillated and cardioverted, if indicated.
10. Chest compressions may dislodge the internal VAD tubes from the heart, causing the patient to bleed into the thoracic and/or abdominal cavities; however, chest compression can be performed if needed on VAD patients.

### **Total Artificial Heart (TAH)**

11. The TAH produces pulsatile flow with a palpable pulse and measurable blood pressure.
12. TAH patients cannot be defibrillated or cardioverted and do not produce an ECG tracing.
13. Systolic hypertension increases afterload and may lead to pulmonary edema. In this situation, careful administration of vasodilators may be considered.

14. Chest compressions should not be performed on TAH patients because non-compressible mechanical chambers have replaced the ventricles.

**GUIDELINES:**

1. If there is concern for device malfunction, call the MCS device coordinator directly to assist with troubleshooting.
2. Mechanical Circulatory Device resources are available 24/7 at the following institutions:  
  
Cedars-Sinai Medical Center – (310) 887-0599  
Ronald Reagan UCLA Medical Center – (310) 825-6301, pager #93544  
Keck Hospital of USC – (323) 442-6077
3. When a MCS patient is experiencing signs and symptoms related to the device, every effort should be made to transport the patient to their MCS hospital. Allow the family member or caregiver to ride with the patient if treatment and space permit.
4. If the MCS coordinator is not reachable and/or additional orders are required, contact the Base hospital.
5. Treat MCS patients by the appropriate treatment protocol, based on your provider impression.
6. Attempt to locate an Advanced Healthcare Directive and/or a Physician Orders for Life-sustaining Therapy (POLST). Most MCS device patients have made end-of-life care decisions.
7. Given that MCS devices are preload dependent, administer fluids early when directed by the Treatment Protocol.
8. All of the patient's MCS device equipment must accompany them to the hospital. Make sure all equipment is safely secured prior to transport to ensure that the driveline is not pulled or cut during transport. Spinal motion restriction and/or splinting may be modified to protect the integrity of the MCS device equipment.

**Ventricular Assist Devices (VAD)**

9. Do not administer nitroglycerin; give only aspirin and morphine or fentanyl when treating chest pain suspected cardiac or STEMI.
10. Utilize clinical parameters for patient assessment (e.g., skin color, capillary refill, level of consciousness and general appearance), because these patients will not have a blood pressure and/or palpable pulse.
11. The patient's underlying rhythm only requires treatment if the patient has signs of poor perfusion. If external defibrillation or cardioversion is necessary, apply the pads as to avoid an internal Pacemaker/Implanted Cardioverter Defibrillator (ICD) and use the standard amount of energy. DO NOT disconnect the system controller from the percutaneous lead (driveline) or stop the pump prior to delivering the shock.

12. For patients in cardiac arrest, assess for VAD malfunction in consultation with the device coordinator. Chest compressions should only be initiated if the VAD is functioning and the patient remains in cardiac arrest or if the VAD cannot be fixed and resuscitation is in agreement with the patient's Advanced Health Care Directive or Standardized Patient-Designated Directives (e.g., POLST, State DNR Form).
13. In an unconscious, pulseless patient with a VAD, a capnography reading of < 20 is an indicator of poor systemic perfusion and should prompt initiation of chest compressions.

**Total Artificial Heart (TAH)**

14. Do not administer epinephrine. The resulting increase in afterload may cause pulmonary edema and circulatory collapse.
15. For patients in respiratory distress with a systolic blood pressure >150mmHg, administration of nitroglycerin should be considered. Alternatively, the patient may be assisted in self-administration of their home dose of oral hydralazine.
16. For patients in cardiac arrest, assess for TAH malfunction in consultation with the device coordinator. Do not perform chest compressions or attempt defibrillation. The only therapeutic option is to restore the function of the device.

## Medical Control Guideline: MEDICATION ORDERS / ADMINISTRATION

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### PRINCIPLES:

1. A complete and accurate medication order is essential for patient care.
2. Confirmation of correct medication by two EMS providers (EMT/paramedic or paramedic/paramedic) should be performed prior to medication administration.
3. If Base Contact is made, closed-loop communication (repeating orders back to the base hospital and to paramedic partner) reduces medication errors.

### GUIDELINES:

1. Base hospitals must provide complete medication and fluid orders to include:
  - a. Name of medication
  - b. Color code of the patient, if applicable
  - c. Dose (mg and mL to be delivered)
  - d. Route of administration per L.A. County protocols
    - i. Intravenous (IV)
    - ii. Intramuscular (IM)
    - iii. Intranasal (IN)
    - iv. Intraosseous (IO)
    - v. Nebulized (via neb)
    - vi. Orally Disintegrating Tablet (ODT)
    - vii. Per Os/Oral (PO)
    - viii. Rapid infusion (IV/IO) – fluid administration as quickly as possible
    - ix. Slow IV/IO push – dose administered over 60 seconds
    - x. Sublingual (SL)
  - e. Frequency of administration, if applicable
2. A minimum of two EMS providers (EMT/paramedic or paramedic/paramedic) should confirm correct medication prior to medication administration.
  - a. The EMT and paramedic will work together to identify the correct medication and the paramedic will confirm drug dosing and route.

- i. The EMT will visually show the drug to the paramedic who will then confirm the name of the medication and the formulation verbally.
    - ii. The paramedic will then use [MCG 1309](#) to determine the route and dose based on color code which will be delivered in mLs to the patient.
  - b. The paramedic not administering the medication will work together with the paramedic administering the medication ("patient man") to identify the correct medication, route, and dose.
    - i. The paramedic not administering the medication will visually show the medication to the patient man. The patient man will confirm the name of the medication and the formulation verbally.
    - ii. The patient man will then use [MCG 1309](#) to determine the route and dose based on the color code which will be verbally communicated back to the second paramedic prior to the delivery of the medication in mLs to the patient.
3. If Base contact is made prior to administration, the paramedic will repeat the medication order including name of medication, number of mg or mcg, followed by mLs and color code, as applicable, to the base hospital.
4. Base personnel who provide pro re nata (PRN) orders should have indications for administration as well as complete a full order including name of medication to be administered, mg or mcg, mLs, route, and color code as applicable.
  - a. The paramedic administering the drug will repeat these back to the Base personnel as a secondary check and document the order.
5. Base personnel, as applicable, and the paramedic should document all medications administered on the Base Hospital Form and EMS patient care record.
6. All adverse events should be reported in the patient care record including interventions taken to treat the event (e.g., oxygen, suction, fluids). Any adverse events should be communicated to the receiving emergency department staff on transfer of care.

**Medical Control Guideline: MONITORING TRANSFUSION OF BLOOD PRODUCTS**

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**PRINCIPLES:**

1. Patients in hemorrhagic shock may need to be transferred to a tertiary care or trauma center with blood/blood product transfusions in process as part of emergency resuscitation.
2. Blood products include packed red blood cells (PRBCs), whole blood, fresh frozen plasma (FFP), platelets, cryoprecipitate, and prothrombin complex concentrates.
3. The Los Angeles County EMS Agency does not authorize EMS personnel to start, hang or otherwise initiate the infusion of blood products.
4. Destination of the patient for which paramedics transport while monitoring blood product transfusions is determined by current Los Angeles County EMS Agency destination policy ([Ref. No. 502 Patient Destination](#)).
5. Transfusion reactions are defined as follows:
  - a. Allergic reaction: hives or itching only, without signs of anaphylaxis.
  - b. Anaphylaxis: allergic reaction with angioedema, wheezing, respiratory distress, vascular instability, vomiting, diarrhea and/or shock. Rash may or may not be present.
  - c. Hemolytic transfusion reaction: life threatening reaction that may present with fever, headache, back pain, nausea, hypotension and pain at the infusion site.
  - d. Volume overload: may develop pulmonary edema and respiratory distress.

**GUIDELINES:**

1. Before accepting responsibility for the patient, confirm with a nurse or physician from the transferring facility, that the name on the patient's armband and blood bank number on the blood transfusion form is the same as the name and blood bank number on the unit(s) of blood product which is (are) infusing. For uncrossmatched blood products (which will not have a patient name), confirm the uncrossmatched blood product transfusion is for the patient being transferred. A patient identification band must be present prior to transfer.
2. Document in the ePCR the physician order for the blood product(s) to be infused, which shall include the following:
  - a. Type of blood product being infused
  - b. Rate of the transfusion
  - c. Name of the transferring/ordering physician
3. Monitor all patients continuously during transport with a cardiac monitor and a noninvasive blood pressure monitor as per [MCG 1308](#).
4. In patients with suspected transfusion reactions (including hemolytic reactions, allergic reactions, anaphylactic reactions, and volume overload):



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- a. Stop the blood product transfusion
  - b. Disconnect the IV tubing and flush the port
  - c. Initiate care per applicable Treatment Protocol(s)
  - d. Provide the remaining blood product and tubing to the receiving hospital
5. Document volume of blood product transfused, any suspected transfusion reaction on the ePCR and communicate any reaction and interventions taken to receiving emergency department staff.
6. All cases for which this MCG is implemented will be audited by the EMS provider agency and reports sent to the Los Angeles County EMS Agency as requested.
7. The receiving emergency department staff will be responsible to communicate transfusion related adverse events to the transferring facility emergency department staff.

## Medical Control Guideline: NEEDLE THORACOSTOMY

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### PRINCIPLES:

1. Needle thoracostomy is an uncommon procedure that may provide life-saving treatment of a tension pneumothorax during prehospital care and transport.
2. Risk of tension pneumothorax increases significantly after initiation of positive pressure ventilation (e.g., bag-mask ventilation, placement of advanced airway), which can convert a simple pneumothorax into a tension pneumothorax.
3. Needle thoracostomy should be performed, if indicated as outlined in Guidelines 2.1 below, prior to Base contact on any of the following patients:
  - PEA cardiac arrest with multisystem blunt trauma
  - Penetrating trauma which includes the thorax and abdomen or who have evidence of chest trauma with profound shock and signs of tension pneumothorax.
4. PEA cardiac arrest maybe due to tension pneumothorax after positive pressure ventilation.
5. ALS and Paramedic Assessment Units should carry an 8cm (3.0 – 3.5 inches) 14G commercial needle decompression device for the performance of emergency needle thoracostomy.
6. The procedure for needle thoracostomy in pediatric patient is unchanged from that of adults. It is expected that a shorter distance will need to be traversed to enter the pleural space in children due to the thinner chest wall.
7. Maintenance of skills requires regular in-service training on recognition and treatment of tension pneumothorax. It is strongly recommended that this training be completed in a simulation environment, rather than through slide-based or didactic learning.

### GUIDELINES:

1. Manage patient with traumatic injuries as per *TP 1243/1243-P, Traumatic Arrest* and/or *TP 1244/1244-P, Traumatic Injury*.
2. Consider tension pneumothorax in the following patients.
  - 2.1. Trauma patients with obvious chest trauma (e.g., open chest wounds, evidence of crush or flail segment) or with mechanism consistent with chest trauma who demonstrate:
    - a. Decreased or absent breath sounds on affected side, **and**
    - b. SBP < 90mmHg (adult), < 70mmHg (child and infant), **and**
    - c. One or more of the following:

- i. Altered mental status
  - ii. Severe respiratory distress, with RR > 30 breaths per minute or < 10 breaths per minute
  - iii. Severe hypoxia, with < 90% oxygen saturation
  - iv. Cool, pale, moist skin
- 2.2 Traumatic full arrest with PEA rhythm (bilateral needle thoracostomy should be performed if evidence of chest wall trauma)
- 2.3 Trauma patients requiring positive-pressure ventilation who develop hypoxia or severe hypotension (SBP < 90mmHg), without alternate cause, after initiation of positive pressure ventilation
- 2.4 PEA cardiac arrest that develops after initiating positive pressure ventilation
3. Immediately place all patients with suspected pneumothorax on high flow oxygen by non- rebreather mask.
4. If the patient is awake and alert, explain medical condition and rationale for the procedure to the patient.
5. Prepare skin of chest with alcohol or chlorhexidine prior to skin puncture.
6. Insert the needle-catheter perpendicular to chest just above the 3<sup>rd</sup> rib at the mid-clavicular line (second intercostal space) or just above the 5<sup>th</sup> or 6<sup>th</sup> rib (fourth or fifth intercostal space) just anterior to the midaxillary line per training. Only place in sites for which paramedic has undergone specific training.
7. Attach a syringe to the thoracostomy needle during procedure, if possible. Advance needle perpendicular to the chest wall while withdrawing on syringe until air is easily aspirated into the syringe (confirming penetration of lung pleura). Advance needle an additional 5 mm, then over the needle advance catheter further before withdrawing needle and disconnecting the syringe. For pediatric patients, insert no more than half the length of the needle or 1.5 inches (3.8 cm) as this is adequate in children under 15 years to enter the pleural space.
8. Secure catheter to skin with tape or commercial device, if available. Do not place a one-way valve on the catheter hub.
9. If the patient has an open or sucking chest wound, cover the wound with a commercially available vented chest seal or vented (3-sided) occlusive dressing. Placement of a vented dressing can prevent conversion of an open pneumothorax to a tension pneumothorax. However, tension pneumothorax may still develop in the presence of a vented dressing and should be treated with needle thoracostomy. Furthermore, needle thoracostomy in a patient with evidence of tension pneumothorax should not be delayed for placement of dressing.
10. If a patient does not improve after needle thoracostomy, or improves but later decompensates, and there is concern for catheter dislodgement or obstruction, needle thoracostomy may be repeated on the same side or at an alternate location.

**Medical Control Guideline: NALOXONE DISTRIBUTION BY EMS PROVIDERS  
(LEAVE BEHIND NALOXONE)**

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**PURPOSE:** To authorize and describe procedures for EMS personnel to distribute naloxone kits to individuals at risk for experiencing or witnessing an opioid overdose.

**PRINCIPLES:**

1. Opioid overdose is one of the leading causes of death in the United States.
2. Naloxone is a life-saving medication that reverses an opioid overdose by blocking the opioid receptor, reversing the toxic effects of the overdose, with minimal to no effect on an individual if opioids are not present in their system.
3. Providing overdose prevention, recognition, and response education to drug users and their neighbors, friends, and families is a harm reduction intervention that saves lives.
4. The Naloxone Distribution Project (NDP) is a federally funded “Leave Behind Naloxone” initiative administered by the Department of Health Care Services (DHCS) in California to combat opioid overdose-related deaths through the free distribution of naloxone to qualifying entities for the purpose of distribution to persons at risk for opioid overdose and those in a position to assist those persons at risk. EMS agencies in California are qualified entities to participate in this program.
5. EMS personnel are encouraged to distribute naloxone to individuals at risk for opioid overdose, or any person in a position to assist individuals at risk, and train these individuals on appropriate naloxone use.

**GUIDELINES:**

1. EMS provider agencies may obtain naloxone kits, intended for layperson use, for distribution by EMS personnel to opioid overdose at risk individuals through the following mechanisms:
  - a. NDP by completing and submitting an application to the DHCS to participate in the NDP program (free of charge).  
<https://www.dhcs.ca.gov/individuals/Documents/NDP-Application.pdf>
  - b. EMS provider’s normal supply chain
2. Naloxone shall not be distributed to patients or bystanders from the responding EMS unit’s (i.e., ALS/Assessment Unit) inventory supply.
3. EMS personnel may distribute naloxone, after performing a patient assessment, to individuals who are at risk for opioid overdose or to persons in a position to assist the individual at risk if the at-risk individual meets any ONE of the following criteria:
  - a. The individual was treated by EMS for an opioid overdose with naloxone or supportive care
  - b. The individual’s history or physical exam demonstrates evidence of illicit opioid use (history of intravenous drug use, track marks, needles present, etc.)

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- c. The individual's history or physical exam demonstrates prescription opioid use (prescribed or recreational)
  - d. The physical environment has opioids or drug paraphernalia present
- 4. Distribution of naloxone to opioid at risk individuals must occur in accordance with the following procedures:
  - a. Distribution Process
    - i. Assess and confirm the individual receiving the naloxone has decision making capacity
    - ii. Offer leave behind naloxone to the patient, and/or family
    - iii. If the individual agrees to receive naloxone, perform just-in-time training on correct use to the patient and family/supporting persons, if present
    - iv. Document naloxone distribution in the ePCR (distributed "leave behind naloxone should be described in narrative and accounted for as a medication administered in the ePCR, distinct from therapeutically administered naloxone).
  - b. Training
    - i. Perform training for the individual receiving naloxone including:
      - 1. Recognizing signs and symptoms of overdose
      - 2. Calling 911
      - 3. Naloxone administration
      - 4. Rescue breathing
      - 5. Post-overdose care
    - ii. Recommend that the trained individual can complete further training online at <https://www.getnaloxonenow.org/#home>
  - c. Disposition
    - i. All patients treated for opioid overdose should be managed in accordance with [TP 1241](#) or [1241-P, Overdose / Poisoning / Ingestion](#)
    - ii. Patients who decline transport against medical advice should still be offered "Leave Behind Naloxone"
  - d. End of Shift
    - i. Re-stock naloxone kits
    - ii. Submit naloxone distribution log per provider agency procedures and in accordance with NDP requirements if participating in the NDP program. [https://www.dhcs.ca.gov/individuals/Pages/Naloxone\\_Distribution\\_Project.aspx](https://www.dhcs.ca.gov/individuals/Pages/Naloxone_Distribution_Project.aspx)
    - iii. Submit naloxone distribution logs to the EMS Agency quarterly

**Medical Control Guideline: ONLINE MEDICAL DIRECTION AND  
RECEIVING HOSPITAL NOTIFICATION**

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**DEFINITIONS:**

1. On-line Medical Direction is provided to prehospital provider(s) via voice communication from qualified Base hospital personnel (MICN or Base Physician) for the purposes of real-time patient care.
2. Receiving hospital notification is communication of patient information by prehospital provider(s) or Base hospital personnel for the purpose of preparing the receiving hospital staff for patient arrival.

**PRINCIPLES:**

1. Online medical direction occurs when Base hospital contact is established by paramedics in order to obtain guidance on patient care from a designated paramedic Base hospital.
2. In general, for situations requiring base hospital contact, the time when Base hospital contact is established will be based on paramedic judgement unless otherwise specified.
3. The paramedic who provides direct patient care during transport shall have a means to establish communication with the Base hospital at all times.
4. Once Base hospital contact is made for medical direction, the overall authority for patient's medical care lies with the Base. The treatment plan based on Provider Impression should be developed collaboratively by prehospital providers and Base personnel.
5. Treatments outlined in the applicable protocol may be administered by prehospital providers and communicated to the Base.
6. Communication shall be maintained until the Base hospital ends the call.
7. If Base hospital contact is made, the Base hospital is responsible for receiving hospital notification.

**GUIDELINES:**

1. Paramedics shall establish Base hospital contact for online medical direction on all patients who meet Base hospital contact criteria as specified in [Ref. 1200.1, Treatment Protocol General Instructions](#) and when directed by the Treatment Protocols.
2. Utilize radios, the VMED28 radio frequency, or telephone to establish Base hospital contact.
3. Paramedics shall clearly indicate the reason for the contact:
  - a. "Base Contact for online medical direction."
  - b. "Providing notification of patient transport to your facility" or may simply state "Notification"

4. When requesting online medical direction, paramedics shall report their field assessment to Base hospital personnel. Their report should include the following information:
  - a. Sequence Number
  - b. Provider Code/Unit number
  - c. Provider Impression
  - d. Patient age and gender
  - e. For pediatric patients: Weight (kg) and Color Code from length-based resuscitation tape
  - f. Pertinent patient assessment findings based on primary and secondary assessments
  - g. Past medical history, medications and allergies
  - h. Treatment provided prior to Base hospital contact
  - i. Response to treatment or patient re-assessment
  - j. Proposed hospital destination and estimated time of arrival
  - k. Any further information pertinent to the field care of the patient
5. Repeat all Base hospital orders, especially complete medication orders (name of drug, dose and route) to confirm reception and decrease errors.
6. Maintain or re-establish online communications as directed by the Base hospital for critical or hemodynamically unstable patients.
7. If a patient refuses treatment and/or transport and meets Base hospital contact criteria, paramedics should establish Base hospital contact prior to having the patient sign out against medical advice.
8. Receiving hospital notification shall include but is not limited to the following:
  - a. Sequence Number
  - b. Provider Code/Unit number
  - c. Provider Impression
  - d. Patient age and gender
  - e. For pediatric patients: Weight (kg) and Color Code from length-based resuscitation tape
  - f. Critical information that is needed for the receiving hospital to prepare for the patient
  - g. Estimated time of arrival



## Medical Control Guideline: PAIN MANAGEMENT

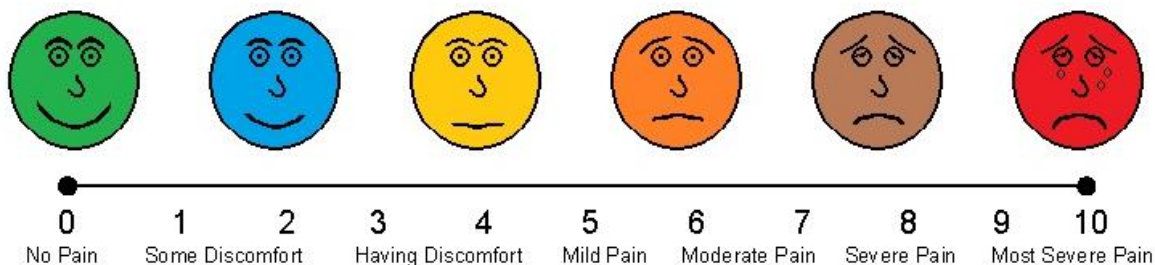
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### PRINCIPLES:

1. All patients should undergo pain assessment and management, regardless of age or ability to communicate in English.
2. Uncontrolled pain has been associated with both short-term and long-term adverse outcomes.
3. Measurement of a patient's pain is subjective; therefore, the patient who is able to communicate best determines the presence and severity of their pain.
4. Recording a pain level using a validated pain scale provides health care providers with a baseline against which to compare subsequent evaluations of the patient's pain.
5. Los Angeles County utilizes the "Numeric Pain Intensity", "Facial Expression", and FLACC (Face, Legs, Activity, Cry and Consolability) pain scales.
6. Pain management includes both pharmacologic and non-pharmacologic interventions, such as distraction, positioning, and medication administration which may be provided concurrently or in an escalating fashion.
7. When choosing a pain management strategy, providers should utilize their clinical judgement to select the most appropriate initial therapy. Treatment may be escalated as needed to achieve pain control.

### GUIDELINES:

1. Pain assessment should be performed on patients of all ages as part of the initial patient assessment and should include severity as measured on one of the 3 formal pain scales used in Los Angeles County.
2. For verbal patients 8 years of age or older, use the Numeric Pain Intensity scale by asking the patient to rate their pain on a 0-10 scale; zero (0) equals no pain and ten (10) equals the most severe pain. Document the number selected on the EMS Report Form.
3. For patients 4-7 years old, or for patients with limited English proficiency, use the Facial Expression pain scale.





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4. For children <4 years of age or for patients who are non-verbal due to baseline medical conditions such as cognitive impairment or severe dementia, utilize the FLACC Behavioral Tool. The patient should be assessed in each of the 5 categories shown in the table below, with the pain severity determined based on the total score on a scale of 0-10.

Behavior	0	1	2
Face	No particular expression or smile	Occasional grimace or frown, withdrawn, disinterested	Frequent to constant frown, clenched jaw, quivering chin
Legs	Normal position or relaxed	Uneasy, restless, tense	Kicking or legs drawn up
Activity	Lying quietly, normal position, moves easily	Squirming, tense, shifting back and forth, hesitant to move, guarding	Arched, rigid or jerking, fixed position, rubbing of body part
Cry	No cry/moan (awake or asleep)	Moans or whispers, occasional cries, sighs or complaint	Cries steadily, screams, sobs, moans, groans, frequent complaints
Consolability	Calm, content, relaxed, needs no consoling	Reassured by hugging, talking to, distractible	Difficult to console or comfort

5. Reassess the patient's pain with each assessment of vital signs and after any intervention, including patient movement into the ambulance. Document pain reassessment on the Patient Care Record.
6. Provide indicated treatment to patients with mild to severe pain as measured on any 0-10 scale per the table below. Nonpharmacologic methods should be used for all patients regardless of pain scale.

Pain Score	Indicated Treatment(s)	Considerations
≥1	Ice packs Distraction Positioning for comfort Splinting	For pain scores ≥4, use in conjunction with most appropriate analgesic(s).
≥4	Ketorolac	For pain score ≥7, may use in conjunction with opioid or alone if opioids are contraindicated. Avoid in cardiac chest pain.
≥7	Fentanyl Morphine	May only administer ONE of these medications. May administer in conjunction with ketorolac. Opioids should be administered alone for cardiac chest pain.

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7. Consider ketorolac in patients with mild to moderate pain (pain score  $\geq 4$ ). Ketorolac may also be given in patients with moderate to severe pain (pain score  $\geq 7$ ) in conjunction with opioids, or when contraindications to opioids exist (e.g., hypotension, respiratory failure, opioid allergy).

**Ketorolac Dosing****Adult Dose**

**15mg (1mL) slow IV/IO push, or  
30mg (2mL) IM**

**Pediatric Dose**, only for 4 years of age or older

**0.5mg/kg (15mg/mL) slow IV/IO push/IM**, dose per [MCG 1309](#)  
(maximum dose 15mg any route)

**Contraindications**

Active bleeding  
Active wheezing  
Age <4 years old or >65 years old  
Allergy to nonsteroidal anti-inflammatory agents (NSAIDs)  
Current anticoagulation therapy  
Current steroid use  
Head or multisystem trauma  
History of upper GI bleeding or peptic ulcer disease  
History of renal disease or kidney transplant  
Known or suspected pregnancy  
Suspected sepsis or septic shock

8. Consider opioid analgesia (Fentanyl or Morphine) for patients with moderate to severe pain (pain score  $\geq 7$ ). These analgesics should be considered equivalent options, however there are scenarios where one agent is preferred:

Opioids preferred: cardiac chest pain, children under 4 years of age

**Fentanyl Dosing****Adult Dose**

**50mcg (1mL) slow IV push or IM/IN**, repeat every 5 min prn, maximum total dose prior to Base contact 150mcg

**Pediatric Dose**

**1mcg/kg (50mcg/mL) slow IV push or IM**, dose per [MCG 1309](#), or  
**1.5mcg/kg (50mcg/mL) IN**, dose per [MCG 1309](#)  
Repeat in 5 min prn x1, maximum 2 total doses prior to Base contact

**Contraindications**

History of allergy to fentanyl  
Pregnant patients in labor

**Contact Base** for up to two additional doses based on continued pain assessment. Pediatric dosing based on reference 1309 and is weight based. Adult total maximum dose is 250 mcg all routes

**Morphine Dosing****Adult Dose**

**4mg (1mL) slow IV/IO push or IM**, repeat every 5 min prn, maximum total dose prior to Base contact 12mg

**Pediatric Dose**

**0.1mg/kg (4mg/mL) slow IV/IO push or IM**, dose per [MCG 1309](#), repeat in 5 min x1, maximum 2 total doses prior to Base contact

**Contraindications**

Hypotension or evidence of poor perfusion  
History of allergy to morphine  
Pregnant patients in labor

**Contact Base** for up to two additional doses based on continued pain assessment. Pediatric dosing based on reference 1309 and is weight based. Adult total maximum dose is 20 mg all routes.

9. Use caution when administering pain medication in the following situations:
  - a. Elderly patients
  - b. Adults with SBP <90mmHg; Pediatrics SBP <70mmHg (ketorolac preferred – this agent is less likely to worsen hypotension)
  - c. Potential for respiratory failure (ketorolac preferred – this is less likely to worsen respiratory depression)
  - d. Suspected drug/alcohol intoxication
10. When giving opioids, consider administering ondansetron 4mg ODT or IV prior to or concurrent with administration of the first dose in patients 4 years of age or older. These medications may cause nausea and vomiting.
11. Location of intramuscular injections are as follows:
  - a. Pediatric patients 14 years of age or younger use the lateral thigh (vastus lateralis)
  - b. Adult patients 15 years of age or older use the deltoid or the vastus lateralis
12. Document and report all interventions performed for pain management, whether pharmacologic or nonpharmacologic. These may include, but are not limited to:
  - a. Nonpharmacologic:
    - i. Splinting
    - ii. Distraction with devices (e.g. video viewing)
    - iii. Ice pack application
    - iv. Positioning for comfort
  - b. Pharmacologic: Medication administration
13. Contact Base for orders if patient's condition requires additional dosing of medications beyond that permitted by Treatment Protocol.



## Medical Control Guideline: PEDIATRIC PATIENTS

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### DEFINITION:

Pediatric patients in the prehospital setting are defined as children 14 years of age and younger or, in the case that the is age unknown, the patient can be measured on the length-based resuscitation tape (e.g., Broselow™).

### PRINCIPLES:

1. Pediatric patients require special consideration in assessment, treatment and medication administration.
2. Pediatric assessment includes: pre-arrival preparation, scene size-up for hazards to patient or providers, assessment of scene for signs of child maltreatment, the Pediatric Assessment Triangle (PAT), vital signs, focused history using SAMPLE (signs and Symptoms, Allergies, Medications, Past Medical History, Last food or liquid intake, and Events leading to illness or injury), and a detailed physical exam as dictated by the patient's presenting signs and symptoms and condition.
3. PAT is composed of three components Appearance, Work of Breathing and Circulation to the Skin (Figure 1).
  - a. The PAT is a "rapid Assessment Tool" that uses only visual and auditory clues and requires no equipment.
  - b. The PAT is intended to allow the EMS provider to:
    - i. Establish the child's severity of illness
    - ii. Determine sick or not sick
    - iii. Recognize the general category of pathophysiology called the "general impression"
    - iv. Determine the urgency of interventions
  - c. Appearance: Recalled by the mnemonic TICLS, an abnormality in any component is abnormal.
    - i. Tone
    - ii. Interactiveness
    - iii. Consolability
    - iv. Look/Gaze
    - v. Speech/Cry
  - d. Work of Breathing: Presence of any of the following implies abnormal work of breathing.
    - i. Stridor
    - ii. Wheezing
    - iii. Grunting
    - iv. Tripod positioning
    - v. Retractions
    - vi. Flaring
    - vii. Apnea/Gasping

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- e. Circulation to the Skin: Presence of any of the following indicates abnormal circulation to the skin or signs of poor perfusion.
  - i. Pale
  - ii. Mottled
  - iii. Cyanotic
- f. Combining the PAT assessment based on these components can be used to determine the general impression (i.e., what, if anything, is critically wrong with the patient in terms of pathophysiology) which will dictate immediate management priorities (Figure 2):
  - i. Stable
  - ii. Respiratory distress
  - iii. Respiratory failure
  - iv. Shock
  - v. CNS/Metabolic disorder
  - vi. Cardiopulmonary failure/Cardiopulmonary Arrest
- 4. Treatments, medication concentrations and drug dosages are age- or weight-specific for the pediatric patient.
- 5. Accurate pediatric drug doses are obtained by:
  - a. Measuring the patient against a pediatric length-based resuscitation tape (e.g., Broselow Tape) to obtain the weight/color zone, and then
  - b. Referring to the [MCG 1309](#) Color Code Drug Doses for the medication doses appropriate to that weight/color zone.
- 6. Brief Resolved Unexplained Events (BRUE) is defined as a brief episode characterized by any of the following (for children 12 months of age or younger):
  - a. Absent, decreased or irregular breathing
  - b. Color change (usually cyanosis or pallor)
  - c. Marked change in muscle tone (usually limpness or hypotonia, may also include hypertonia)
  - d. Altered level of consciousness

**GUIDELINES:**

- 1. Assess using the PAT and initiate immediate treatment based on your general impression (Stable, Respiratory Distress, Respiratory Failure/Arrest, Shock, Central Nervous System Disorder/Metabolic Disorder, or Cardiopulmonary Failure/Arrest).
- 2. Determine your Provider Impression and continue treatment per the corresponding Treatment Protocol.
- 3. Document findings of the PAT, your assessment, and your Provider Impression.
- 4. Obtain the patient's estimated weight utilizing a pediatric length-based resuscitation tape and document the corresponding weight and color zone on the EMS Report Form.

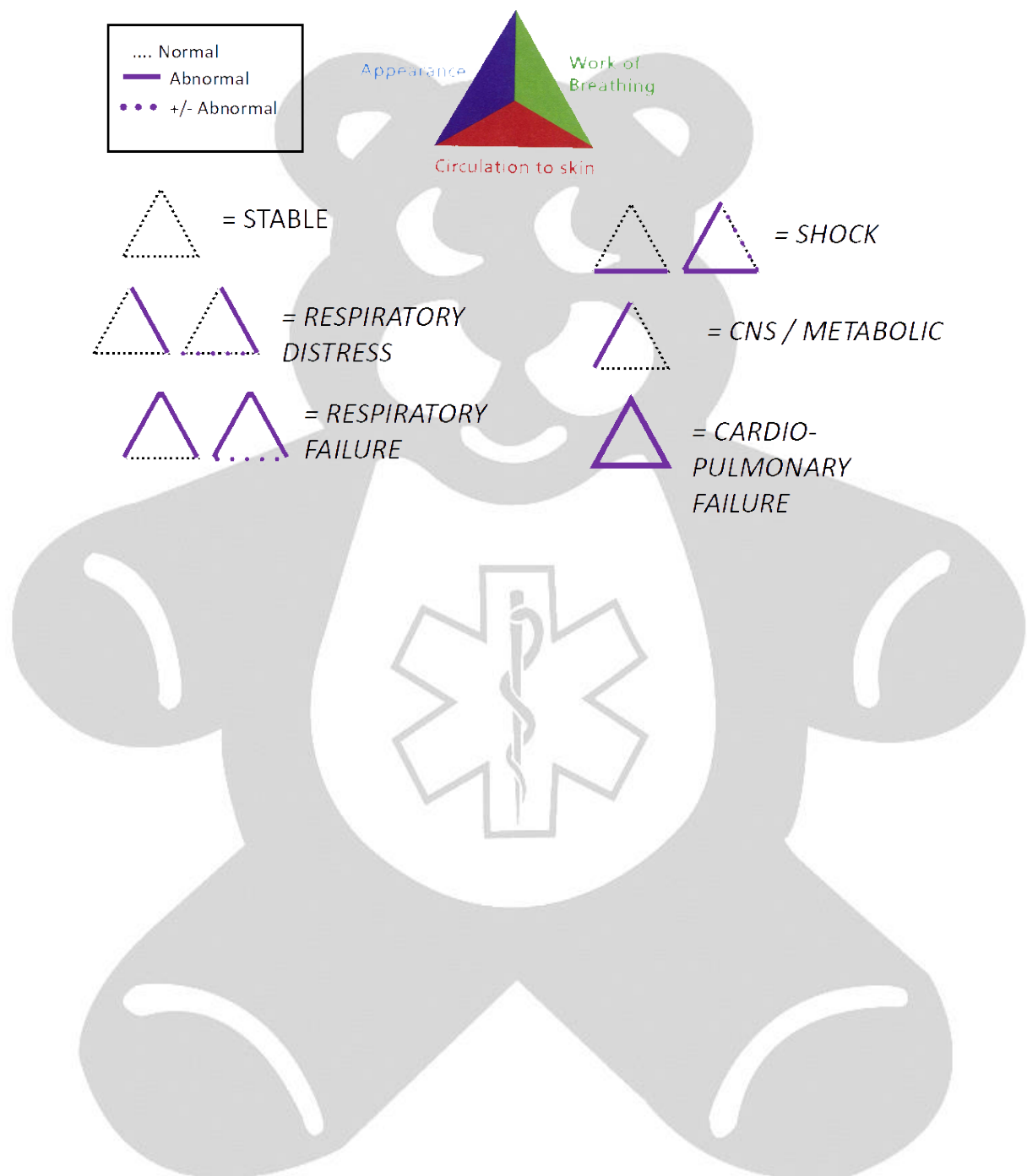
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5. Pediatric Airway Management:
  - a. Bag Mask Ventilation (BMV) is the preferred method of airway management.
  - b. Nasopharyngeal (NP) airway and oropharyngeal (OP) airway are approved airway adjuncts to facilitate BMV.
  - c. i-gel is the approved supraglottic airway for pediatric patients in whom: BMV is difficult or ineffective; in respiratory arrest after BMV initiated; in cardiac arrest once resuscitation priorities have been met. Sizing per [MCG 1309](#).
  - d. Endotracheal Intubation (ETI) is approved for patients 12 years of age or greater, or longer than the length of the length-based resuscitation tape and should be utilized for these pediatric patients when there is a need for advanced airway and i-gel is contraindicated.
6. Pediatric Cardiopulmonary Resuscitation (CPR):
  - a. Use Neonatal CPR for newborns just after delivery in the first 24 hours of life
  - b. Use Infant CPR for patients greater than 1 day of age to less than 13 months of age
  - c. Use Child CPR for patients greater than or equal to 13 months of age to the onset of puberty
7. Automatic External Defibrillators (AED):

Pediatric self-adhering pads or a pediatric attenuator system are recommended for infants and children younger than 8 years of age. When pediatric pads and/or a pediatric attenuator is not available, use adult AED and place front to back for infants and children

**Figure 1:** Pediatric Assessment Triangle



**Figure 2:** Using the components of the PAT to for a General Impression



## Medical Control Guideline: PERFUSION STATUS

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### PRINCIPLES:

1. Perfusion status is determined by a combination of parameters that includes heart rate, blood pressure, tissue color and mentation. No one parameter alone can be used to determine perfusion status.
2. Adequate perfusion is defined as adequate circulation of blood through organs and tissues, manifested by normal pulse, tissue color, level of consciousness and blood pressure.
3. Poor perfusion is defined as inadequate circulation of blood through organs and tissues manifested by vital sign abnormalities and/or signs and symptoms of organ dysfunction.
4. Patients with poor perfusion that are unresponsive to initial fluid resuscitation are in shock.

### GUIDELINES:

1. EMS providers should evaluate for the following signs and use clinical judgement to determine poor perfusion status:
  - a. Bradycardia, tachycardia and/or poor pulse quality (weak/thready)
  - b. Altered mental status (including anxiety, restlessness, lethargy, combative behavior)
  - c. Adult systolic blood pressure (SBP) < 90mmHg, pediatric SBP < 70mmHg
  - d. Delayed capillary refill time (>2 seconds) and/or changes in tissue color including pallor, cyanosis or mottling



**Medical Control Guideline: PROTECTION AGAINST POTENTIAL  
COMMUNICABLE DISEASES**

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**PURPOSE:** To describe processes for protection against communicable diseases including, personal protective equipment (PPE), isolation of the ambulance patient compartment, and decontamination of the ambulance post call.

**DEFINITIONS:**

**Airborne Transmission:** Transmission of a communicable disease via residue from evaporated droplets or dust particles containing microorganisms which remain suspended in the air.

**Communicable Disease:** A disease that is transmitted from human to human.

**Contact Transmission:** Transmission of a communicable disease via direct contact of the infected person or via an object or material that can carry infectious particles.

**Donning:** The process of applying PPE to oneself.

**Doffing:** The process of removing PPE from oneself.

**Droplet Transmission:** Transmission of a communicable disease via respiratory droplets that are too large to be airborne for long periods of time, and quickly settle out of air.

**Emerging Infectious Disease (EID):** Infectious diseases that have newly appeared in a population or have existed but are rapidly increasing in incidence or geographic range, or that are caused by one of the National Institute of Allergy and Infectious Diseases (NIAID) Category A, B, or C priority pathogens.

**PRINCIPLES:**

1. Exposure to communicable diseases in emergency medical response is a hazard that can be mitigated by proper use of PPE, implementation of strategies to isolate or increase airflow in the compartment, and decontamination of equipment after each patient encounter.
2. Modes of transmission vary by microorganism. Transmission may occur via contact, respiratory droplets, and/or airborne particles.
  - a. Standard (i.e., unknown transmission or no known communicable disease)
  - b. Contact (i.e., infected areas of the person's body such as skin infections, diarrhea)
  - c. Droplet (i.e., COVID-19, influenza, meningitis, bronchiolitis, other respiratory viruses)
  - d. Airborne (i.e., measles, varicella (chicken pox), disseminated herpes zoster, or tuberculosis)
3. Standard precautions, formerly known as universal precautions, are the minimum PPE worn for every patient encounter.
4. The appropriate strategies, including the use of PPE beyond standard precautions, are selected by anticipating which communicable disease may be present on scene and the route by which that communicable disease is transmitted.

5. During periods of respiratory illness or emerging infectious disease surge, it is prudent to apply the highest level of PPE and mitigation strategies until additional information is known about the transmission route and communicability of the disease.
6. Donning appropriate PPE is an essential part of provider safety and takes precedence over expediting patient care.
7. Donning and doffing should be performed in the presence of a partner to ensure proper technique.

**GUIDELINES:**

1. Perform hand hygiene prior to donning PPE.
2. Don PPE in the following sequence from first on to last on: gown, mask or respirator, eye protection, gloves. If two-glove technique used don first pair of gloves first and second pair of gloves last.
3. Don the appropriate PPE and take the following precautions during care of a patient with a confirmed or suspected communicable disease, see Table 1.
4. For all precautions, limit the number of providers in the patient compartment to only essential personnel to minimize exposures.
5. Maintain PPE throughout the patient encounter. Doff PPE once the patient encounter is complete.
6. Doff PPE in the following sequence from first off to last off: gown, gloves, goggles or face shield, mask or respirator. If two-glove technique used doff first pair of gloves first and second pair of gloves last.
  - a. Contaminated surfaces of the PPE are the outer glove surface, front portion of the gown/raincoat, front portion of the eye protection, and front portion of the mask and any other surfaces that knowingly came into contact with the patient or were otherwise contaminated. Clean surfaces of the PPE include the rear portion of the gown/raincoat, eye protection straps, and mask straps.
  - b. PPE should be doffed by clean hands coming into contact with clean portions of the PPE only.
7. Dispose of doffed PPE in a biohazard container.
8. Perform proper hand hygiene.
9. Refer to the CDC for on additional guidance on donning and doffing PPE:  
<https://www.cdc.gov/coronavirus/2019-ncov/hcp/using-ppe.html>
10. After each patient encounter decontaminate all surfaces of durable medical equipment using Environmental Protection Agency (EPA) approved disinfectant and dispose of all disposable medical equipment that came in contact with the patient or the scene per provider agencies protocols. If a raincoat is used as a gown, wipe down with EPA approved disinfectant and hang up to air dry.

Table 1. PPE and Mitigation Strategies for Communicable Disease Precautions

Type of Transmission	Minimum PPE Required	Mitigation Strategies
Standard	Gloves	<ul style="list-style-type: none"> <li>• Perform hand hygiene</li> <li>• Clean and disinfect surfaces</li> </ul>
Contact	Gloves, gowns (as available)	
Droplet	Gloves, surgical mask, eye protection, gowns (as available)	<ul style="list-style-type: none"> <li>• Perform hand hygiene</li> <li>• Clean and disinfect surfaces</li> <li>• Place surgical mask on patient (and caregiver)</li> <li>• Use viral filters during positive pressure ventilation</li> <li>• Ask ambulatory patients to move outside of residence</li> <li>• Open windows of transport vehicle, weather permitting</li> <li>• Adjust the transport vehicle's ventilation system to the highest air changes per hour</li> </ul>
Airborne	Gloves, respirator (N95, P100, or PAPR), eye protection, gowns	

## **Medical Control Guideline: SPINAL MOTION RESTRICTION (SMR)**

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### **DEFINITION:**

Spinal Motion Restriction (SMR) describes the procedure used to care for patients with possible unstable spinal injuries. SMR includes: Reduction of gross movement by the patient; prevention of additional damage to the spine; and regular reassessment of motor/sensory function.

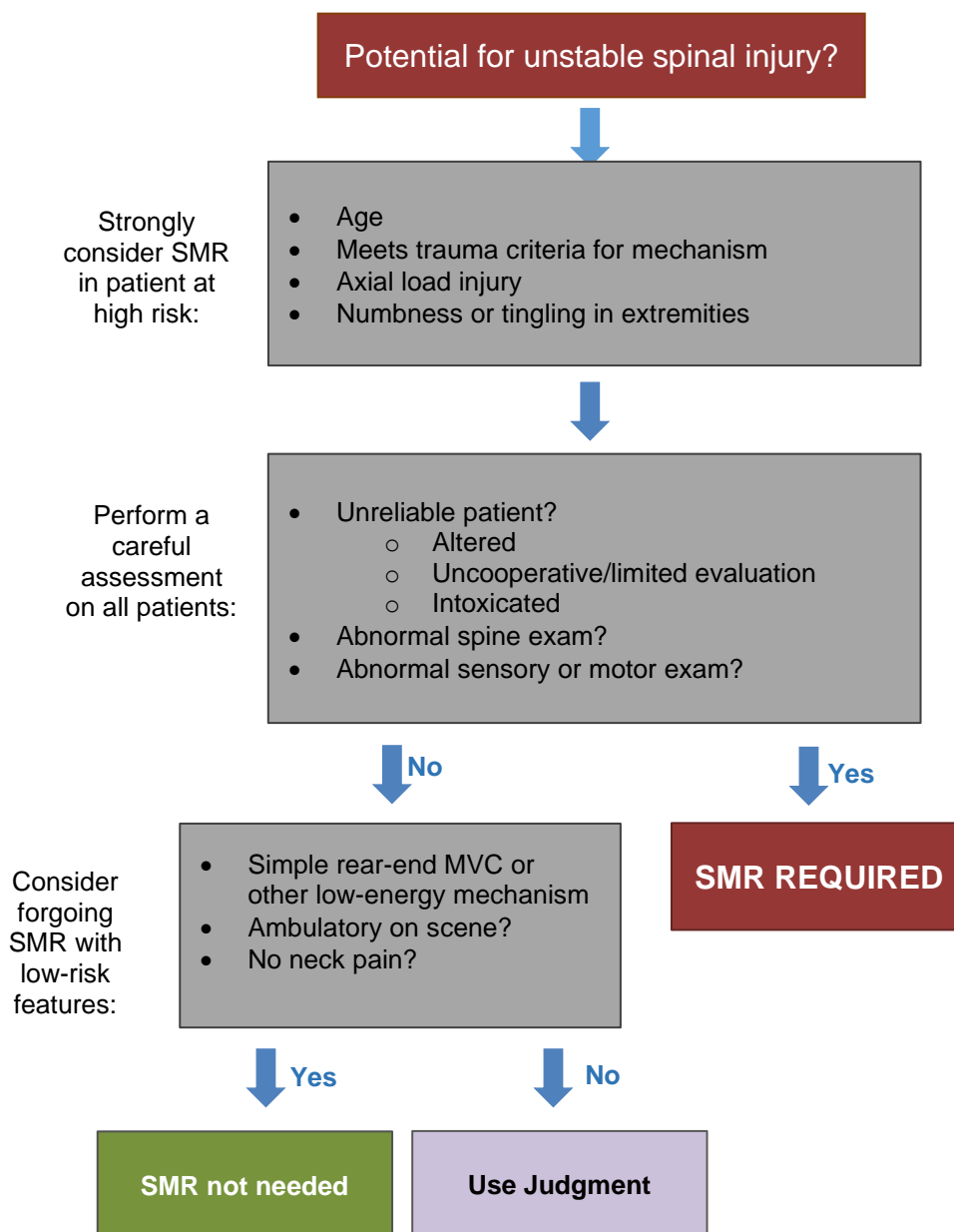
### **PRINCIPLES:**

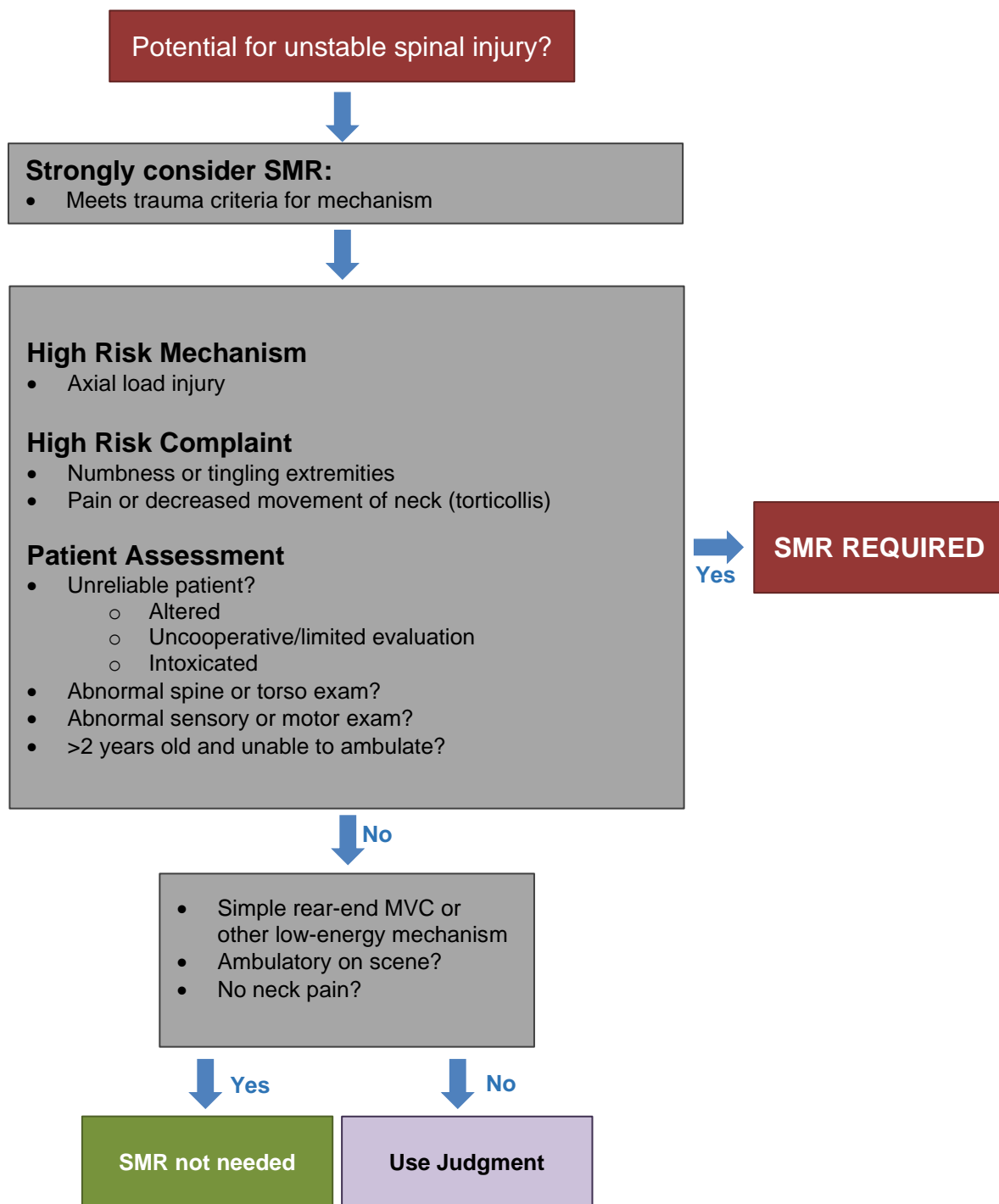
1. SMR involves maintaining a neutral in-line position of the spine at all times during patient treatment and transport. SMR requires the patient's head, neck and torso to be appropriately stabilized. This can be achieved manually or with the use of commercially available equipment.
2. There are multiple commercial devices that may be used to assist with SMR during patient movement. In addition, there are harmful side effects of these devices that must be considered.
3. Prehospital provider assessment will determine if SMR is required.
4. Prehospital providers should use judgment and consider SMR for patients without neurologic findings, but in whom one is still concerned for unstable spinal injury.
5. A cervical collar alone does not provide adequate SMR. To provide appropriate SMR, the patient must be maintained in a neutral in-line position during movement and while on the gurney. Patients with potential thoracolumbar injury should be supine or reverse Trendelenburg.
6. The backboard is an extrication device. It may also be used to provide splinting during movement of patients with multiple traumatic injuries. While a backboard may be used to assist with SMR during the extrication phase, it is not required for SMR.
7. Once the patient is on the ambulance gurney, the backboard does not provide any advantage and may cause harm related to increased pain, increased lateral movement, and increased imaging at the hospital.
8. The backboard should not be maintained during transport for the purposes of SMR. Whenever possible, patients should be rolled off the backboard prior to transport. Exceptions are patients who are hemodynamically unstable or when there are scene safety concerns.
9. A backboard should not be used in the ambulatory patient (i.e. a patient who is standing and/or walking at the time of EMS arrival).
10. SMR is generally not indicated for penetrating injuries and transport must not be delayed to maintain SMR. Treatment of patients with penetrating trauma should not involve a backboard unless it is required as an extrication device.
11. Safe and proper removal of the helmet should be done by two people following steps outlined in an approved trauma curriculum.

12. Paramedic assessment, in accordance with guidelines below, will determine whether SMR is required. Whenever BLS has initiated SMR, paramedics should strongly consider maintaining c-collar and spinal precautions until hospital evaluation. Once SMR has been determined necessary based upon paramedic assessment, it should be maintained throughout the prehospital phase of care by whatever methods the provider deems appropriate. This does not include continuation of the backboard, which, if used to assist during extrication, should be removed once patient is on gurney.
13. The method by which SMR is maintained and devices used may be adjusted to meet the needs of the patient. In particular, management of the patient's airway may necessitate alternate SMR methods and should take precedence.
14. For purposes of the assessment, an unreliable patient is anyone who is altered, intoxicated or nonverbal. Limited evaluation may be due to communication barrier, uncooperative patient or patient too distracted by other injuries and circumstances. An abnormal spine exam is any deformity or tenderness along the spine.
15. For the purposes of the pediatric assessment, an abnormal torso exam refers to evidence of substantial torso injury, defined as injuries thought to be potentially life threatening to the thorax including the chest wall, abdomen, flanks, back and pelvis with an unstable chest wall, abdominal distension or significant chest or abdominal tenderness.

**GUIDELINES:**

1. Every patient with trauma, including ambulatory patients, must receive an assessment. If any assessment component is positive, the patient requires SMR. (See age-appropriate SMR algorithm.)
2. Patients initially placed in SMR by BLS providers whose care is transferred to ALS providers, shall receive a paramedic assessment to determine if continuation of SMR is indicated.
3. Neurological examination includes:
  - a. Test of sensation and abnormal sensation (parasthesias) in all 4 extremities
  - b. Test of motor skills in all 4 extremities with active movements by the patient (avoid just reflexive movements like hand grasp) to include: wrist/finger extension and flexion, foot plantar and dorsiflexion
  - c. Frequent reassessment.
4. All history and examinations pertinent to the decision for spinal motion restriction, as outlined in the adult and pediatric algorithms, must be assessed and documented on the ePCR.
5. Padding may be necessary to maintain neutral alignment particularly in children <3 years old who have a large occiput forcing the head forward when supine.
6. Infants in rear facing car seats may be immobilized and extricated in the car seat as long as the patient is stable and does not exhibit signs of respiratory distress or shock.
7. Children restrained in a car seat with a high back should be extricated in the car seat and then be placed in SMR as appropriate. Children in booster seats (without a back) should be placed in SMR as appropriate.

**ADULT ALGORITHM:**

**PEDIATRIC ALGORITHM:**

Predisposing conditions are any of the following: Family members who fracture bones easily, child with spinal deformity, dysmorphic features, or childhood rheumatoid arthritis.

Specific conditions include: Down syndrome, hydrocephalus, dwarfism (achondrodysplasia), Klippel-Feil syndrome, mucopolysaccharidosis, Ehlers-Danlos syndrome, Marfan syndrome, osteogenesis imperfecta, Larsen syndrome, juvenile rheumatoid arthritis, juvenile ankylosing spondylitis, renal osteodystrophy, rickets, scoliosis, history of cervical spine injury /surgery.

## Medical Control Guideline: TRANSCUTANEOUS PACING

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### PRINCIPLES:

1. Transcutaneous Pacing (TCP) provides temporary external cardiac pacing for the treatment of symptomatic bradycardia for patients who are unresponsive to airway management or drug therapy.
2. TCP should not be initiated on patients in asystole.
3. Do not delay TCP for IV access if the patient has poor perfusion.
4. Strongly consider sedation for pacing discomfort. Refer to *TP 1212* or *1212-P*, *Cardiac Dysrhythmia - Bradycardia* for drugs and dosages.
5. All TCP equipment must be used and maintained in accordance with the manufacturer's guidelines.

### GUIDELINES:

1. Explain the procedure to the patient, family member, and/or caregiver.
2. For awake patients, provide sedation and analgesia unless contraindicated. Contraindications include RR < 10 for adults (for pediatrics < lower limit for color code on *MCG 1309*) or unresponsiveness.
3. Place pacing pads in anterior (black)/posterior (red) (A/P) position and connect ECG cable.
4. Activate the pacing device, set the initial pacing rate at 70 bpm or 100 bpm for children less than 12 months of age.
5. Set the current at 40 milliamperes (mAs). Slowly increase the mA until electrical and mechanical capture is achieved as evidenced by a **palpable pulse** that correlates with the paced heart rate on the monitor. Once capture is noted increase the mAs by 10mAs to ensure ongoing capture.
6. If current is increased to 120-130 mAs without capture; reposition the pacer pads on the upper right chest and at the apex of the heart and reattempt pacing and capturing as above.
7. If the patient continues to exhibit signs and symptoms of poor perfusion, increase the rate by 10 bpm until adequate perfusion is achieved. Maximum rate is 100 bpm for adults and 120 bpm for children.



**Medical Control Guideline: TRAUMATIC HEMORRHAGE CONTROL**

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**PRINCIPLES:**

1. Applying direct continuous pressure to the area of bleeding should be the first management technique to control external bleeding.
2. Tourniquets have been demonstrated to be safe and effective when used appropriately and can be lifesaving.
3. A hemorrhage control tourniquet should be used if external bleeding from an extremity cannot be controlled by direct pressure to an exposed wound.
4. Poorly perfusing patients with an isolated penetrating extremity injury and those with amputations or mangled extremities should have a tourniquet applied even if minimal to no visible bleeding.
5. Tourniquet application may be the initial method to control extremity bleeding when scene safety concerns, resource limitations, or patient position/entrapment preclude direct pressure application.
6. Tourniquet application frequently results in severe pain. Pain management should be provided as necessary.
7. Hemostatic Agents are only to be utilized by approved providers.
8. Tranexamic acid (TXA) acts to prevent clot breakdown and improves outcomes for trauma patients with hemorrhagic shock if administered within 3 hours of injury, with increasing benefit the sooner it is administered.

**GUIDELINES:**

1. First, remove any bandages applied by patient or bystanders, identify the area of bleeding, and apply continuous, firm, focused pressure directly to source of bleeding using gauze or hemostatic agents as appropriate.
2. If unable to control hemorrhage with direct pressure, or if scene or patient safety precludes application of direct pressure, prepare for tourniquet application.
3. Explain usage of tourniquet to the patient if patient's condition allows.
4. Follow manufacturer's instructions for application of the tourniquet.
5. Apply tourniquet 2-3 inches proximal to the bleeding site but not over a joint or the hemorrhaging injury.
6. Ensure that bleeding is stopped and distal pulses are absent after the application of the tourniquet.
7. Once a tourniquet is applied, the patient should be reassessed at least every 5 minutes for continued absence of distal pulse and/or bleeding.

8. If bleeding is not controlled with one tourniquet, a second tourniquet may be applied proximal to the first tourniquet. Do not remove the first tourniquet after applying the second tourniquet.
9. Once a tourniquet is applied it should not be loosened or removed without physician approval.
10. Provide analgesia per [MCG 1345](#) and refer to [TP 1244](#) or [1244-P](#), *Traumatic Injury* and [TP 1242](#) or [1242-P](#), *Crush Injury/Syndrome* as appropriate for dosing.
11. For adult patients within 3 hours of injury and uncontrolled external/extremity bleeding despite applying pressure, and use of hemostatic agents and tourniquets where appropriate, administer TXA per MCG 1317.41.
12. For adult patients within 3 hours of injury with suspected uncompressible truncal hemorrhage and systolic blood pressure (SBP) <90mmHg OR heart rate>SBP, administer TXA per MCG 1317.41.
13. Paramedics shall make Base hospital contact and transport in accordance with [Ref. 1200.1](#) and [Ref. 502, Patient Destination](#). In general, patients requiring tourniquets should be transported to a Trauma Center.
14. Paramedic shall document the time tourniquet applied on the tourniquet and on the EMS Report Form. Remaining patient documentation will be in accordance with [Ref. 606, Documentation of Prehospital Care](#).

**Medical Control Guideline: TREATMENT PROTOCOL QUALITY IMPROVEMENT  
FALLOUT DATA DICTIONARY**

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**DEFINITION:**

**Fallout:** a deviation from an established standard.

**PRINCIPLES:**

1. An EMS QI program incorporating the Treatment Protocols is essential to effectively evaluate the quality of prehospital care as well as the efficiency in providing emergency medical services.
2. A collaborative relationship between Base Hospitals and EMS Provider Agencies is necessary for a comprehensive and effective quality improvement (QI) program.
3. Base Hospitals and EMS Provider Agencies shall evaluate the appropriate utilization of the Treatment Protocols based on the fallouts outlined below.

**GUIDELINES:**

**I. EMS PROVIDER AGENCY**

**23. ALL TREATMENT PROTOCOLS**

- a. Provider Impression (PI)
  - Primary PI not documented
  - Primary PI clinically incorrect
  - Secondary PI not documented when appropriate
- b. Treatment Protocol (TP)
  - Designated TP for PI not used
  - Secondary TP for secondary PI not used when appropriate
- c. Airway (AW)
  - Adult - Unresponsive requiring Bag-Mask-Ventilation (BMV) and oropharyngeal airway not used
  - Advanced airway (ET tube, supraglottic airway) not used for ineffective BMV
  - Advanced airway used prior to resuscitation goals met for patients in cardiac arrest
  - Capnography not used for any positive pressure ventilation
  - Positive pressure ventilation required and not performed
- d. Oxygen (O<sub>2</sub>) (O2)
  - Does not receive O<sub>2</sub> and O<sub>2</sub> sat <94% (<88% COPD), unless newborn or pediatric congenital heart disease
  - Meets criteria for high flow O<sub>2</sub> and patient does not receive
  - Receives O<sub>2</sub> and O<sub>2</sub> sat >94% and patient does not meet criteria for high flow O<sub>2</sub>
  - Pediatric – Newborn or pediatric congenital heart disease receive inappropriate O<sub>2</sub> as per MCG 1302

- e. Pain (PN)
  - Pain level not recorded
  - Pain score  $\geq 7$  and pain not addressed
  - Pain treated and not reassessed
  - Incorrect dose of pain medication administered
- f. Base Contact (BA)
  - Base contact not made when specified by Ref. No. [1200.1](#) or by specific protocol used
- g. Receiving Hospital Notification (NT)
  - No notification to receiving hospital as per Ref. No. [1200.1](#)
- h. Transport (TS)
  - Advanced Life Support (ALS) transport not made when indicated by Ref. No. [1200.1](#)
- i. Destination (DS)
  - Failure to transport to a specialty center when indicated
  - Transport to the wrong specialty center; includes Trauma Center, STEMI Receiving Center, Perinatal Center, Emergency Department Approved for Pediatrics, Pediatric Medical Center, Primary Stroke Center and Comprehensive Stroke Center.
  - Transport to the incorrect stroke center level based on mLAPSS, LAMS and Last Known Well Time
- j. Documentation (DO)
  - Erroneous Provider Impression or Treatment Protocol documentation due to data entry error alone
- k. Color Code Drug Doses (DD)
  - Pediatric – for children  $\leq 14$  years weight (kg) and Color Code not documented
  - Pediatric – for children  $\leq 14$  years weight (kg) or Color Code incorrect
- l. Fluid Administration (FL)
  - Adult – Normal Saline 1L not administered for poor perfusion or other protocol-specific indication (unless contraindicated because of pulmonary edema or multi-system trauma patient)
  - Pediatric – Normal Saline 20mL/kg not administered for poor perfusion or other protocol-specific indication
  - Patient not reassessed after each Normal Saline 250mL and fluids continued
- m. Ondansetron (ON)
  - Pediatric – Ondansetron 4mg ODT given to patient  $< 4$  years old
  - Not administered when indicated

24. TP [1202](#) / [1202-P](#) – GENERAL MEDICAL  
As per “All Treatment Protocols”

25. TP [1203](#) / [1203-P](#) – DIABETIC EMERGENCIES

- a. Glucose (GL)
    - Blood glucose not checked
  - b. Low Blood Glucose (LG)
    - Blood glucose < 60 and not treated
26. TP [1204](#) / [1204-P](#) – FEVER / SEPSIS  
As per “All Treatment Protocols”
27. TP [1205](#) / [1205-P](#) – GI/GU EMERGENCIES  
As per “All Treatment Protocols”
28. TP [1206](#) / [1206-P](#) – MEDICAL DEVICE MALFUNCTION  
As per “All Treatment Protocols”
29. TP [1207](#) / [1207-P](#) – SHOCK / HYPOTENSION
- a. Vascular Access (VA)
    - Vascular access not attempted for patient
    - Intraosseous line not attempted when Intravenous Line cannot be established and Intraosseous Line indicated per MCG 1375
    - Intraosseous Line placed without indication as per MCG 1375
  - b. Cardiac Monitoring (CM)
    - Cardiac monitoring not initiated
  - c. Fluid Administration (FL)
    - Any universal fallout as specified above
    - Additional Normal Saline 1L for adults or 20mL/kg for pediatrics not administered for persistent poor perfusion after initial NS infusion (unless contraindicated or withheld by Base order)
  - d. Push-Dose Epinephrine (PD)
    - Base contact not made to discuss or Push-Dose Epinephrine not initiated for persistent poor perfusion or poor perfusion with pulmonary edema
30. TP [1208](#) / [1208-P](#) – AGITATED DELIRIUM
- a. Sedation (SE)
    - Adult – Midazolam not administered in patient requiring restraints or for provider safety
    - Pediatric – Base contact not made to discuss Midazolam administration in patients requiring restraints or for provider safety
    - Pediatric – Midazolam administered without Base order
    - Midazolam administered in patient not meeting criteria (not requiring restraints or not agitated with 2 or more of confusion, diaphoresis, tactile fever, tachycardia)
31. TP [1209](#) / [1209-P](#) – BEHAVIORAL / PSYCHIATRIC CRISIS
- a. Sedation (SE)

- Midazolam not administered in patient requiring restraints or for provider safety
- Midazolam administered in patient not meeting criteria (not requiring restraints for patient or provider safety)
- Midazolam administered without Base order

32. TP [1210](#) / [1210-P](#) – CARDIAC ARREST

- Scene (**SD**)
  - Patient transported prior to at least 20 minutes of on-scene resuscitation
- Vascular Access (**VA**)
  - Vascular Access not attempted for patient
  - Intraosseous Line not attempted when intravenous line cannot be established and Intraosseous Line indicated per MCG 1375
- Capnography (**WC**)
  - Waveform capnography is not used throughout resuscitation
- Defibrillation (**DF**)
  - Adult – Defibrillation biphasic at 200J not performed immediately for shockable rhythm
  - Pediatric – Defibrillation at 2J/kg not performed immediately for shockable rhythm
  - Pediatric – Repeat defibrillation at 4J/kg not performed when indicated
  - Defibrillation performed for non-shockable rhythm
- Epinephrine (**EP**)
  - Epinephrine administered prior to defibrillation x 2 for shockable rhythm
  - Epinephrine not administered after defibrillation x 2 for shockable rhythm
  - Epinephrine not administered for PEA/Asystole
- Amiodarone (**AM**)
  - Amiodarone not administered for persistent or recurrent V-Fib/V-Tach without pulses
  - Amiodarone administered for rhythm besides persistent V-Fib/V-Tach without pulses
- 12-Lead ECG (**EC**)
  - 12-Lead ECG not performed after Return of Spontaneous Circulation (ROSC) per MCG 1308
  - 12-Lead ECG paramedic interpretation not documented
  - 12-Lead ECG software interpretation not documented
- Fluid Administration (**FL**)
  - Normal Saline not administered for PEA/Asystole
  - Normal Saline not administered for SBP <90 after ROSC
- Push-Dose Epinephrine (**PD**)
  - Adult – Push-dose epinephrine not administered for SBP <90mmHg after 250mL Normal Saline for ROSC

- Pediatric – Push-dose epinephrine not administered for SBP <70mmHg after Normal Saline 20mL/kg for ROSC

33. TP [1211](#) – CARDIAC CHEST PAIN

- Cardiac Monitoring (**CM**)
  - Cardiac Monitoring not initiated
- 12-Lead ECG (**EC**)
  - 12-Lead ECG not performed as per MCG 1308
  - 12-Lead ECG paramedic interpretation not documented
  - 12-Lead ECG software interpretation not documented
- Aspirin (**AS**)
  - Aspirin not administered for alert patient (unless documented that patient is allergic to Aspirin/has contraindication to receiving Aspirin)
  - Aspirin administered to a pediatric patient
- Nitroglycerin (**NG**)
  - Nitroglycerin given for SBP <100mmHg
  - Nitroglycerin given when patient has taken sexually enhancing drugs within 48 hours
  - Nitroglycerin given without assessing for sexually enhancing drugs
  - Nitroglycerin not given despite chest pain and no documentation as to why withheld
  - Nitroglycerin given to a pediatric patient

34. TP [1212](#) / [1212P](#) – CARDIAC DYSRHYTHMIA – BRADYCARDIA

- Cardiac Monitoring (**CM**)
  - Cardiac Monitoring not initiated
- 12-Lead ECG (**EC**)
  - 12-Lead ECG not performed as per MCG 1308
  - 12-Lead ECG paramedic interpretation not documented
  - 12-Lead ECG software interpretation not documented
- Chest Compressions (**CC**)
  - Pediatric - Chest compressions not performed for pulse <60bpm with persistent poor perfusion after O<sub>2</sub> and BMV
  - Pediatric - Chest compressions continued after pulse >60bpm
- Epinephrine (**EP**)
  - Pediatric – Epinephrine administered without O<sub>2</sub> and BMV/airway management for poor perfusion
  - Pediatric – Epinephrine not administered for persistent poor perfusion after O<sub>2</sub> and BMV
  - Pediatric – Epinephrine not administered at correct dose
- Atropine (**AT**)

- Adult – Atropine not administered for poor perfusion (unless immediate Transcutaneous Pacing (TCP) is indicated and initiated)
- Pediatric – Atropine not administered for suspected AV Block or increased vagal tone (unless immediate TCP indicated and initiated)
- f. Transcutaneous Pacing (TCP) (TC)
  - TCP not initiated for HR  $\leq$  40 with continued poor perfusion as per MCG 1365

35. TP [1213](#) / [1213-P](#) – CARDIAC DYSRHYTHMIA – TACHYCARDIA

- a. Cardiac Monitoring (CM)
  - Cardiac Monitoring not initiated
- b. 12-Lead ECG (EC)
  - 12-Lead ECG not performed as per MCG 1308
  - 12-Lead ECG paramedic interpretation not documented
  - 12-Lead ECG software interpretation not documented
- c. Valsalva (VL)
  - Valsalva not attempted for supraventricular tachycardia (SVT)/narrow complex with adequate perfusion
- d. Adenosine (AD)
  - Adenosine not administered for SVT/narrow complex with adequate perfusion when Valsalva fails
  - Adenosine not administered for SVT/narrow complex in alert patient with poor perfusion
  - Adenosine not administered for Wide-Complex Regular Monomorphic Tachycardia with adequate perfusion
  - Adenosine dosing incorrect for poor perfusion
  - Adenosine given for Wide-Complex Irregular tachycardia
- e. Synchronized Cardioversion (SC)
  - Synchronized Cardioversion not performed for SVT/narrow complex with persistent poor perfusion
  - Synchronized Cardioversion not performed for SVT/narrow complex with ALOC
  - Synchronized Cardioversion not performed for Wide-Complex Regular Monomorphic Tachycardia with poor perfusion if adenosine fails and IV not immediately available
  - Synchronized Cardioversion not performed for Wide-Complex Irregular Tachycardia with poor perfusion

36. TP [1214](#) – PULMONARY EDEMA / CHF

- a. Continuous Positive Airway Pressure (CPAP) (CP)
  - CPAP not administered for moderate to severe respiratory distress (SBP  $\geq$  90mmHg and no contraindications)
  - CPAP administered to patient with contraindications
- b. Cardiac Monitoring (CM)



- Cardiac monitoring not initiated
- c. Vascular Access (VA)
  - Vascular Access not attempted for patient
  - Intraosseous Line not attempted when intravenous line cannot be established and Intraosseous Line indicated per MCG 1375
  - Intraosseous Line placed without indication as per MCG 1375
- d. Nitroglycerin (NG)
  - Nitroglycerin not administered
  - Nitroglycerin given for SBP <100mmHG
  - Nitroglycerin given when patient has taken sexually enhancing drugs within 48 hours
  - Nitroglycerin given without assessing for sexually enhancing drugs
  - Nitroglycerin dose incorrect for SBP
- e. Albuterol (AL)
  - Albuterol not given for patient with wheezing despite CPAP

37. TP [1215](#) / [1215-P](#) – CHILDBIRTH MOTHER

- a. Vascular Access (VA)
  - Vascular Access attempt delays transport
- b. Amniotic Sac (AN)
  - Amniotic sac showing with presenting crown and sac rupture not performed and/or documented
- c. Fundal Massage (FM)
  - Fundal massage not performed after placenta delivery
- d. Destination (DS)
  - Incorrect transport destination based on gestational age

38. TP [1216-P](#) – NEWBORN / NEONATAL RESUSCITATION

- a. Amniotic Sac (AN)
  - Amniotic sac showing with presenting crown and sac rupture not performed and/or documented
- b. Vascular Access (VA)
  - Vascular Access not attempted for a child who does not respond to initial resuscitation and BMV
  - Vascular Access attempt delays transport
- c. Chest Compressions (CC)
  - Chest compressions not performed for pulse <60bpm after BMV for 30 seconds
  - Chest compressions continued after pulse >60bpm
- d. Epinephrine (EP)
  - Epinephrine not administered for <60bpm once chest compressions begun

- Epinephrine not administered at correct dose

39. TP [1217](#) / [1217-P](#) – PREGNANCY COMPLICATION

- Vascular Access (VA)
  - Vascular Access not attempted
  - Vascular Access attempt delays transport
- Amniotic Sac (AN)
  - Amniotic sac showing with presenting crown and sac rupture not performed and/or documented
- Abnormal Delivery (AB)
  - Abnormal delivery not managed per protocol
- Tranexamic Acid (TX)
  - TXA administered when not indicated or contraindicated
  - TXA not administered when indicated
  - Improper administration of TXA (rate/dose/route)

40. TP [1218](#) / [1218-P](#) – PREGNANCY LABOR

As per “All Protocols”

41. TP [1219](#) / [1219-P](#) – ALLERGY

- Epinephrine (EP)
  - Epinephrine not administered for anaphylaxis
  - Epinephrine not administered at correct dose
  - Epinephrine not administered every 10min x 2 for persistent symptoms
  - Epinephrine administered by incorrect route
  - More than 3 doses of epinephrine administered
- Vascular Access (VA)
  - Vascular Access not attempted for patient with anaphylaxis
  - Intraosseous Line not attempted when Intravenous Line cannot be established in patients in anaphylactic shock
  - Intraosseous Line placed without indication as per MCG 1375
- Albuterol (AL)
  - Albuterol not given for patient with wheezing

42. TP [1220](#) / [1220-P](#) – BURNS

- Clothing (CL)
  - Clothing (jewelry) not removed from affected area
- Burn Management (BM)
  - Burn type not identified
  - Burn not managed by protocol for type

- c. Warming Measures (WM)
  - Measures not taken to keep patient warm

43. TP [1221](#) / [1221-P](#) – ELECTROCUTION

- a. Cardiac Monitoring (CM)
  - Cardiac Monitoring not initiated
- b. Clothing (CL)
  - Clothing (jewelry) not removed from affected area

44. TP [1222](#) / [1222-P](#) – HYPERTHERMIA (ENVIRONMENTAL)

- a. Cardiac Monitoring (CM)
  - Cardiac Monitoring not initiated
- b. Cooling Measures (CO)
  - Cooling measures not initiated

45. TP [1223](#) / [1223-P](#) – HYPOTHERMIA / COLD INJURY

- a. Cardiac Monitoring (CM)
  - Cardiac Monitoring not initiated
- b. Warming Measures (WM)
  - Warming measure not initiated

46. TP [1224](#) / [1224-P](#) – STINGS / VENOMOUS BITES

- a. Venomous Bite (VB)
  - Bite not managed by protocol for type

47. TP [1225](#) / [1225-P](#) – SUBMERSION

- a. Cardiac Monitoring (CM)
  - Cardiac Monitoring not initiated
- b. Warming Measures (WM)
  - Warming measures not initiated

48. TP [1226](#) / [1226-P](#) – ENT / DENTAL EMERGENCIES

- a. Control Bleeding (CB)
  - Bleeding control with direct pressure not attempted when indicated
- b. Tooth Avulsion (TA)
  - Avulsed tooth not placed in Normal Saline

49. TP 1227 – Omitted

50. TP [1228](#) / [1228-P](#) – EYE PROBLEM

- a. Shield Eye (SH)
  - Globe rupture suspected and eye not shielded
- b. Burn Management (BM)
  - Burn type not identified
  - Chemical burn not irrigated with Normal Saline 1L
  - Thermal burn not covered with dry dressing
- c. Ondansetron (ON)
  - Ondansetron not administered to nauseated patient with suspected globe rupture

51. TP [1229](#) / [1229-P](#) – ALOC

- a. Cardiac Monitoring (CM)
  - Cardiac monitoring not initiated
- b. Vascular Access (VA)
  - Vascular Access not attempted for patient
  - Intraosseous Line not attempted when Intravenous Line cannot be established and Intraosseous Line indicated as per MCG 1375
  - Intraosseous Line placed without indication as per MCG 1375
- c. Glucose (GL)
  - Blood Glucose not checked
- d. Modified Los Angeles Prehospital Stroke Screen (mLAPSS) (ML)
  - Adult – mLAPSS not performed when GCS is adequate for patient cooperation
  - Pediatric – Neurological exam not performed/documented

52. TP [1230](#) / [1230-P](#) – DIZZINESS / VERTIGO

- a. Glucose (GL)
  - Blood Glucose not checked
- b. Modified Los Angeles Prehospital Stroke Screen (mLAPSS) (ML)
  - Adult – mLAPSS not performed for vertigo
  - Pediatric – Neurological exam not performed/documented

53. TP [1231](#) / [1231-P](#) – SEIZURE

- a. Midazolam (MD)
  - Midazolam not administered for active seizure
  - Midazolam dose incorrect
  - Midazolam frequency incorrect
- b. Glucose (GL)
  - Blood Glucose not checked for persistent ALOC

54. TP [1232](#) / [1232-P](#) – STROKE / CVA / TIA

- a. Cardiac Monitoring (CM)
  - Cardiac Monitoring not initiated
- b. Vascular Access (VA)
  - Vascular Access not attempted for patients with Los Angeles Motor Score (LAMS) 4 or 5
- c. Glucose (GL)
  - Blood Glucose not checked
- d. Modified Los Angeles Prehospital Stroke Screen (mLAPSS) (ML)
  - mLAPSS not performed if GCS  $\geq$  8
  - mLAPSS not documented
- e. Los Angeles Motor Score (LAMS) (LA)
  - LAMS not performed for positive mLAPSS
  - LAMS not documented for positive mLAPSS
- f. Last Known Well Time (LK)
  - Last Known Well Time not documented

55. TP [1233](#) / [1233-P](#) – SYNCOPE / NEAR SYNCOPE

- a. Cardiac Monitoring (CM)
  - Cardiac monitoring not initiated
- b. 12-Lead ECG (EC)
  - 12-Lead ECG not performed as per MCG 1308
  - 12-Lead ECG paramedic interpretation not documented
  - 12-Lead ECG software interpretation not documented

56. TP [1234](#) / [1234-P](#) – AIRWAY OBSTRUCTION

- a. Obstructed Airway (OA)
  - > 1 year old - abdominal thrusts not performed in conscious patient who is unable to speak
  - < 1 year old – back blows/chest thrusts not performed in conscious patient
  - Chest compressions not initiated on patient that loses consciousness
  - Laryngoscopy not performed to visualize potential obstruction if chest compressions fail to dislodge foreign body
  - Visible foreign body removal not attempted with McGill forceps if laryngoscopy performed
- b. Unmanageable Airway (UA)
  - Immediate MAR transport not initiated
- c. Cardiac Monitoring (CM)
  - Cardiac Monitoring not initiated

- d. Epinephrine (EP)
  - Epinephrine neb not administered for stridor with respiratory distress
  - Epinephrine IM not administered for visible airway/tongue swelling
  - Epinephrine not administered at correct dose
  - Epinephrine not administered by correct route for indication
  - Epinephrine not administered at correct frequency
  - Epinephrine neb administered more than 2 times
- e. Tracheostomy Management (TM)
  - Suctioning not attempted
  - Inner cannula not removed and cleaned if present
  - Tracheostomy not removed and replaced when indicated

57. TP [1235-P](#) – BRUE

- Cardiac Monitoring (CM)
  - Cardiac monitoring not initiated

58. TP [1236](#) / [1236-P](#) – INHALATION INJURY

- a. Remove from Environment (RE)
  - Patient not removed from environment for ongoing exposure
- b. Epinephrine (EP)
  - Epinephrine neb not administered for stridor with respiratory distress
  - Epinephrine not administered at correct dose
  - Epinephrine not administered at correct frequency
  - Epinephrine neb administered more than 2 times
- c. Albuterol (AL)
  - Albuterol not given for patient with wheezing/bronchospasm
- d. Continuous Positive Airway Pressure (CPAP) (CP)
  - CPAP not administered for moderate to severe respiratory distress (SBP  $\geq$  90mmHg, no contraindications, and patient size > length-based resuscitation tape)
  - CPAP administered to patient with contraindications

59. TP [1237](#) / [1237-P](#) – RESPIRATORY DISTRESS

- a. Continuous Positive Airway Pressure (CPAP) (CP)
  - CPAP not administered for moderate to severe respiratory distress (SBP  $\geq$  90mmHg, no contraindications, and patient size > length-based resuscitation tape)
  - CPAP administered to patient with contraindications
- b. Albuterol (AL)
  - Albuterol not given for patient with wheezing
- c. Epinephrine (EP)

- Epinephrine IM not administered for deteriorating respiratory status despite albuterol
  - Epinephrine not administered at correct dose
  - d. Needle Thoracostomy (NE)
    - Needle Thoracostomy not performed when indicated as per MCG 1335
    - Needle Thoracostomy performed when not indicated as per MCG 1335
60. TP [1238](#) / [1238-P](#) – CARBON MONOXIDE EXPOSURE
- a. Remove from Environment (RE)
    - Patient not removed from environment for ongoing exposure
61. TP [1239](#) / [1239-P](#) – DYSTONIC REACTION
- a. Diphenhydramine (DP)
    - Dystonic reaction not recognized
    - Diphenhydramine not administered
62. TP [1240](#) / [1240-P](#) – HAZMAT
- a. Clothing (CL)
    - Clothing not removed
  - b. Decontaminate (DC)
    - Decontamination not performed as indicated
  - c. Irrigation (IR)
    - Eyes not flushed when indicated
    - Eye not irrigated with at least 1L Normal Saline
  - d. Cardiac Monitoring (CM)
    - Cardiac Monitoring not initiated
  - e. Nerve Agent Exposure (NA)
    - DuoDote not administered per protocol
  - f. Organophosphate Exposure (OG)
    - Atropine not administered as indicated per protocol
  - g. Radiologic Exposure (RA)
    - Detection device not utilized for suspected contamination
    - Cause of contamination not determined (if contamination confirmed)
    - Treatment not initiated for life threatening conditions in conjunction with decontamination (treatment delayed for decontamination)
63. TP [1241](#) / [1241-P](#) – OVERDOSE / POISONING / INGESTION
- a. Naloxone (NL)

- Naloxone not administered for hypoventilation/apnea in suspected opiate overdose
- Incorrect dose used for administration route
- b. Glucose **(GL)**
  - Blood Glucose not checked
- c. Antidote **(AE)**
  - Correct antidote not administered when available for suspected exposure

64. TP [1242](#) / [1242-P](#) – CRUSH INJURY / SYNDROME

- a. Hospital Emergency Response Team (HERT) **(HT)**
  - HERT not activated for anticipated prolonged entrapment (>30 minutes) or when otherwise indicated
- b. Vascular Access **(VA)**
  - Vascular Access not attempted
  - No discussion with base for Intraosseous Line if unable to establish Intravenous Line
  - Intraosseous Line placed without indication as per MCG 1375
- c. Fluid Administration **(FL)**
  - Adult – Normal Saline not administered as soon as possible prior to release
  - Adult – Less than 2L Normal Saline administered (unless contraindicated or hospital arrival prior to completion)
  - Pediatric – Normal Saline 20mL/kg not administered as soon as possible and prior to release
  - Pediatric – greater than 40mL/kg Normal Saline administered without base order
  - Patient not assessed after each Normal Saline 250mL and fluids continued unless contraindicated
- d. Cardiac Monitoring **(CM)**
  - Cardiac monitoring not initiated
- e. Warming Measures **(WM)**
  - Measures not taken to keep patient warm
- f. Hyperkalemia **(HK)**
  - Calcium Chloride not administered when evidence of hyperkalemia
  - Sodium Bicarbonate not administered when evidence of hyperkalemia
  - Albuterol not administered when evidence of hyperkalemia
  - Medications administered at wrong dose and/or route
- g. Crush Syndrome **(CS)**
  - Potential for Crush Syndrome not identified
  - Calcium Chloride not administered when risk for crush syndrome
  - Sodium Bicarbonate not administered when risk for crush syndrome
  - Albuterol not administered when risk for crush syndrome
  - Medications administered at wrong dose and/or route



- Medications administered at wrong time (not administered just prior to release of entrapment)
- h. Tranexamic Acid (TX)
  - TXA administered when not indicated or contraindicated
  - TXA not administered when indicated
  - Improper administration of TXA (rate/dose/route)

65. TP [1243](#) / [1243-P](#) – TRAUMATIC ARREST

- a. Scene (SD)
  - Patient transport delay
- b. Control Bleeding (CB)
  - Bleeding control not attempted when indicated
  - Tourniquet not applied when indicated as per MCG 1370
- c. Needle Thoracostomy (NE)
  - Needle Thoracostomy not performed when indicated as per MCG 1335
  - Needle Thoracostomy performed when not indicated as per MCG 1335
- d. Defibrillation (DF)
  - Adult - Defibrillation biphasic at 200J not performed immediately for shockable rhythm
  - Pediatric – Defibrillation not performed immediately for shockable rhythm as per MCG 1309
  - Defibrillation performed for non-shockable rhythm
- e. Spinal Motion Restriction (SMR) (SR)
  - Backboard used solely for purpose of SMR
  - Transport delayed for SMR
- f. Vascular Access (VA)
  - Vascular Access not attempted
  - Intraosseous Line not attempted when Intravenous Line cannot be established as per MCG 1375
  - Transport delayed for vascular access
- g. Fluid Administration (FL)
  - Normal Saline not administered by rapid infusion
  - Less than 2L Normal Saline initiated

66. TP [1244](#) / [1244-P](#) – TRAUMATIC INJURY

- a. Scene (SD)
  - Patient transport delayed
- b. Control Bleeding (CB)
  - Bleeding control not attempted when indicated

- Tourniquet not applied when indicated as per MCG 1370
- c. Needle Thoracostomy (NE)
  - Needle Thoracostomy not performed when indicated as per MCG 1335
  - Needle Thoracostomy performed when not indicated as per MCG 1335
- d. Spinal Motion Restriction (SMR) (SR)
  - Backboard used solely for the purpose of SMR
  - Transport delayed for SMR
  - SMR not performed when indicated as per MCG 1360
  - SMR performed when not indicated and potentially harmful as per MCG 1360
  - Alert patient not rolled off backboard for transport (unless safety concern)
- e. Ondansetron (ON)
  - Ondansetron not administered to nauseated patient with suspected traumatic brain injury
- f. Fluid Administration (FL)
  - Inappropriate fluid administration for patient condition
  - Fluids not ordered when indicated or inadequate volume of fluids ordered
- g. Tranexamic Acid (TX)
  - TXA administered when not indicated or contraindicated
  - TXA not administered when indicated
  - Improper administration of TXA (rate/dose/route)

## **II. BASE HOSPITAL**

### **1. ALL BASE CONTACTS**

- a. Provider Impression (PI)
  - Primary PI in discussion with paramedics is clinically incorrect and/or not supported with documented data
  - Primary PI not documented
  - Secondary PI not documented when appropriate
- b. Treatment Protocol (TP)
  - Designated TP for PI not used
  - Secondary TP for secondary PI not used when appropriate
  - Base hospital orders deviate from treatment protocol standards without documented clinical rationale
- c. Critical Interventions
  - i. Synchronized Cardioversion (SC)
    - Inappropriate cardioversion (indication, energy, timing)
    - Cardioversion not ordered when indicated
  - ii. Push-Dose Epinephrine (PD)

- Inappropriate administration of push-dose epinephrine (indication, dose, timing)
- Push-dose epinephrine not ordered when indicated
- iii. Transcutaneous Pacing (TCP) (TC)
  - Inappropriate administration of TCP (indication, settings, timing)
  - TCP not ordered when indicated
- iv. Fluid Administration (FL)
  - Inappropriate fluid administration for patient condition
  - Fluids not ordered when indicated or inadequate volume of fluids ordered
- v. Pain (PN)
  - Inappropriate pain management treatment (indication, dose, frequency)
  - Pain management not ordered when indicated
- d. Transport (TS)
  - Advanced Life Support (ALS) transport not made when indicated by Ref. No. 1200.1 (i.e. inappropriate BLS downgrade)
- e. Destination (DS)
  - Not directing transport to a specialty center when indicated
  - Directing transport to the wrong specialty center; includes Trauma Center, Perinatal Center, STEMI Receiving Center, Primary and Comprehensive Stroke Centers, Emergency Department Approved for Pediatrics and Pediatric Medical Center.
  - Directing transport to the incorrect stroke center level based on mLAPSS, LAMS and Last Known Well Time
- f. Termination of Resuscitation (TR)
  - Cardiac Resuscitation terminated without meeting Ref. 814 criteria
  - Cardiac arrest transported when meets Ref. 814 criteria and judgement for transport not described

## Medical Control Guideline: VASCULAR ACCESS

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### PRINCIPLES:

1. Vascular access is a catheter inserted intravenously (IV) or a needle inserted intraosseously (IO), through which medications and/or fluids can be administered.
2. Not all patients will require vascular access.
3. Peripheral IV, placed by EMS, is the preferred vascular access method for patients requiring parenteral therapy.
4. Intraosseous (IO) placement or use of a pre-existing vascular access device (PVAD) may be necessary for patients requiring emergent prehospital vascular access in whom an IV cannot be readily placed.

### GUIDELINES:

#### Intravenous Lines

1. Paramedics should first attempt placement of an IV saline lock for patients requiring parenteral access for medications or fluid volume.
2. In patients whose clinical condition allows, a minimum of two attempts at IV insertion should be made prior to consideration of IO placement.

#### Intraosseous Lines

3. IO access is indicated for adult and pediatric patients in cardiopulmonary arrest, shock/poor perfusion, severe burns and extremis when intravenous (IV) access is not possible or cannot be achieved quickly.
  - a. IO contraindications:
    - Deformity, suspected fracture, or infection at the placement site
    - Inability to identify landmarks
  - b. The most common complication of IO placement is local infiltration of fluid resulting in tissue damage or compartment syndrome. Other, rare complications include growth plate injury in pediatric patients, skin or bone infection, and fat embolism into the patient's circulation.
  - c. If the patient requires vascular access for medication/fluid administration, but does not meet the indications above, **CONTACT BASE** to discuss IO placement.
  - d. If an IO is in place, IV medications may be given by IO route even if not specifically stated in the Treatment Protocol.
4. IO Placement is approved for all Provider Agencies for placement at the flat surface of the proximal medial tibia, utilizing the tibial tuberosity (pediatric and adult patients) as the landmark for proper placement. It may also be placed in the greater tuberosity of the

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humeral head (adults only - with prior Provider Agency approval by the EMS Agency). The preferred IO site should be free from signs of infection or trauma.

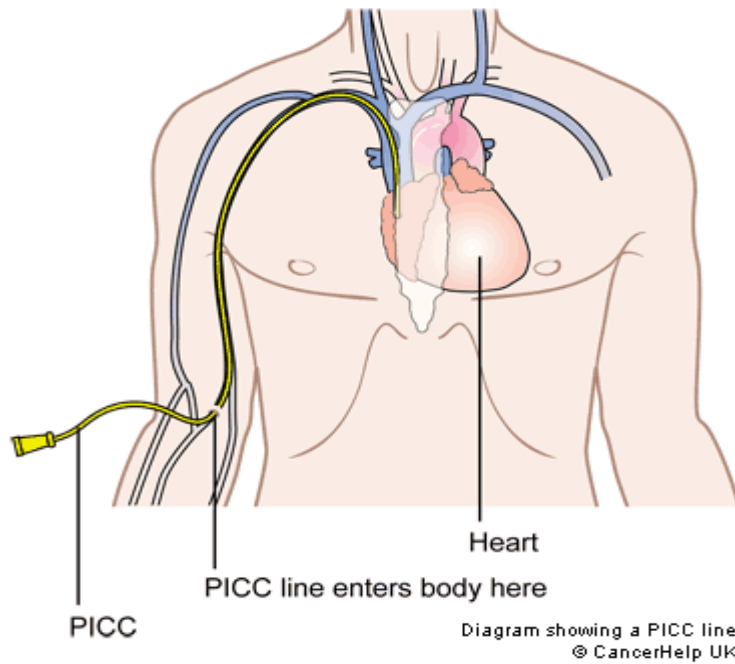
- a. Explain the plan to use the IO as a vascular access site to the patient, family or caregiver if present during the resuscitation.
  - b. IO placement may be attempted once on each tibia and/or each proximal humerus. Note that the proximal humerus site may be more effective for delivering resuscitation medications. However, humeral IO placement should not be attempted unless the paramedic has been trained in use of this location.
  - c. Prior to using the IO line slowly flush with 10mL normal saline. The IO site can be used if it flushes easily without signs of swelling in the soft tissues around or behind the bone.
  - d. Document all sites where IO access is attempted and/or achieved.
  - e. If swelling occurs or infiltration is suspected, stop infusion, remove IO needle, and apply pressure bandage to the IO site.
5. **Pain management:** If utilizing IO for conditions other than cardiopulmonary arrest, lidocaine should be instilled to decrease pain associated with medication/fluid administration, prior to administration of any other medications/fluids. Infuse lidocaine 2% at the dosage listed below. Slow infusion is necessary to ensure the lidocaine remains in the medullary space of the bone. Allow lidocaine to dwell in space for 60 seconds prior to flushing with normal saline. If patient experiences pain on medication or NS flush after initial dose of lidocaine, repeat with half of the initial dose.
- Adults: **Lidocaine 2% 40mg** slow IO push
  - Pediatric: **Lidocaine 2% (20 mg/ml) 0.5mg/kg** slow IO push, dose per **MCG 1309**. Not to exceed the adult dose.

#### **Pre-existing Vascular Access Devices (PVAD)**

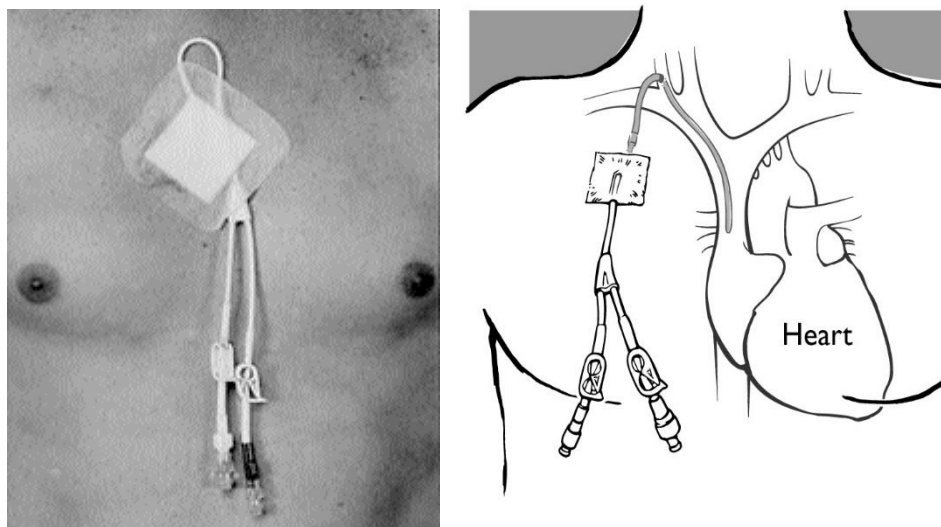
6. Pre-existing vascular access devices (PVAD) (e.g. PICC lines, ports) provide access to the central circulation through a long catheter inserted beneath the skin, allowing rapid, pain-free administration of medications and intravenous fluid.
  - Patients and caregivers can often provide valuable information regarding PVAD.
7. EMS personnel should consider other routes of medication administration such as intramuscular (IM) or intranasal (IN) before using pre-existing vascular access devices in patients without cardiopulmonary arrest.
8. EMS personnel may utilize the following PVADs with externally visible access ports without base order for patients in cardiopulmonary arrest or shock requiring immediate treatment, if unable to place IV or IO successfully at other sites.
  - a. *Peripherally Inserted Central Catheters (PICC lines)* – Figure 1
    - Swab ports with alcohol swabs twice, utilizing two separate alcohol swabs
    - Withdraw 5-10 mL of blood into a syringe to clear any small clots that may have formed before infusing medications/fluids

- b. *Tunneling catheters such as Broviac, Hickman, and Groshong* – Figure 2
  - c. *Non-tunneled, dual lumen catheters used for temporary dialysis access, i.e., Quinton catheters*
- 9. Base hospital order is required to use any PVADs for patients not in cardiopulmonary arrest or shock.
- 10. **Devices that require puncture of the skin (those without visible external access ports) may be accessed ONLY IN CARDIAC ARREST AND WITH BASE ORDER.**
  - a. Arteriovenous shunts (synthetic bridges between the arterial and venous circulation used for dialysis; located under the skin of the forearm) – Figures 3 and 4
  - b. Subcutaneous internal access devices that require access through the skin (often found in the upper chest or forearm) for example, Port-a-Cath – Figure 5
- 11. Observe adherence to sterile technique when handling PVADs. Contamination of these devices may cause severe infection or dysfunction requiring surgical removal.
- 12. Do not introduce air or allow IV fluids to run dry; these are direct lines into the central circulation.
- 13. Use padded hemostats to clamp the catheter if catheter gets damaged during access.

## **Images: ACCESSIBLE DEVICES – devices with externally visible access ports**

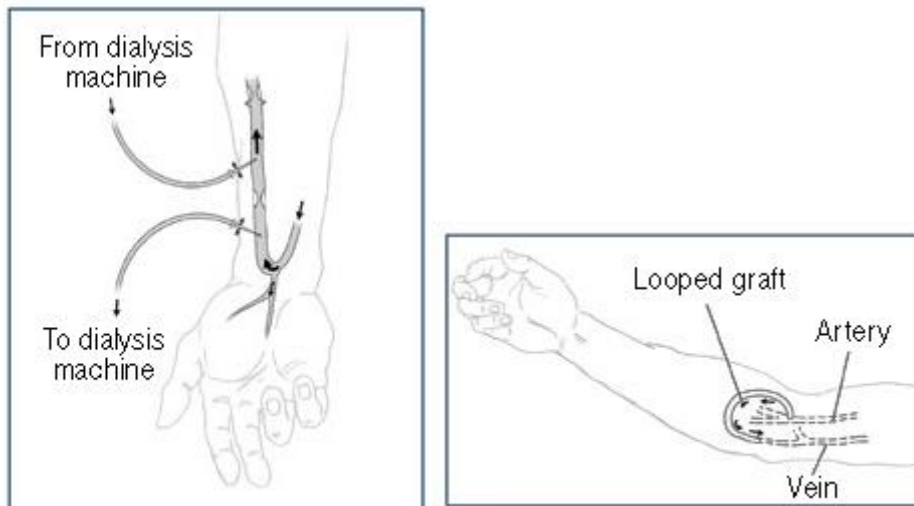


**Figure 1: Peripherally Inserted Central Catheter Line (PICC)**



**Figure 2: External and internal views: Tunneling Catheter, e.g., Groshong, Hickman, and Broviac.**

**Images: DEVICES ACCESSIBLE ONLY IN CARDIAC ARREST**  
**AND WITH BASE ORDER** –no visible external access ports;  
require skin puncture for subcutaneous internal access.



**Figures 3 and 4: Arteriovenous fistula and arteriovenous graft used for dialysis**



**Figure 5: Port-a-Cath**



## Medical Control Guideline: VITAL SIGNS

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### PRINCIPLE:

1. Vital signs are a key component of the patient assessment utilized in determining the patient's physiological status, and the treatment options that best meet their needs.

### GUIDELINES:

1. Normal Vital Signs
  - a. Adult
    - i. SBP 90-139 mmHg
    - ii. DBP <90 mmHg
    - iii. HR 60-100 bpm
    - iv. RR 12-20 bpm
    - v. Oxygen saturation (O<sub>2</sub> sat) ≥ 94% (if patient on home O<sub>2</sub>, measured on O<sub>2</sub> at usual flow rate)
    - vi. Temperature 36-37.9°C (97-100.3°F)
  - b. Pediatric as per [MCG 1309](#); O<sub>2</sub> sat as defined in 1.a.v. and temperature as defined in 1.a.vi.
  - c. Circumstances should also be considered when assessing for and determining cause for concern regarding abnormal vital signs
2. Obtain and document the following vital signs on all patients:
  - a. Blood pressure (for patients < 3 years, document capillary refill instead)
  - b. Pulse
  - c. Respiratory rate and tidal volume
    - Adults – count respirations over 15 seconds and multiply by 4
    - Pediatrics – count respirations over 30 seconds and multiply by 2
  - d. Oxygen saturation
  - e. Temperature (excluding traumatic injury/arrest)
  - f. Level of consciousness
  - g. Pain level using appropriate pain scale
  - h. End-tidal CO<sub>2</sub> level for any patient receiving positive pressure ventilation
  - i. Skin signs
3. Document additional vital signs if measured:
  - a. Carbon monoxide level
4. For temperature, a single measurement is adequate.
5. For all other vital signs, repeat and document vital signs:
  - a. On any patient whose initial vital signs were not within normal limits
  - b. When patient's clinical condition changes
  - c. After any treatment
  - d. After administration of medications
  - e. Upon transfer of care
6. The paramedic should report the initial vital signs, the most recent vital signs if different, and any intervening treatments to the Base Hospital and/or Receiving Hospital personnel critical information that is needed for the receiving hospital to prepare for the patient.

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**PURPOSE:** To ensure that 9-1-1 patients are transported to the most appropriate facility that is staffed, equipped, and prepared to administer emergency and/or definitive care appropriate to the needs of the patient.

**AUTHORITY:** Health and Safety Code, Division 2.5, Section 1797.220  
California Administrative Code, Title 13, Section 1105 (c)

**PRINCIPLES:**

1. In the absence of decisive factors to the contrary, 9-1-1 patients shall be transported to the most accessible 9-1-1 receiving facility equipped, staffed, and prepared to receive emergency cases and administer emergency care appropriate to the needs of the patient.
  2. The most accessible receiving (MAR) facility may or may not be the closest facility geographically. Transport personnel shall take into consideration traffic, weather conditions, or other factors that may influence transport time in identifying the most accessible facility.
  3. The most appropriate receiving facility for a patient may be the health facility which is affiliated with their health plan. Depending upon the patient's chief complaint and medical history, it may be in the patient's best interest to be transported to their 'medical home', as defined by their health plan, personal physician, and/or medical records.
  4. Patients shall not be transported to a medical facility that is on diversion due to internal disaster.
  5. Notwithstanding any other provision of this reference, and in accordance with Ref. No. 503, Guidelines for Hospitals Requesting Diversion of ALS Patients, final authority for patient destination rests with the base hospital handling the call. Base hospitals shall honor diversion requests based on patient condition and available system resources.
- 9-1-1 patients shall ordinarily be transported to general acute care hospitals with a basic emergency department permit. Transport to other medical facilities (hospitals with a stand-by permit, clinics and other medical facilities approved by the EMS Agency) shall be performed only in accordance with this policy.

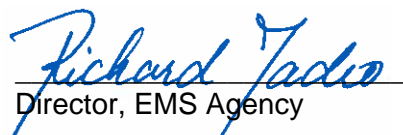
**POLICY:**

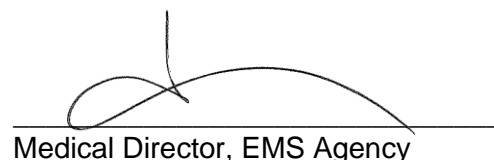
- I. Transport of Patients by EMT Personnel
  - A. EMT personnel shall transport 9-1-1 patients deemed stable and requiring only

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APPROVED:

  
Director, EMS Agency

  
Medical Director, EMS Agency

basic life support (BLS) to the MAR (exception: BLS Diversion or Internal Disaster).

- B. If the MAR has requested BLS diversion as per Ref. 503, the patient may be diverted to an alternate facility assuming the involved BLS unit estimates that it can reach an alternate facility within fifteen (15) minutes from the incident location. If there are no open facilities within this time frame, BLS patients shall be directed to the MAR, regardless of its diversion status (exception: Internal Disaster).
- C. EMT personnel may honor patient requests to be transported to other than the MAR provided that the patient is deemed stable, requires basic life support measures only, and the ambulance is not unreasonably removed from its primary area of response. In order to facilitate this, EMT personnel may transfer care of a patient to another EMT team if necessary.
- D. In life-threatening situations (e.g., unmanageable airway or uncontrollable hemorrhage) in which the estimated time of arrival (ETA) of the paramedics exceeds the ETA to the MAR, EMTs should exercise their clinical judgment as to whether it is in the patient's best interest to be transported prior to the arrival of paramedics.
- E. EMT personnel may immediately transport hypotensive trauma patients with life-threatening, penetrating injuries to the torso to the closest trauma center, not the MAR, when the transport time is less than the estimated time of paramedic arrival. The transporting unit should make every effort to contact the receiving trauma center while in route.

## II. Transport of Patients by Paramedic Personnel

### A. Patients should be transported to the MAR unless:

- 1. The base hospital determines that another facility is more appropriate to meet the needs of the patient; or
- 2. The patient meets criteria or guidelines for transport to a specialty care center (i.e., Trauma Center, Pediatric Trauma Center, ST-Elevation Myocardial Infarction Receiving Center, Emergency Department Approved for Pediatrics, Pediatric Medical Center, Perinatal Center, Sexual Assault Response Team Center, or Designated Stroke Center);
- 3. The patient requests a specific hospital; and
  - a. The patient's condition is considered sufficiently stable to tolerate additional transport time; and
  - b. The requested hospital does not have a defined service area (see Section V of this policy); and

- c. The requested hospital can provide services appropriate to the patient's chief complaint; and
    - d. The EMS provider has determined that such a transport would not unreasonably remove the unit from its primary area of response. If the provider is unable to honor the request, and the patient therefore refuses to be transported, the provider should attempt to arrange for alternate transportation (i.e., private ambulance), in order to assist patient with receiving necessary treatment.
  - 4. The MAR has requested diversion of 9-1-1 patients requiring advanced life support (ALS) as specified in Ref. No. 503. ALS patients may be directed to an alternate open facility provided:
    - a. The patient does not exhibit an unmanageable airway or uncontrolled hemorrhage.
    - b. The involved ALS unit estimates that it can reach an alternate facility within fifteen (15) minutes, Code 3, from the incident location. If there are no open facilities within this time frame, ALS patients shall be directed to the MAR, regardless of its diversion status (exception: Internal Disaster).
  - B. Paramedic personnel may transfer care of a patient to another paramedic team if necessary. If base hospital contact has been made, the initial paramedic team shall advise the base hospital that another paramedic team has assumed responsibility for the patient.
- III. Destination of Restrained Patients
  - A. Restrained patients shall be transported to the MAR within the guidelines of this policy. Allowable exceptions:
    - 1. Patients without a medical complaint, with a 5150 order written by a designated Department of Mental Health Team, when transport to a psychiatric facility has been arranged.
    - 2. A law enforcement request for transport to medical facilities other than the closest may be honored with base hospital concurrence.
- IV. Transport to Hospitals or Medical Facilities that are Non 9-1-1 Receiving Facilities
  - A. Patient requests for transport to hospitals that are not 9-1-1 Receiving Facilities may be honored by EMT or paramedic personnel provided:
    - 1. The patient, family, or private physician is made aware that the requested hospital is not a 9-1-1 receiving facility;

2. The Base hospital or EMS provider contacts the requested facility and ensures that the hospital has agreed to accept the patient;
  3. If transport requires additional transport time, the patient's condition is considered sufficiently stable to tolerate and the EMS provider has determined that such a transport would not unreasonably remove the unit from its primary area of response
- B. Other medical facilities approved on an individual basis by the EMS Agency:
- 9-1-1 patients may be transported to medical facilities other than hospitals (i.e., clinics, etc.) only when approved in advance by the EMS Agency.
- V. Transport to Designated Service Area Facilities
- A. Patients shall be transported by EMT or paramedic personnel to hospitals with a designated service area whenever the incident location is within the hospital's defined service area (exception: diversion for Internal Disaster). In most instances, the service area hospital is also the MAR.
  - B. If a patient within the defined service area meets criteria or guidelines for a specialty care center, for care not provided by the service area hospital, this patient shall be transported to the appropriate specialty care center.
  - C. Patient requests for transport to a service area hospital when the incident location is outside the hospital's defined service area or inside the service area of another hospital, may be honored by:
    1. EMT personnel if it is a BLS patient, the receiving hospital is contacted and agrees to accept the patient, and the transporting unit is not unreasonably removed from its primary response area.
    2. Paramedic personnel if the base hospital is contacted and concurs that the patient's condition is sufficiently stable to permit the estimated transport time, the requested hospital agrees to accept the patient, and the transporting unit is not unreasonably removed from its primary response area. The receiving hospital may be contacted directly if the ALS unit is transporting a BLS patient.

## CROSS REFERENCE:

Prehospital Care Manual:

Ref. No. 501, **Hospital Directory**  
Ref. No. 503, **Guidelines for Hospitals Requesting Diversion of ALS Patients**  
Ref. No. 504, **Trauma Patient Destination**  
Ref. No. 506, **Trauma Triage**

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Ref. No. 508,   **Sexual Assault Patient Destination**  
Ref. No. 508.1 **SART Center Roster**  
Ref. No. 509,   **Service Area Hospital**  
Ref. No. 510,   **Pediatric Patient Destination**  
Ref. No. 511,   **Perinatal Patient Destination**  
Ref. No. 512,   **Burn Patient Destination**  
Ref. No. 513,   **ST-Elevation Myocardial Infarction Patient Destination**  
Ref. No. 516,   **Cardiac Arrest Patient Destination**  
Ref. No. 518,   **Decompression Emergencies/Patient Destination**  
Ref. No. 519,   **Management of Multiple Casualty Incidents**  
Ref. No. 521,   **Stroke Patient Destination**  
Ref. No. 526,   **Behavioral/Psychiatric Crisis Patient Destination**  
Ref. No. 528,   **Intoxicated (Alcohol) Patient Destination**  
Ref. No. 838,   **Application of Patient Restraints**



SUBJECT: **TRAUMA TRIAGE**

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PURPOSE: To establish criteria and standards which ensure that patients requiring the care of a trauma center are appropriately triaged and transported.

AUTHORITY: California Code of Regulations, Title 13, Section 1105(c) California Code of Regulations, Title 22, Section 100236 et seq. Health and Safety Code, Div. 2.5, Section 1797 et seq., and 1317.

PRINCIPLES:

1. Trauma patients should be secured and transported from the scene as quickly as possible, consistent with optimal trauma care.
2. Paramedics shall make base hospital contact to the receiving trauma center on all injured patients who meet trauma triage criteria and/or guidelines. Notification to the receiving trauma center shall be made whenever paramedic judgment determines transport to the trauma center is in the patient's best interest. Contact shall be accomplished in such a way as not to delay transport.
3. Do not delay transport of hypotensive patients with penetrating torso trauma in order to apply spinal motion restriction.
4. EMT personnel may immediately transport hypotensive patients with life-threatening, penetrating injuries to the torso to the closest trauma center, not the Most Accessible Receiving (MAR), when the transport time is less than the estimated time of paramedic arrival. The transporting unit should make every effort to contact the receiving trauma center.
5. When pediatric and adult trauma patients are transported together in one aircraft, the receiving trauma center shall be both a trauma center and a pediatric trauma center.

POLICY:

- I. Trauma Criteria – Requires immediate transportation to a designated trauma center


Patients who fall into one or more of the following categories are to be transported directly to the designated trauma center, if transport time does not exceed 30 minutes.

- A. Systolic blood pressure less than 90 mmHg, or less than 70 mmHg in infants age less than one year

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REVISED: 01-01-23  
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APPROVED:   
Director, EMS Agency

  
Medical Director, EMS Agency

- B. Respiratory rate greater than 29 breaths/minute (sustained), less than 10 breaths/minute, less than 20 breaths/minute in infants age less than one year, or requiring ventilatory support
- C. Cardiopulmonary arrest with penetrating torso trauma unless based upon the paramedic's thorough assessment is found apneic, pulseless, asystolic, and without pupillary reflexes upon arrival of EMS personnel at the scene
- D. All penetrating injuries to head, neck, torso, and extremities proximal to the elbow or knee
- E. Blunt head injury associated with a suspected skull fracture, altered level of consciousness (Glasgow Coma Score less than or equal to 14), seizures, unequal pupils, or focal neurological deficit
- F. Injury to the spinal column associated with acute sensory or motor deficit
- G. Blunt injury to chest with unstable chest wall (flail chest)
- H. Diffuse abdominal tenderness
- I. Suspected pelvic fracture (excluding isolated hip fracture from a ground level fall)
- J. Extremity with:
  - 1. Neurological/vascular compromise and/or crushed, degloved, or mangled extremity
  - 2. Amputation proximal to the wrist or ankle
  - 3. Fractures of two or more proximal (humerus/femur) long-bones
  - 4. Bleeding not controlled by direct pressure requiring the usage of a hemorrhage control tourniquet or hemostatic agent (approved provider agencies only)
- K. Fall from height > 10 feet (all patients)
- L. Passenger space intrusion of greater than 12 inches into an occupied passenger space
- M. Ejected from vehicles (partial or complete)
- N. Auto versus pedestrian/bicyclist/motorcyclist thrown, run over, or with significant (greater than 20 mph) impact



- O. Unenclosed transport crash with significant (greater than 20 mph) impact
- P. Major / Critical Burn (excluding those in which the MAR is a recognized Burn Center, e.g., Los Angeles General Medical Center, Torrance Memorial Medical Center, West Hills Hospital):
  - 1. Patients 15 years of age or older with 2<sup>nd</sup> (partial thickness) and 3<sup>rd</sup> (full thickness) degree burns involving equal to or greater than 20% Total Body Surface Area (TBSA)
  - 2. Patients  $\leq$  14 years of age with 2<sup>nd</sup> (partial thickness) and 3<sup>rd</sup> (full thickness) degree burns involving equal to or greater than 10% TBSA
- II. Trauma Guidelines – Mechanism of injury and patient history are the most effective methods of selecting critically injured patients before unstable vital signs develop. Paramedics and base hospital personnel should consider mechanism of injury and patient history when determining patient destination. At the discretion of the base hospital, transportation to a trauma center is advisable for:
  - A. Passenger space intrusion of greater than 18 inches into any unoccupied passenger space
  - B. Automobile versus pedestrian/bicyclist/motorcyclist (impact equal to or less than 20 mph)
  - C. Injured victims of vehicular crashes in which a fatality occurred in the same vehicle
  - D. Patients requiring extrication
  - E. Vehicle telemetry data consistent with high risk of injury
  - F. Injured patients (excluding isolated minor extremity injuries):
    - 1. on anticoagulation or antiplatelet therapy, other than aspirin-only
    - 2. with bleeding disorders
- III. Special Considerations – Consider transporting injured patients with the following to a trauma center:
  - A. Patients in blunt traumatic full arrest who, based on a paramedic's thorough patient assessment, was not found apneic, pulseless, and without organized ECG activity (narrow complex supraventricular rhythm) upon the arrival of EMS personnel at the scene

- B. Systolic blood pressure less than 110 mmHg may represent shock after age 65 years
- C. Heart rate greater than systolic blood pressure for  $\geq 14$  years of age
- D. Child (0-9 years of age) unrestrained or in an unsecured child safety seat
- E. Pregnancy greater than 20 weeks gestation
- F. Prehospital judgment

IV. Extremis Patients - Requires immediate transportation to the MAR:

- A. Patients with an obstructed airway or those with concern for imminent airway obstruction due to inhalation injury
- B. Patients, as determined by the base hospital personnel, whose lives would be jeopardized by transportation to any destination but the MAR

V. When, for whatever reason, base hospital contact cannot be made, the destination decision for injured patients will be made by paramedics using the principles set forth above.

VI. 9-1-1 Trauma Re-Triage – This section applies to injured patients in emergency departments of non-trauma centers whose injuries were initially estimated by EMS to be less serious (under triaged) or patients who self-transported (walk-in) to a non-trauma center, and subsequently assessed by the non-trauma center physician to require immediate trauma center care. The referring facility shall utilize the procedure outlined below to expedite transfer arrangements and rapid transport to the trauma center. This process should be reserved for patients with life-threatening traumatic injuries requiring emergent surgical intervention.

- A. Determine if the injured patient meets any of the following 9-1-1 Trauma Re-Triage criteria:
  - 1. Persistent signs of poor perfusion
  - 2. Need for immediate blood replacement therapy
  - 3. Intubation required
  - 4. Glasgow Coma Score less than 9

5. Glasgow Coma Score deteriorating by 2 or more points during observation
  6. Penetrating injuries to head, neck and torso
  7. Extremity injury with neurovascular compromise or loss of pulses
  8. Patients, who in the judgement of the evaluating emergency physician, have high likelihood of requiring emergent life- or limb-saving intervention within two (2) hours.
- B. Contact the designated receiving trauma center or pediatric trauma center if the patient is less than or equal to 14 years of age and transport does not exceed 30 min. Do not delay transfer by initiating any diagnostic procedures that do not have direct impact on immediate resuscitative measures.
- C. Contact 9-1-1 for transportation. The paramedic scope of practice (Ref. No. 803) does not include paralyzing agents. Paramedics can monitor infusion of blood products that have been started by the transferring hospital prior to transport.
- D. Prepare patient and available medical records for immediate transport. Do not delay transport for medical records which could be sent at a later time.

## CROSS REFERENCE:

Prehospital Care Manual:

Ref. No. 501, **Hospital Directory**  
Ref. No. 502, **Patient Destination**  
Ref. No. 503, **Guidelines for Hospitals Requesting Diversion of ALS Units**  
Ref. No. 504, **Trauma Patient Destination**  
Ref. No. 506.1 **Trauma Triage Decision Scheme**  
Ref. No. 506.2 **9-1-1 Trauma Re-Triage**  
Ref. No. 510, **Pediatric Patient Destination**  
Ref. No. 803, **Paramedic Scope of Practice**  
Ref. No. 814, **Determination/Pronouncement of Death in the Field**  
Ref. No. 1333, **Monitoring Transfusion of Blood Products**

SUBJECT: **PEDIATRIC PATIENT DESTINATION**

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**PURPOSE:** To ensure that 9-1-1 pediatric patients are transported to the most appropriate facility that is staffed, equipped, and prepared to administer emergency and/or definitive care appropriate to the needs of the pediatric patient.

**AUTHORITY:** Health and Safety Code, Division 2.5, Section 1797.220  
California Code of Regulations, Title 13, Section 1105 C

**DEFINITIONS:**

**Brief Resolved Unexplained Event (BRUE):** A brief episode characterized by any one of the following (for children 12 months of age or younger): absent, decreased, or irregular breathing; color change (usually cyanosis or pallor); marked change in muscle tone (usually limpness or hypotonia, may also include hypertonia); and/or altered level of responsiveness.

**Emergency Department Approved for Pediatrics (EDAP):** A licensed basic or comprehensive emergency department that is designated by the Emergency Medical Services (EMS) Agency to receive pediatric patients via the 9-1-1 system.

**Newly Born:** Refers to patients from birth to two hours after birth.

**Pediatric Medical Center (PMC):** A licensed acute care hospital that is designated by the EMS Agency to receive critically ill pediatric patients via the 9-1-1 system based on guidelines outlined in this policy. These centers also provide referral services for critically ill pediatric patients.

**Pediatric Patient:** Children 14 years of age or younger.

**Pediatric Trauma Center (PTC):** A licensed acute care hospital that is designated by the EMS Agency to receive critically injured pediatric patients via the 9-1-1 system based on guidelines outlined in this policy. These centers provide tertiary-level pediatric care and serve as referral centers for critically injured pediatric patients.

**PRINCIPLE:**

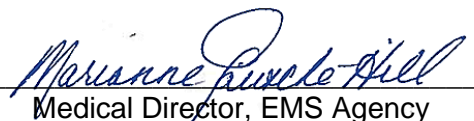
In all cases, the health and well-being of the patient is the overriding consideration in determining patient destination. Factors to be considered include severity and stability of the patient's illness or injury; current status of the pediatric receiving facility; anticipated transport time; request by the patient, family, guardian or physician; and EMS personnel and base hospital judgment.

**POLICY:**

EFFECTIVE DATE: 05-15-87  
REVISED: 01-01-23  
SUPERSEDES: 10-01-20

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APPROVED:   
Director, EMS Agency

  
Medical Director, EMS Agency

- I. Guidelines for transporting pediatric patients to a specialty care center (i.e., EDAP, PMC, PTC, Perinatal, Sexual Assault Response Team Center, or Trauma Center):
  - A. Patients who require transport, and do not meet guidelines for transport to a PMC or PTC should be transported to the most accessible EDAP.
    1. Newly born patient requiring assisted ventilation and/or chest compression should be transported to the most accessible EDAP that is also a Perinatal Center with a NICU.
    2. Newly born patient without distress should be transported to the nearest EDAP that is also a Perinatal Center.
  - B. BLS units shall call for an ALS unit on pediatric patients who meet criteria for Base Hospital Contact and ALS Transport as listed in Ref. No. 1200.1, Treatment Protocols General Instructions.
  - C. BLS units shall transport pediatric patients not requiring ALS unit response to the most accessible EDAP unless criteria are met for Treat and Refer as outlined in Ref. No. 834, Patient Refusal of Treatment/Transportation and Treat and Release at Scene.
  - D. Patients meeting conditions listed in Section II:
    1. Should be transported to the most accessible PMC if ground transport is ≤30 minutes.
    2. If ground transport time to a PMC is >30 minutes, the patient may be transported to the most accessible EDAP.
  - E. Patients meeting trauma criteria/guidelines as per Ref. No. 506, Trauma Triage:
    1. Should be transported to the most accessible PTC if the transport time is ≤30 minutes.
    2. If a PTC cannot be accessed but a trauma center can be accessed under the parameter in (E.1), the patient may be transported to the trauma center.
    3. If a PTC or trauma center cannot be accessed as specified above, the patient may be transported to the most accessible PMC, or if >30 minutes to the closest EDAP.
  - F. Pediatric patients who have an uncontrollable, life-threatening situation (e.g., unmanageable airway or uncontrollable hemorrhage) should be transported to the most accessible EDAP.
  - G. Pediatric patients may be transported to a non-EDAP provided all of the following are met:
    1. The patient, family, or private physician requests transport to a non-EDAP

facility.

2. The patient, family, or private physician is made aware that the receiving facility is not an EDAP and may not meet current EDAP standards.
3. The base hospital concurs and contacts the requested facility and ensures that the facility has agreed to accept the patient.
4. All of the above shall be documented on the Patient Care Record.

II. Critically ill pediatric patients exhibiting conditions listed below should be transported to a PMC:

- A. Cardiac dysrhythmia
- B. Severe respiratory distress
- C. Cyanosis
- D. Altered mental status without signs of improvement
- E. Status epilepticus
- F. Brief Resolved Unexplained Event (BRUE) ≤12 months of age
- G. Focal neurologic signs not associated with trauma (e.g.; pediatric stroke, atypical migraine, petit mal seizures)
- H. Post cardiopulmonary arrest in whom return of spontaneous circulation (ROSC) is achieved

IV: For multi-casualty incidents see Ref. No. 519, Management of Multiple Casualty Incidents, for destination.

CROSS REFERENCE:

Prehospital Care Manual:

Ref. No. 316,	<b>EDAP Standards</b>
Ref. No. 318,	<b>Pediatric Medical Care (PMC) Standards</b>
Ref. No. 324,	<b>Sexual Assault Response Team (SART) Standards</b>
Ref. No. 501,	<b>9-1-1 Receiving Hospital Directory</b>
Ref. No. 502,	<b>Patient Destination</b>
Ref. No. 504,	<b>Trauma Patient Destination</b>
Ref. No. 506,	<b>Trauma Triage</b>
Ref. No. 508,	<b>Sexual Assault Patient Destination</b>
Ref. No. 508.1,	<b>SART Center Roster</b>
Ref. No. 511,	<b>Perinatal Patient Destination</b>
Ref. No. 512,	<b>Burn Patient Destination</b>
Ref. No. 516,	<b>Cardiac Arrest Patient Destination</b>
Ref. No. 519,	<b>Management of Multiple Casualty Incidents</b>

Ref. No. 816, **Physician at Scene**

Ref. No. 832, **Treatment/Transport of Minors**

Ref. No. 834, **Patient Refusal of Treatment/Transport and Treat and Release at Scene**

Ref. No. 1200.1, **Treatment Protocols General Instructions**

SUBJECT: **DECOMPRESSION EMERGENCIES/  
PATIENT DESTINATION**

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PURPOSE: To provide a procedure for transporting patients with potential decompression emergencies to the most appropriate and accessible medical facility.

PRINCIPLES:

1. Provider Agency, Base Hospital and the Medic Alert Center shall follow the procedures outlined in the sections specific to their role.
2. Patient destination for patients with decompression emergencies shall be determined by the hyperbaric chamber physician on-call with an exception as specified in Policy I.D.

POLICY:

- I. Responsibilities of the Provider Agency:
  - A. Contact assigned base hospital for any patient suspected of having a decompression emergency.
  - B. Obtain dive incident history of the patient and dive partner, if possible. This includes:
    1. Maximum dive depth
    2. Time spent at depth
    3. Rate of ascent
    4. Number of dives
    5. Surface interval
    6. Gas(es) used
  - C. Coordinate patient transportation to the appropriate receiving facility.

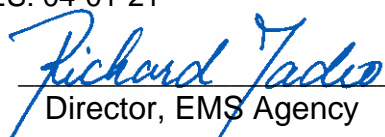
Transportation of patients with potential decompression emergencies may involve the United States Coast Guard (USCG) helicopter which does not include paramedic level staffing. In some circumstances, the USCG helicopter may be able to accommodate a Los Angeles County paramedic to accompany the patient to the receiving facility. If this is not possible and rapid transport is in the best interest of the patient, care may be transferred from the paramedics handling the call to the USCG medical personnel.

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- D. In rare instances, EMTs may determine destination to the Catalina Hyperbaric Chamber when ALS level of care is not immediately available in remote locations (e.g., offshore oil and gas platforms), and patient is found either unconscious, apneic, pulseless, or exhibiting symptoms of suspected decompression illness due to premature ascent and failure to complete required underwater decompression stops. In such cases, notification shall be made by the on-scene personnel (or notification relayed by US Coast Guard directly to the Catalina Hyperbaric Chamber) as follows:

1. Catalina Hyperbaric Chamber at (310) 510-1053
2. Los Angeles County Baywatch Isthmus lifeguard paramedics (if not already aware of the incident)
3. Medical Alert Center (MAC)

- E. Retrieve patient's dive equipment (e.g., dive computer, regulator, tank, buoyancy compensator, gauges and weight belt) and transport with patient. If the transporting unit cannot accommodate the equipment, the provider agency shall take custody of it and notify the receiving facility of the dive equipment location.

As a general rule, the integrity of the dive equipment should be maintained and not tampered with except by investigating authorities.

II. Responsibilities of the Base Hospital Physician or Mobile Intensive Care Nurse (MICN):

- A. Contact the Medical Alert Center (MAC) by dialing the general number (866) 940-4401; select Option 1 for emergency or consultation. The MAC will arrange a call between the hyperbaric chamber physician on call and the base hospital. If the hyperbaric physician has not responded within 10 minutes, the base hospital should re-contact the MAC.
- B. Provide medical orders for patient care.
- C. In consultation with the hyperbaric chamber physician on call (arranged through the MAC), determine if the patient should be transported directly from the incident location to a hyperbaric chamber or to the most accessible receiving facility (MAR). The following guidelines should be considered for any patient with a history of recent underwater compressed gas use:
1. Transport to a MAC-listed hyperbaric chamber (Immediate):
    - a. Unconscious, or
    - b. Apneic, or
    - c. Pulseless; or

- 
- d. Premature ascent with reported failure to complete any required underwater decompression stop(s) (omitted decompression) with or without symptoms.
  2. Transport to a MAC-listed hyperbaric chamber or the MAR after consultation with the hyperbaric chamber physician (Emergent):
    - a. Any neurological symptoms, or
    - b. Severe dyspnea, or
    - c. Chest discomfort
  3. Transport to the MAR with potential secondary transfer to a hyperbaric chamber after consultation with the hyperbaric chamber physician (Non-Emergent):
    - a. Delayed symptoms after flying, or
    - b. Delayed minor symptoms after 24 hours
  4. Patient destination for patients with decompression emergencies shall be determined by the hyperbaric chamber physician on call.

III. Responsibilities of the MAC:

- A. Contact the hyperbaric chamber physician on call at LAC+USC Medical Center and arrange communications between the physician and the base hospital directing the call. If there has been no response from the LAC+USC hyperbaric physician within 10 minutes, the MAC will call the next hyperbaric physician on the list.
- B. Following consultation with the hyperbaric physician on call, determine which hyperbaric chamber is most appropriate to the needs of the patient. Factors to be considered include distance; altitude; weather; ETA of available transportation; the limitations of various aircraft; and the condition of the patient.
- C. Inform the appropriate receiving facility of the patient's condition and ETA.
- D. Coordinate the hyperbaric chamber personnel's transportation to the chamber.
- E. Coordinate secondary transfers from the receiving facility as needed.

CROSS REFERENCE:

Prehospital Care Manual:

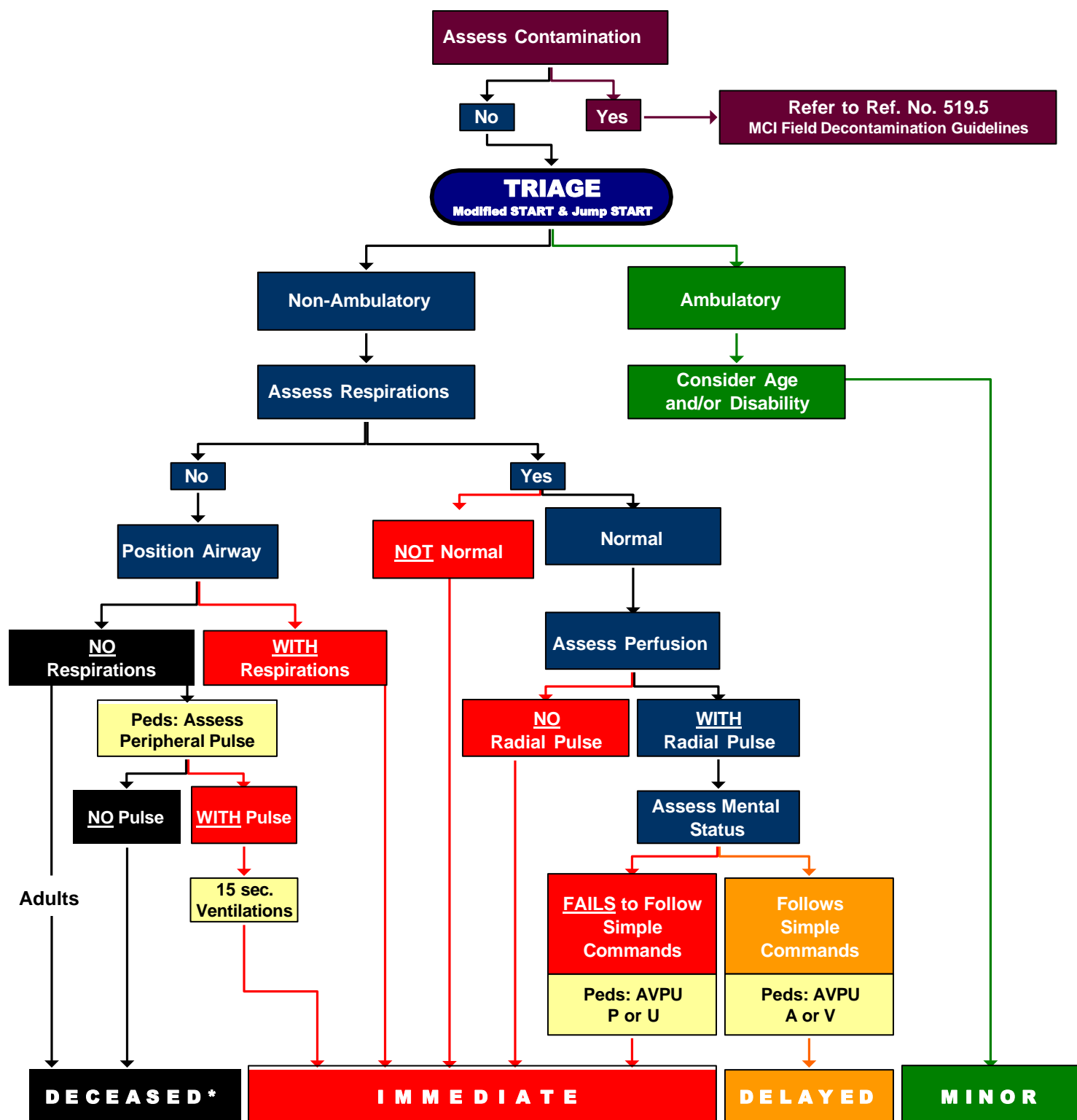
Ref. No. 502, **Patient Destination**  
Ref. No. 506, **Trauma Triage**

SUBJECT: **DECOMPRESSION EMERGENCIES/  
PATIENT DESTINATION**

REFERENCE NO. 518

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Ref. No. 516, **Return of Spontaneous Circulation (ROSC) Patient Destination**  
Ref. No. 814, **Determination/Pronouncement of Death in the Field**



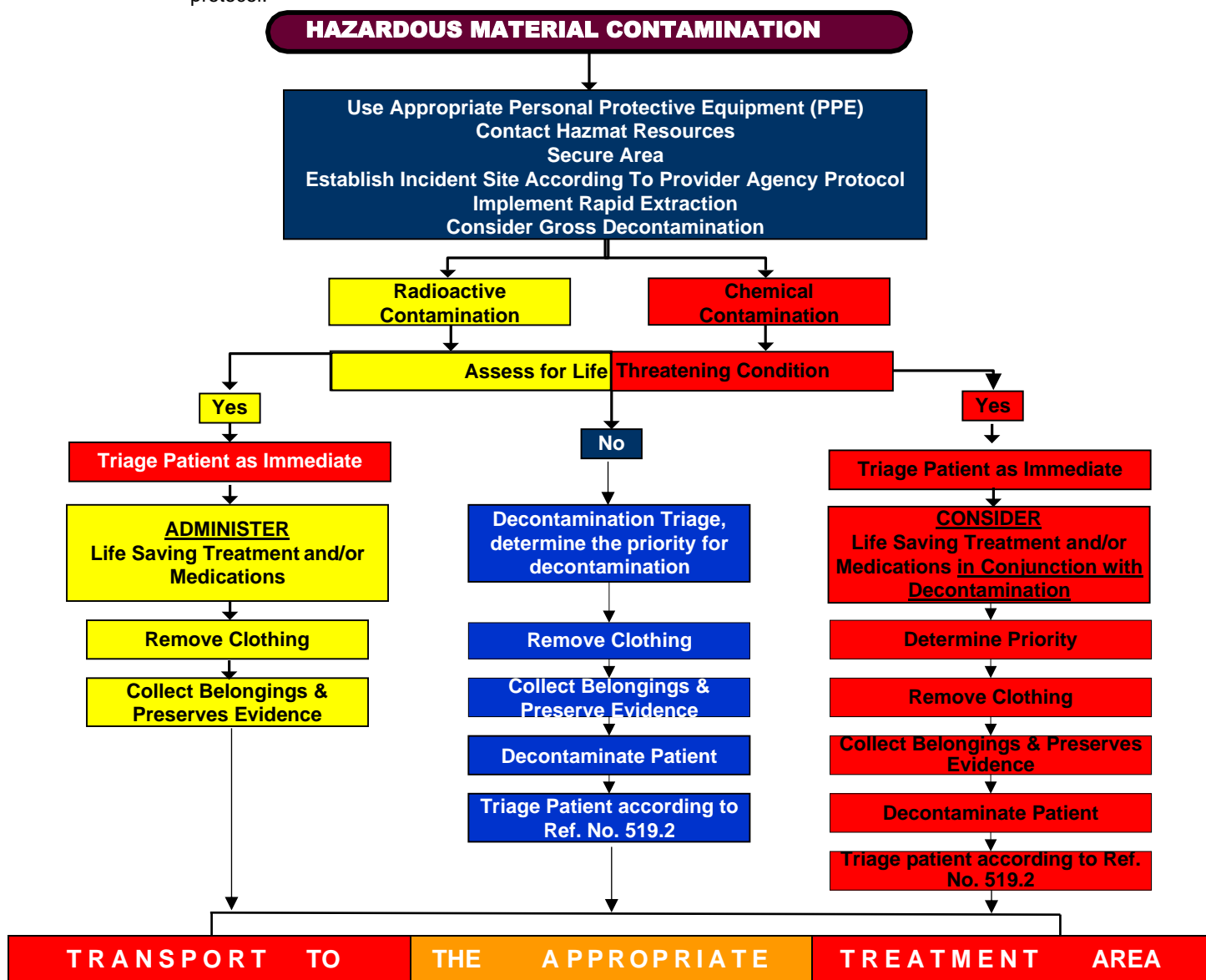
\* Coordinate with Law Enforcement / Coroner

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SUBJECT: **MCI FIELD DECONTAMINATION GUIDELINES**

PRINCIPLES:

1. The need for decontamination should not delay the provision of time critical medication and treatment (i.e., Mark 1 antidote).
2. Patients shall not be transported to the receiving facility if hazardous chemical contamination is present.
3. Do not delay treatment or transport of patients contaminated with radiation, who also have a life-threatening injury or medical condition. Contamination mitigation efforts and decontamination should be done, only if they do not delay treatment or transport.
4. If the incident involves chemical contamination and treatment is required, the provider shall contact the base hospital or Medical Alert Center (MAC). Treatment should be based on the appropriate treatment protocol.



SUBJECT: **BEHAVIORAL / PSYCHIATRIC CRISIS  
PATIENT DESTINATION**

PARAMEDIC  
REFERENCE NO. 526

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**PURPOSE:** To provide guidelines for the transport of patients with a primary provider impression of Behavioral/Psychiatric Crisis to the most appropriate facility that is staffed, equipped and prepared to administer medical care appropriate to the needs of the patient.

**AUTHORITY:** Health & Safety Code, Division 5, Sections 1797.220, 1798  
Title 22, California Code of Regulations, Title 22, Division 9, Chapter 5

**DEFINITIONS:**

**Behavioral/Psychiatric Crisis:** A provider impression for patients who are having a mental health crisis or a mental health emergency. This is not for anxiety or agitation secondary to medical etiology.

**Emergency Medical Condition:** A condition or situation in which an individual has an immediate need for medical attention. The presence of abnormal vital signs (heart rate and rhythm, respiratory rate, blood pressure, and oxygen saturation – except isolated asymptomatic hypertension) are also indications of an emergency medical condition. Patients who meet any criteria for Base Contact or Receiving Hospital Notification (Ref. No. 1200.2) are also considered to have an emergency medical condition.

**Mental Health Crisis:** Is a non-life threatening situation in which an individual is exhibiting extreme emotional disturbance or behavioral distress, considering harm to self or others, disoriented or out of touch with reality, has a compromised ability to function, or is otherwise agitated and unable to be calmed. Examples of mental health crisis includes:

- Talking about suicide threats
- Talking about threatening behavior
- Self-injury, but not needing immediate medical attention
- Alcohol or substance abuse
- Highly erratic or unusual behavior
- Eating disorders
- Not taking their prescribed psychiatric medications
- Emotionally distraught, very depressed, angry or anxious

**Mental Health Emergency:** Is a life-threatening situation in which an individual is imminently threatening harm to self or others, severely disoriented or out of touch with reality, has a severe inability to function, or is otherwise distraught and out of control. Examples of a mental health emergency includes:

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APPROVED:   
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- Acting on a suicide threat

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- Homicidal or threatening behavior
- Self-injury needing immediate medical attention
- Severely impaired by drugs or alcohol
- Highly erratic or unusual behavior that indicates very unpredictable behavior and/or inability to care for themselves

**Most Accessible Receiving Facility (MAR):** Is the geographically closest (by distance) 9-1-1 Receiving Hospital approved by the EMS Agency to receive patients with emergency medical conditions from the 9-1-1 system.

**Psychiatric Urgent Care Center (PUCC):** A mental health facility authorized by the Department of Mental Health and approved by the EMS Agency by meeting the requirements in Ref. No. 326, Psychiatric Urgent Care Center Standards.

**PRINCIPLES:**

1. EMS provider agencies must be approved by the Emergency Medical Services (EMS) Agency to triage patients with behavioral/psychiatric crisis to a designated PUCC.
2. Patients with a provider impression of Agitated Delirium must be transported to an emergency department for evaluation.
3. Paramedics who have completed an 8-hour educational session regarding the triage of patients to a PUCC are the only EMS personnel authorized to utilize this policy.
4. Patients exhibiting mental health crisis who meet PUCC inclusion criteria may also be released at the scene to the local law enforcement agency. Law enforcement officers are highly encouraged to transport these patients to a designated PUCC. Paramedics shall document on the EMS Report Form to whom the patient was released.
5. Patients receiving olanzapine who are cooperative and meet the criteria for screening as per *Ref. 526.1 Medical Clearance Criteria Screening Tool for Psychiatric Urgent Care Center (PUCC)*, may be transported by EMS (basic life support) or released to law enforcement to the PUCC.
6. In instances where there is a potential for the patient to harm self or others, EMS personnel shall consider seeking assistance from law enforcement.
7. Any patient who meets the triage criteria for transport to a PUCC, but who requests to be transported to an emergency department of a general acute care hospital, shall be transported to the emergency department of a general acute care hospital.
8. In all cases, the health and well-being of the patient is the overriding consideration in determining patient destination. Factors to be considered include severity and stability of the patient's illness or injury; status of the receiving facility; anticipated transport time;

9. requests by the patient, family, guardian or physician; and EMS personnel and base hospital judgment.

**POLICY:**

**IV. Responsibilities of the Paramedic**

- A. Complete an 8-hour educational session regarding the triage of patients to a designated PUCC
- B. Comply with all patient destination policies established by the EMS Agency

**V. EMS Provider Agency Requirements and Responsibilities**

- A. Submit a written request to the Director of the EMS Agency for approval to triage patients who meet PUCC Inclusion Criteria. The written request shall include the following:
  - 1. Date of proposed implementation date
  - 2. Scope of deployment (identify response units)
  - 3. Course/Training Curriculum addressing all items in Section IV
  - 4. Identify a representative to act as the liaison between the EMS Agency, designated PUCC(s), and the EMS Provider Agency
  - 5. Policies and procedures listed in Section B
- B. Develop, maintain and implement policies and procedures that address the following:
  - 1. Completion of one Medical Clearance Criteria Screening Tool for each patient (see sample Ref. No. 526.1)
  - 2. Pre-arrival notification of the PUCC
  - 3. Patient report to a licensed health care provider or physician at the PUCC
  - 4. Confirmation that PUCC has the capacity to accept the patient prior to transport
- C. Develop a Quality Improvement Plan or Process to review variances and adverse events
- D. Comply with data reporting requirements established by the EMS Agency



VI. Psychiatric Urgent Care Clinic (PUCC) Patient Triage Criteria

- A. Inclusion Criteria – patients who meet the following criteria may be triaged for transport to a designated PUCC provided the PUCC can be accessed within a fifteen (15) minute transport time:
1. Provider impression of behavior/psychiatric crisis; and
    - a. Voluntarily consented or 5150 hold; and
    - b. Ambulatory, does not require the use of a wheelchair; and
    - c. No emergent medical condition or trauma (with exception of ground level fall with injuries limited to minor abrasions below the clavicle); and
    - d. No focal neurological deficit
  2. Age:  $\geq 18$  years and  $\leq 65$  years old
  3. Vital Signs
    - a. Heart rate  $\geq 60$  bpm and  $\leq 120$  bpm
    - b. Respiratory rate  $\geq 12$  rpm and  $\leq 24$  rpm
    - c. Pulse oximetry  $\geq 94\%$  on room air
    - d. SBP  $\geq 100$  and  $< 180$  mmHg

Note: Isolated mild to moderate hypertension (i.e., SBP  $\leq 180$  mmHg with no associated symptoms such as headache, neurological changes, chest pain or shortness of breath) in a patient with a history of hypertension is not a reason to exclude referral to a PUCC
  4. Glasgow Coma Scale (GCS) Score of  $\geq 14$
  5. If history of Diabetes Mellitus, no evidence of ketoacidosis and a blood glucose  $\geq 60$  mg/dL and  $< 250$  mg/dL
- B. Exclusion Criteria – patients who meet the following conditions shall not be triaged to a PUCC, patient destination shall be in accordance with Ref. No. 502, Patient Destination or appropriate Specialty Care Center Patient Destination policy (i.e., Trauma Center, STEMI, Stroke):
1. Any emergent medical condition

2. Focal neurological deficit
  3. Any injury that meet trauma center criteria or guideline
  4. Complaint of chest pain, shortness of breath, abdominal/pelvic pain, or syncope
  5. Open wounds or bleeding
  6. Intoxication of drugs and/or alcohol
  7. Suspected pregnancy
  8. Requires special medical equipment
  9. Intellectual or developmental disability
  10. Exhibits dangerous behavior
  11. Signs and symptoms of agitated delirium (Reference No. 1208, Agitated Delirium)
  12. EMS personnel feels the patient is not stable enough for PUC
- VII. Paramedic Training Curriculum – the 8-hour paramedic educational session regarding the triage of patients to a PUC shall include, at minimum, the following:
- A. An overview of the curriculum, educational objectives, resources and operational structure
  - B. Impact of mental health crisis/emergency on local public health and emergency medical system resources
  - C. Overview of PUC capabilities and resources
  - D. Review of mental health disorders
  - E. In-depth review of the Inclusion and Exclusion Criteria, and the Medical Clearance Criteria Screening Tool for PUC
  - F. Legal and Ethics, include considerations for release at scene, refusal of treatment or transport (Against Medical Advice)
  - G. Interactions with other agencies (i.e., law enforcement, mental health professional)
  - H. Patient care documentation

- I. Quality improvement process and sentinel event reporting

CROSS REFERENCES:

Prehospital Care Manual:

Ref. No. 326, **Psychiatric Urgent Care Center (PUCC) Standards**  
Ref. No. 326.1, **Designated Psychiatric Urgent Care Center Roster**  
Ref. No. 502, **Patient Destination**  
Ref. No. 526.1, **Medical Clearance Criteria Screening Tool for Psychiatric Urgent Care Center**  
Ref. No. 1200.3 **Provider Impressions**  
Ref No. 1208 **Agitated Delirium**  
Ref No. 1209 **Behavioral/Psychiatric Crisis**

SUBJECT: **DOCUMENTATION OF PREHOSPITAL CARE**

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**PURPOSE:** To identify the base hospital and Emergency Medical Services (EMS) provider procedures for documentation of prehospital care.

**AUTHORITY:** California Code of Regulations, Title 22, Sections 100128, 100129, 100170, 100171

**DEFINITIONS:**

**EMS Response:** The physical response of an EMS provider due to activation of the EMS system with a request for medical evaluation.

**Multiple Casualty Incident (MCI):** The combination of numbers of ill/injured patients and the type of injuries going beyond the capability of an entity's normal first response.

**Patient:** A person who seeks or appears to require medical assessment and/or medical treatment.

**Patient Contact:** An EMS response that results in an actual patient or patients.

**Public Assist:** EMS is dispatched to scene for assistance for nonmedical issues.

**PRINCIPLES:**

1. The EMS Report Form and the Base Hospital Form are:
  - a. Patient care records
  - b. Legal documents
  - c. Quality improvement instruments
  - d. Billing resources
  - e. Records of canceled calls, no patient found, public assist involving a person, and person contact/no patient (EMS Record only)
2. Any assessment or treatment provided to, and medical history obtained from the patient shall be accurately and thoroughly documented on the EMS Record.
3. Any person who alters or modifies the medical record of any person, with fraudulent intent, or who, with fraudulent intent, creates any false medical record, is guilty of a misdemeanor (section 471.5 of the California Penal Code).
4. An EMS Report Form must be completed for every EMS response if a provider agency is unable to submit an annual volume report to the EMS Agency for the following types of calls:
  - a. Canceled calls
  - b. No patient(s) found

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- c. Public assist involving a person
- d. Person contact/no patient

**POLICY:****VIII. EMS Record Completion – Paramedic/EMT Personnel**

- A. EMS providers shall document prehospital care according to procedures identified in the EMS Documentation Manual.
- B. Paper-Based EMS Report Form Completion
  - 1. Paramedic/EMT personnel from the first responding agency shall complete one local EMS Agency approved EMS Report Form (one for each patient) for every 9-1-1 patient contact which includes the following:
    - a. Regular runs
    - b. DOA (dead on arrival; patients determined or pronounced dead per [Ref. No. 814](#), Determination/Pronouncement of Death in the Field)
    - c. ALS interfacility transfer patients
- C. Electronic EMS Patient Care Record (ePCR) Completion
  - 1. Paramedic/EMT personnel may document and submit prehospital care data electronically in lieu of the standard EMS Report Form if their department has received prior authorization from the EMS Agency.
  - 2. Paramedic/EMT personnel shall complete one EMS Agency approved ePCR (one for each patient) for every 9-1-1 patient contact which includes the following:
    - a. Regular runs
    - b. DOA (dead on arrival; patients determined or pronounced dead per Ref. 814, Determination/Pronouncement of Death in the Field)
    - c. ALS interfacility transfer patients
- D. Multiple Providers
  - 1. In the event of an automatic or mutual aid incident when two first responding providers have each completed an EMS Record, or patient care is transferred from one ALS provider agency to another, each provider agency shall document the Original Sequence Number from the other provider's patient care record in the space designated for Second Sequence Number. DO NOT cross out or line through the imprinted Sequence Number if utilizing a paper EMS Report Form.
  - 2. The provider agency transferring patient care must have a mechanism in place to provide immediate transfer of patient information to the transporting agency.

**E. Multiple Casualty Incidents (MCI)**

1. One standard EMS Record must be initiated for each patient transported in an MCI. Provider agencies may use alternate means of documenting MCIs if the EMS Agency is notified prior to implementation and agrees with the proposed process.
2. Documentation should include the following, at minimum:
  - a. Name
  - b. Provider Impression
  - c. Chief Complaint
  - d. Mechanism of Injury, if applicable
  - e. Age and units of age
  - f. Gender
  - g. Brief patient assessment
  - h. Brief description of treatment provided
  - i. Transporting provider (provider code and unit number) and level of service (ALS, BLS or Helicopter)
  - j. Destination
  - k. Receiving facility
3. Non-transported patients should be documented on a standard EMS Record, or a patient log.
4. Each provider agency should submit copies of all records and logs pertaining to an MCI of greater than 5 victims to the EMS Agency within 10 business days of the incident. MCI documents should be hand carried or delivered to the EMS Agency in an envelope clearly marked with the incident date and location.

**F. Completion of the EMS Record Prior to Distribution**

1. EMTs and paramedics responsible for documenting prehospital care shall ensure that EMS Records are completed in their entirety prior to dissemination of copies. In most instances, this means that the form is completed at the scene or upon arrival at the receiving facility.
2. An exception to this is when a first responding agency is utilizing paper-based EMS Report Forms is giving the receiving hospital (red) copy to a transporting agency. In the interest of expediting the transfer of care, it is recognized that information such as the unit times may not be documented on the receiving hospital (red) copy of the EMS Report Form.

**G. Field Transfer of Care**

1. When patient care has been transferred from the first responding ALS or BLS provider agency to a BLS provider agency for transport to a receiving facility, the provider agency receiving the patient should **NOT** generate an ePCR with a new Sequence Number (will result in the same patient being

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Entered into TEMIS with two different sequence numbers).

2. The provider agency that receives the BLS patient for transport to a receiving facility shall complete their agency's ePCR and document the Sequence Number generated by the first responding ALS or BLS provider agency's ePCR on their ePCR or paper-based EMS Report Form.
3. If utilizing a paper-based EMS Report Form, the receiving hospital (red) copy of the EMS Report Form, as well as the PCR from the BLS transport provider (red copy), must accompany the patient to the receiving facility where it becomes part of the patient's medical record.
4. It is the responsibility of the EMS Provider to ensure that a completed copy of the EMS Record is provided to the receiving facility upon transfer of care.

H. Completion of Advanced Life Support Continuation Form

1. If utilizing a paper-based EMS Report Form, required for each patient on whom advanced airway management is necessary.
2. Paramedics completing this form must ensure that the demographic information (patient name, date, provider code/unit, incident#) and Sequence Number are legibly and accurately transcribed from the EMS Report Form.

II. Base Hospital Form - MICN and/or Physicians

- A. Base hospital personnel (MICNs and physicians) shall document prehospital care according to procedures identified in the Base Hospital Documentation Manual.

B. Base Hospital Form Completion

1. MICNs and/or physicians shall complete one EMS Agency approved Base Hospital Form (one for each patient in which medical direction is given) for every base hospital paramedic radio/telephone contact.
2. MICNs and/or physicians may document and submit base hospital data electronically in lieu of the standard Base Hospital Form if the base hospital has received prior authorization from the EMS Agency.

C. Base Hospital Directed Multiple Casualty Incidents (MCI)

1. EMS Agency-approved MCI Base Hospital Forms may be utilized for incidents involving three or more patients.
2. Physicians and MICNs should limit requested information to **only** that which is essential to determine destination or medical management. Additional information and Sequence Numbers should be obtained after

the MCI has cleared.

3. The following should be documented for MCIs involving three or more patients:
  - a. Date
  - b. Time
  - c. Sequence Number / Triage Tag Number
  - d. Provider and unit
  - e. Chief complaint
  - f. Mechanism of injury, if applicable
  - g. Age and units of age
  - h. Gender
  - i. Brief patient assessment when possible
  - j. Brief description of treatment provided, when possible
  - k. Transporting provider, method of transport (ALS, BLS or helicopter)
  - l. Destination
  - m. Receiving Facility
4. Upon request of the EMS Agency the base hospital should submit all records pertaining to an MCI greater than 5 victims to the EMS Agency within 10 business days.
5. Provider agencies may use alternate means of reporting MCIs. Base Hospitals will be notified by the EMS Agency when alternate reporting methods will be implemented by various provider agencies.
6. MCIs involving **ONLY** BLS patients: BLS patients who are transported to a receiving facility should be documented on one Base Hospital Form in the Comments Section (provided no medical direction is given).
7. MCIs involving ALS **and** BLS Patients:
  - a. One standard Base Hospital Form or one EMS Agency-approved MCI Base Hospital Form must be completed for each ALS patient.
  - c. BLS patients on whom no medical direction has been given do not require a Base Hospital Form. The number and disposition of the BLS patients may be documented on the Base Hospital Form of an ALS patient in the Comments Section.
8. Alternate methods of documenting MCIs may be initiated by base hospitals with the approval of the EMS Agency.

### III. Modification of the EMS Report Form

- A. Modifying the EMS Report Form (additions, deletions or changes) after the form has been completed or disseminated:



1. For paper-based EMS Report Forms, make corrections by drawing a single line through the incorrect item or narrative (the writing underneath the single line must remain readable).  
  
Make the changes on the original, noting the date and time the changes were made, with the signature of the individual making the changes adjacent to the correction. Ideally, changes should be made by the individual who initially completed the form. Under no circumstances should changes to either patient assessment or patient treatment documentation be made by an individual who did not participate in the response.).
  2. An audit trail of changes made to an electronic record will be included on the ePCR.
- C. Making substantive changes (documentation of additional medications, defibrillation attempts, pertinent comments, complaints, etc.) to the EMS Record:
1. Photocopy the paper-based EMS Report Form with the changes and send the copy, along with a cover letter, to all entities that received the original form (EMS Agency, receiving facility). The cover letter should explain the modifications and request that the modified copy be attached to the original copy.
  2. Do not re-write the incident on a new paper-based EMS Report Form because this would result in a mismatch in Sequence Number. If the form requiring corrections has been mutilated or soiled and cannot be photocopied, then a new form may be used to re-write the incident provided the Sequence Number of the new form has been replaced with the Sequence Number from the original form.
  3. For electronic documentation systems, patient care related corrections are to be made as per provider agency policy. Provider agency shall notify its' receiving hospital(s) of the mechanism by which ePCRs are updated and when an ePCR is updated. If the receiving hospital receives a printed copy of the record, a printed copy of the revised record will be provided directly to them.

**CROSS REFERENCES:**Prehospital Care Manual:Ref. No. 519, **Management of Multiple Casualty Incidents**Ref. No. 607, **Electronic Submission of Prehospital Data**Ref. No. 608, **Retention and Disposition of Prehospital Patient Care Records**Ref. No. 640, **EMS Documentation Manual**Ref. No. 644, **Base Hospital Documentation Manual**

SUBJECT: **EMERGENCY MEDICAL TECHNICIAN (EMT)**  
**SCOPE OF PRACTICE**

(EMT, PARAMEDIC, MICN)  
REFERENCE NO. 802

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PURPOSE: To define the scope of practice for an Emergency Medical Technician (EMT) in Los Angeles County.

AUTHORITY: California Code of Regulations, Title 22, Division 9, Chapter 2, Section 100063

DEFINITIONS:

**Approved EMS Provider:** A jurisdictional 9-1-1 fire department or an ambulance operator currently licensed in Los Angeles County.

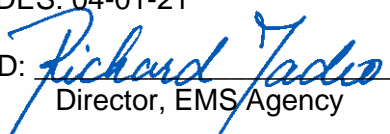
PRINCIPLES:

1. In order to function as an EMT in Los Angeles County, an individual must be certified/licensed in the State of California as an EMT, Advanced EMT (AEMT), or Paramedic.
2. EMS personnel are responsible to adhere to the scope of practice while functioning as an EMT in Los Angeles County.
3. When EMT personnel arrive prior to an advanced life support (ALS) unit, they shall assess the patient and make appropriate care and transport decisions as per Ref. No. [1200.1](#), Treatment Protocols General Instructions and Ref. No. [502](#), Patient Destination.
4. When EMTs assist patients with a physician prescribed medication or administer approved medications, as listed in Section III of this policy, an ALS unit must be en route or the patient must be transported to the most accessible receiving facility that meets the needs of the patient, if the ALS unit estimated time of arrival (ETA) exceeds the ETA to the MAR. The rationale for the decision to transport shall be documented on the EMS patient care record.
5. EMT personnel may immediately transport hypotensive patients with life-threatening, penetrating injuries to the torso to the closest trauma center, not the most accessible receiving (MAR), when the transport time is less than the estimated time of ALS arrival. The transporting unit should make every effort to contact the receiving trauma center.
6. If EMT personnel encounter a life-threatening situation (unmanageable airway or uncontrollable hemorrhage), they should exercise their clinical judgment as to whether it is in the patient's best interest to transport the patient prior to the arrival of an ALS unit if their estimated time of arrival (ETA) exceeds the ETA to the MAR. The rationale for the decision to transport shall be documented on an EMS patient care record.

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7. EMT personnel may honor a patient request for transport to a facility other than the MAR if the patient is deemed stable and only requires basic life support (BLS).
8. EMTs may transfer care of a patient to another EMT team if necessary.

POLICY:

IX. Basic Scope of Practice

During training, while at the scene of an emergency, during transport of the sick or injured, or during interfacility transfer, a certified EMT or a supervised EMT student is authorized to do any of the following:

A. Patient Assessment

1. Evaluate the ill or injured patient
2. Obtain diagnostic signs to include, but not limited to:
  - a. respiratory rate
  - b. pulse rate
  - c. skin signs
  - d. blood pressure
  - e. level of consciousness
  - f. pupil status
  - g. pain
  - h. pulse oximetry (if available)

B. Rescue and Emergency Medical Care

1. Provide basic emergency care
2. Perform cardiopulmonary resuscitation (CPR)
3. Utilize mechanical adjuncts for basic cardiopulmonary resuscitation  
**(Requires EMS Agency approval – Approved EMS Providers)**
4. Use a public access Automated External Defibrillator (AED) **(Carrying an AED requires EMS Agency approval as an AED Service Provider)**
5. Administer oral glucose or sugar for suspected hypoglycemia
6. Apply mechanical restraints per Ref. No. [838](#), Application of Patient Restraints
7. Use various types of stretchers
8. Perform field triage

9. Extricate entrapped persons
10. Set up for ALS procedures under paramedic direction
- C. Airway Management and Oxygen Administration
  1. Use the following airway adjuncts:
    - a. oropharyngeal airway
    - b. nasopharyngeal airway
    - c. suction devices
  2. Administer oxygen using delivery devices per Ref. No. [1302](#), MCG Airway Management and Monitoring, including, but not limited to:
    - a. nasal cannula
    - b. mask – nonrebreather, partial rebreather, simple
    - c. blow-by
    - d. humidifier
  3. Use manual and mechanical ventilating devices:
    - a. bag-mask ventilation (BMV) device
    - b. continuous positive airway pressure (CPAP)  
**(Requires EMS Agency approval – Approved EMS Providers)**
  4. Ventilate advanced airway adjuncts via bag-device:
    - a. endotracheal tube
    - b. perilaryngeal airway device (King LTS-D)
    - c. tracheostomy tube or stoma
  5. Suction airway including:
    - a. oropharynx
    - b. nasopharynx
    - c. tracheostomy tube or stoma
- D. Trauma Care
  1. Provide initial prehospital emergency trauma care including, but not limited to:
    - a. tourniquets for bleeding control
    - b. hemostatic dressings **(State EMSA approved dressings only)**
    - c. extremity splints
    - d. traction splints
  2. Use spinal motion restriction devices

E. Assist Patients with Prescribed Emergency Medications

Assist patients with the administration of their physician-prescribed emergency devices and medications, provided the indications are met and there are no contraindications, to include but not limited to:

1. Sublingual nitroglycerin
2. Aspirin
3. Bronchodilator inhaler or nebulizer
4. Epinephrine device (autoinjector)
5. Patient-operated medication pump

X. Patient Transport and Monitoring by an Approved EMS Provider

A. Transport and monitor patients in the prehospital setting and/or during an interfacility transfer by an approved EMS Provider

B. Transport patients with one or more of the following medical devices:

1. nasogastric (NG) tube
2. orogastric (OG) tube
3. gastrostomy tube (GT)
4. saline/heparin lock
5. foley catheter
6. tracheostomy tube
7. ventricular assist device (VAD)
8. surgical drain(s)
9. medication patches
10. indwelling vascular lines
  - a. pre-existing vascular access device (PVAD)
  - b. peripherally inserted central catheter (PICC)
  - c. patient-operated medication pump

C. Monitor, maintain at a preset rate, or turn off if necessary, the following intravenous (IV) fluids:

1. glucose solutions
2. isotonic balanced salt solutions (normal saline)
3. ringer's lactate

XI. Local Additional Scope of Practice Requiring Approval by the Los Angeles County EMS Agency:

Approved EMS Providers may apply for approval authorization to train EMT personnel to administer and add to vehicle inventory the following therapies:

- A. Naloxone (including distribution of Leave Behind Naloxone per MCG [1337](#))
- B. Epinephrine autoinjector
- C. Aspirin
- D. Finger stick blood glucose testing

CROSS REFERENCES:

Prehospital Care Manual:

Ref. No. 412, **EMT AED Service Provider Program Requirements**  
Ref. No. 502, **Patient Destination**  
Ref. No. 510, **Pediatric Patient Destination**  
Ref. No. 506, **Trauma Triage**  
Ref. No. 517, **Private Provider Agency Transport/Response Guidelines**  
Ref. No. 517.1, **Guidelines for Determining Interfacility Level of Transport**  
Ref. No. 802.1, **Los Angeles County EMT Scope of Practice – Field Reference**  
Ref. No. 838, **Application of Patient Restraints**  
Ref. No. 1302, **Medical Control Guideline: Airway Management and Monitoring**  
Ref. No. 1337, **Naloxone Distribution by EMS Providers (Leave Behind Naloxone)**

Los Angeles County Code, Title 7, Business Licenses, Chapter 7.16, Ambulances

SUBJECT: **CALIFORNIA POISON CONTROL SYSTEM**

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PURPOSE: To ensure that provider agencies and base hospitals have access to the California Poison Control System (CPCS) and have a mechanism in place for quality improvement and problem resolution.

AUTHORITY: California Code of Regulations, Title 22, Chapter 9, Articles 1 and 2.

DEFINITION:

**Poison Control Center:** A facility designated by the State Emergency Medical Services Authority (EMSA) that provides information and advice to the public and health professionals regarding the management of individuals who have or may have ingested, inhaled or otherwise been exposed to poisonous or possibly toxic substances.

APPROVED POISON CONTROL CENTERS:

The following sites have been designated by the EMSA as answering points for the CPCS:

- UC San Diego Medical Center
- UC Davis Medical Center
- San Francisco General Hospital
- Children's Hospital Central California

CALL THE CALIFORNIA POISON CONTROL SYSTEM TOLL FREE AT: **1-800-222-1222** or access the website at [www.calpoison.org](http://www.calpoison.org)

This number may be accessed by health professionals, 9-1-1 providers, and the public 24 hours/day, 7 days/week and 365 days/year.

POLICY:

- I. Provider Agency Dispatch Centers may:
  - A. Contact the CPCS to access information and advice regarding the management of individuals who have, or may have, ingested or otherwise been exposed to poisonous or possibly toxic substances.
  - B. Elect to establish three-way communication between the CPCS, the Dispatch Center and the 9-1-1 caller.
  - C. Utilize information provided by CPCS to determine whether a 9-1-1 response is indicated and, if so what level, and/or to provide pre-arrival instructions to the caller.

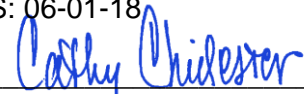
EFFECTIVE: 08-01-97

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REVISED: 04-01-21

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APPROVED:

  
Director, EMS Agency

  
Medical Director, EMS Agency

- D. Relay information to field personnel.
- II. Paramedics shall contact the assigned base hospital for information and advice regarding the management of individuals who have, or may have, ingested or otherwise been exposed to poisonous or possibly toxic substances.
- III. Base Hospitals may contact the CPCS to access information and advice regarding the management of individuals who have, or may have, ingested or otherwise been exposed to poisonous or possibly toxic substances when the base has been contacted by prehospital personnel.
- IV. Quality Improvement/Problem Resolution – Questions or concerns related to the CPCS should be documented on a Los Angeles County EMS Situation Report and referred to the Los Angeles County EMS Agency for follow-up.



SUBJECT: **DETERMINATION/PRONOUNCEMENT  
OF DEATH IN THE FIELD**

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**PURPOSE:** This policy is intended to provide EMS personnel with parameters to determine whether or not to withhold resuscitative efforts in accordance with the patient's wishes, and to provide guidelines for base hospital physicians to discontinue resuscitative efforts and pronounce death.

**AUTHORITY:** California Health and Safety Code, Division 2.5  
California Probate Code, Division 4.7  
California Family Code, Section 297-297.5  
California Health and Safety Code, Division 1, Part 1.8, Section 443 et seq.

**DEFINITIONS:**

**Advance Health Care Directive (AHCD):** A written document that allows patients who are unable to speak for themselves to provide health care instructions and/or appoint a Power-of-Attorney for Health Care. There is no one standard format for an AHCD. Examples of AHCDs include:

- Durable power of attorney for Healthcare (DPAHC)
- Healthcare proxies
- Living wills (valid in California if dated prior to 7-1-2000; advisory but not legally binding after that date)

**Agent:** An individual, eighteen years of age or older, designated in a durable power of attorney for health care to make health care decisions for the patient, also known as "attorney-in-fact".

**Aid-in-Dying Drug:** A drug determined and prescribed by a physician for a qualified individual, which the qualified individual may choose to self-administer to bring about his or her death due to terminal illness. The prescribed drug may take effect within minutes to several days after self-administration.

**Conservator:** Court-appointed authority to make health care decisions for a patient.

**Determination of Death:** To conclude that a patient has died by conducting an assessment to confirm the absence of respiratory, cardiac, and neurologic function.

**End of Life Option Act:** This California state law authorizes an adult, eighteen years or older, who meets certain qualifications, and who has been determined by his or her attending physician to be suffering from a terminal disease to make a request for an "aid-in-dying drug" prescribed for the purpose of ending his or her life in a humane and dignified manner.

**Immediate Family:** The spouse, domestic partner, parent, adult children, or adult sibling(s) or family member intimately involved in the care of the patient.

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Medical Director, EMS Agency

**Organized ECG Activity:** A sinus, atrial or junctional (supraventricular) rhythm.

**Pronouncement of Death:** A formal declaration by a base hospital physician that life has ceased.

**Standardized Patient-Designated Directives:** Forms or medallions that recognize and accommodate a patient's wish to limit prehospital treatment at home, in long term care facilities, or during transport between facilities. Examples include:

- Statewide Emergency Medical Services Authority (EMSA) / California Medical Association (CMA) Prehospital DNR Form (ref. No. 815.1)
- Physician Orders for Life-Sustaining Treatment (POLST, Ref. No. 815.2)
- State EMS Authority-approved DNR Medallion

**PRINCIPLES:**

1. Resuscitative efforts are of no benefit to patients whose physical condition precludes any possibility of successful resuscitation.
2. EMTs and paramedics may **determine** death based on specific criteria set forth in this policy.
3. Base hospital physicians may **pronounce** death based on information provided by the paramedics in the field and guidelines set forth in this policy.
4. If there is any objection or disagreement by family members or EMS personnel regarding terminating or withholding resuscitation, basic life support (BLS) resuscitation, including defibrillation, may continue or begin immediately and paramedics should contact the base hospital for further directions.
5. Aggressive resuscitation in the field to obtain the return of spontaneous circulation (ROSC) is encouraged. Transporting patients without ROSC is discouraged.
6. EMS personnel should honor valid do-not-resuscitate (DNR) orders and other patient designated end-of-life directives in the field and act in accordance with the patient's wishes when death appears imminent.

**POLICY:**

- I. EMS personnel may determine death in the following circumstances:
  - A. In addition to the absence of respiration, cardiac activity, and neurologic reflexes, one or more of the following physical or circumstantial conditions exist:
    1. Decapitation
    2. Massive crush injury
    3. Penetrating or blunt injury with evisceration of the heart, lung or brain

4. Decomposition
  5. Incineration
  6. Pulseless, non-breathing victims with extrication time greater than fifteen minutes, where no resuscitative measures can be performed prior to extrication.
  7. Penetrating trauma patients who, based on the paramedic's thorough assessment, are found apneic, pulseless, asystolic, and without pupillary reflexes upon the arrival of EMS personnel at the scene.
  8. Blunt trauma patients who, based on a paramedic's thorough patient assessment, are found apneic, pulseless, and without organized ECG activity (sinus, atrial or junctional rhythm) due to traumatic mechanism upon the arrival of EMS personnel at the scene.
    - a. For patients with shockable ventricular rhythm, defibrillate as per TP 1243/1243-P in attempt to restore organized ECG activity prior to determination of death.
  9. Pulseless, non-breathing victims of a multiple victim incident where insufficient medical resources preclude initiating resuscitative measures.
  10. Drowning victims, when it is reasonably determined that submersion has been greater than one hour.
  11. Rigor mortis (requires assessment as described in Section I, B.)
  12. Post-mortem lividity (requires assessment as described in Section I, B.)
- B. If the initial assessment reveals rigor mortis and/or post-mortem lividity only, EMTs and/or paramedics shall perform the following assessments (may be performed concurrently) to confirm the absence of respiratory, cardiac, and neurologic function for determination of death in the field:
1. Assessment of respiratory status:
    - a. Assure that the patient has an open airway.
    - b. Look, listen and feel for respirations. Auscultate the lungs for a minimum of 30 seconds to confirm apnea.
  2. Assessment of cardiac status:
    - a. Auscultate the apical pulse for a minimum of 60 seconds to confirm the absence of heart sounds.
    - b. Adults and children: Palpate the carotid pulse for a minimum of 60 seconds to confirm the absence of a pulse.

- c. Infants: Palpate the brachial pulse for a minimum of 60 seconds to confirm the absence of a pulse.
    - 3. Assessment of neurological reflexes:
      - a. Check for pupillary response with a penlight or flashlight to determine if pupils are fixed and dilated.
      - b. Check and confirm unresponsive to pain stimuli.
  - C. Patients in atraumatic cardiopulmonary arrest who do not meet the conditions described in Section I. A. require immediate BLS measures to be initiated. If one or more of the following conditions is met, resuscitation may be discontinued and the patient is determined to be dead:
    - 1. A valid standardized patient-designated directive indicating DNR.
    - 2. A valid AHCD with written DNR instructions or the agent identified in the AHCD requesting no resuscitation.
    - 3. Immediate family member present at scene:
      - a. With a patient-designated directive on scene requesting no resuscitation
      - b. Without said documents at scene, with full agreement of immediate family, requesting no resuscitation, and EMS provider concur
    - 4. Parent or legal guardian is on scene and requesting to withhold or terminate resuscitation for patients less than 18 years of age.
- II. Patients in atraumatic cardiopulmonary arrest who do not meet the conditions described in Section I require immediate cardiopulmonary resuscitation in accordance with [Ref. No. 1210](#), Treatment Protocol: Cardiac Arrest. Base contact for medical direction shall be established when indicated by Ref. No. 1210.
- A. EMS Personnel may determine death if a patient is in **asystole** after 20 minutes of quality cardiopulmonary resuscitation on scene and meets ALL of the following criteria:
    - 1. Patient 18 years or greater
    - 2. Arrest not witnessed by EMS personnel
    - 3. No shockable rhythm identified at any time during the resuscitation
    - 4. No ROSC at any time during the resuscitation
    - 5. No hypothermia

- B. Base Physician consultation for pronouncement is not required if Section A is met.
  - C. Base Physician contact shall be established to guide resuscitation and to make decisions regarding timing of transport, if transport is indicated, for all patients in cardiopulmonary arrest who do not meet the conditions described in Section I or IIA of this policy.
  - D. In the event that immediate family members on scene request termination of resuscitation after resuscitation is in progress, and the patient does not meet criteria in section II.A, base physician consultation shall be made for termination and pronouncement. This does not apply to brief initiation of CPR while establishing patient/family wishes as per I.C.3.
- III. Physician guidelines for transport versus termination
- A. Resuscitation should be continued on-scene until one of the following:
    - 1. ROSC is confirmed with a palpable pulse and corresponding rise in EtCO<sub>2</sub>. Paramedics should stabilize the patient on scene after ROSC (for approximately 5 minutes) per TP 1210 and initiate transport once ROSC is maintained.
    - 2. Base physician determines further resuscitative efforts are futile
  - B. Patients who have NOT maintained ROSC after on-scene resuscitation and stabilization should NOT be transported unless the Base physician determines transport is indicated.
    - 1. Early transport for patients with ongoing resuscitation is NOT advised.
    - 2. The decision to transport a patient with refractory OHCA should be based on the availability of therapies at the receiving center that are not available on scene.
- IV. Crime Scene Responsibility, Including Presumed Accidental Deaths and Suspected Suicides
- A. Responsibility for medical management rests with the most medically qualified person on scene.
  - B. Authority for crime scene management shall be vested in law enforcement. To access the patient it may be necessary to ask law enforcement officers for assistance to create a "safe path" that minimizes scene contamination.
  - C. If law enforcement is not on scene, EMS personnel should attempt to create a "safe path" and secure the scene until law enforcement arrives.
- V. Procedures Following Pronouncement of Death

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- B. The deceased should not be moved without the coroner's authorization. Any invasive equipment (i.e., intravenous line, endotracheal tube) used on the patient should be left in place.

**NOTE: If it is necessary to move the deceased because the scene is unsafe, the body is creating a hazard, or the body is at risk of loss through fire or flood, the EMS personnel may relocate the deceased to a safer location or transport to the most accessible receiving facility.**

- B. If law enforcement or the coroner confirms that the deceased will not be a coroner's case and the personal physician is going to sign the death certificate, any invasive equipment used during the resuscitation may be removed.
- C. EMS personnel should remain on scene until law enforcement arrives. During this time, when appropriate, the provider should provide grief support to family members.

VI. Required Documentation for Patients Determined Dead/Pronounced in the Field

- A. The time and criteria utilized to determine death; the condition, location and position of the body, and any care provided.
- B. The location and the rationale if the deceased was moved. If the coroner authorized movement of the deceased, document the coroner's case number (if available) and the coroner's representative who authorized the movement.
- C. Time of pronouncement and name of the pronouncing physician if base hospital contact was initiated
- D. The name of the agent identified in the AHCD or patient-designated directive or the name of the immediate family member who made the decision to withhold or withdraw resuscitative measures. Obtain their signature on the EMS Report Form.
- E. If the deceased is **not** a coroner's case and their personal physician is going to sign the death certificate:
1. Document the name of the coroner's representative who authorized release of the patient, and
  2. The name of the patient's personal physician signing the death certificate, and
  3. Any invasive equipment removed

VII. End of Life Option Act

- A. Resuscitation shall be withheld on patients in cardiopulmonary arrest who have self-administered an aid-in-dying drug (see Ref. No. 815.4, End of Life Option Field Quick Reference Guide).

- B. Document the presence of a Final Attestation and attach a copy if available.

CROSS REFERENCE:

Prehospital Care Manual:

- Ref. No 516, **Cardiac Arrest (Non-Traumatic) Patient Destination**  
Ref. No. 518, **Decompression Emergencies/Patient Destination**  
Ref. No. 519, **Management of Multiple Casualty Incidents**  
Ref. No. 606, **Documentation of Prehospital Care**  
Ref. No. 815, **Honoring Prehospital Do Not Resuscitate Orders**  
Ref. No. 815.1, **EMSA/CMA Prehospital Do Not Resuscitate (DNR) Form**  
Ref. No. 815.2, **Physician Orders for Life-Sustaining Treatment (POLST) Form**  
Ref. No. 815.3, **Sample - Final Attestation For An Aid-In-Dying Drug to End My Life in a  
Humane and Dignified Manner**  
Ref. No. 815.4, **End of Life Option Field Quick Reference Guide**  
Ref. No. 819, **Organ Donor Identification**

SUBJECT: **REGIONAL MOBILE RESPONSE TEAMS**

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**PURPOSE:** To establish a formal mechanism for providing rapid advanced emergency medical care at the scene in which a higher level of on-scene emergency medical expertise, physician field response, is requested by the on-scene prehospital care provider.

**AUTHORITY:** Health and Safety Code, Division 2.5, Section 1798. (a)

**DEFINITIONS:**

**9-1-1 Jurisdictional Provider:** The local governmental agency that has jurisdiction over a defined geographic area for the provision of prehospital emergency medical care. In general, these are cities and fire districts that have been defined in accordance with the Health and Safety Code, Division 2.5, Section 1797.201.

**Exclusive Operating Area (EOA) Provider:** Prehospital emergency medical transportation agencies/companies that have the exclusive rights to provide emergency 9-1-1 medical transportation in predefined geographic areas. These include cities and ambulance companies that have exclusive emergency transportation rights as defined by the Health and Safety Code, Division 2.5, Section 1797.201 and Section 1797.224, and referenced in the Los Angeles County EMS Plan.

**Fire Operational Area Coordinator (FOAC):** Los Angeles County Fire Department is the FOAC for the County, which is contacted through its Dispatch Center.

**Hospital Emergency Response Team (HERT):** Organized group of health care providers from a designated Level I Trauma Center, with Emergency Medical Services (EMS) Agency approval as a HERT provider, who are available 24 hours/day to respond and provide a higher level of on-scene surgical and medical expertise.

**Incident Commander:** The highest-ranking official of the jurisdictional agency at the scene of the incident and responsible for the overall management of the incident.

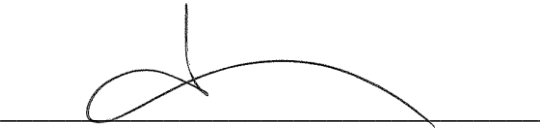
**Medical Alert Center (MAC):** Serves as the control point for the VMED28 and ReddiNet® systems and the point of contact when a HERT is requested. The MAC shall contact an approved HERT provider based on the incident location.

**Mobile Stroke Unit (MSU):** Organized group of health care providers with highly specialized equipment associated with a designated Comprehensive Stroke Center, who are available to respond and provide a higher level on-scene stroke care. A MSU is approved by the EMS Agency to be deployed in the prehospital setting to provide rapid assessment of a suspected stroke patient utilizing a mobile computed tomography (CT) scanner. If indicated, the MSU may also provide rapid treatment with intravenous thrombolytic therapy.

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**Physician Field Response:** Is a situation in which a higher level of on-scene emergency medical or surgical expertise is warranted due to the nature of the emergency and requested by the on-scene prehospital care provider.

**Qualified Specialist:** A physician licensed in the State of California who is Board Certified or Board Eligible in the corresponding specialty by American Board of Medical Specialties (ABMS) or American Osteopathic Association (AOA).

**Standard Precautions:** Is a combination of the major features of Universal Precautions (UP) and Body Substance Isolation (BSI). Standard Precautions include a group of infection prevention practices that apply to all patients, regardless of suspected or confirmed infection status, in any setting in which healthcare is delivered. These include: hand hygiene, use of gloves, gown, mask, eye protection, or face shield, depending on the anticipated exposure; and safe injection practices.

**VMED28:** The VMED28 frequency is the primary method of communications with paramedic providers to coordinate patient destination activities with the Medical Alert Center (MAC). The VMED28 also serves as a back-up communication system for intra-hospital communication and between hospitals and the MAC.

**POLICY:**

- I. Hospital Emergency Response Team (HERT):
  - A. Composition of a HERT
    1. The composition of the HERT, and the identification of a Team Leader, shall be a qualified specialist with the training in accordance with the approved HERT provider's internal policy on file with the EMS Agency.
    2. The Team Leader is responsible for organizing, supervising, and accompanying members of the team to a scene where a physician field response has been requested.
    3. The Team Leader shall be familiar with base hospital operations, scene hazard training, and the EMS Agency's policies, procedures, and protocols.
    4. The Team Leader is responsible for retrieving the life-saving equipment and PPE and determining if augmentation is required based upon the magnitude and nature of the incident.
  - PPE shall include the following:
    - a. Safety Goggles
    - b. Leather Gloves
    - c. Helmet with HERT labeled on both sides (e.g., Bullard ® Advent ®);
    - d. Jumpsuit (e.g., Nomex®); and
    - e. National Fire Protection Association (NFPA) approved safety boot with minimum six-inch rise, steel toe, and steel shank.

The standard life-saving equipment and PPE referenced above shall be predetermined, preassembled, readily available, clearly labeled, and stored in a predetermined location. Based upon the magnitude and nature of the incident, the standard life-saving equipment and PPE may require augmentation.

5. The Team Leader will determine the ultimate size and composition of the team based upon the magnitude and nature of the incident.
6. The Team Leader will report to, and be under the authority of, the Incident Commander or their designee. Other members of the team will be directed by the Team Leader.

B. Purpose of the HERT:

1. A HERT is utilized in a situation where additional medical or surgical expertise is needed on scene.
2. This includes, but is not limited to, the following situations:
  - a. A life-saving procedure, such as an amputation, is required due to the inability to extricate a patient by any other means.
  - b. Prolonged entrapment of a patient requiring extended scene care.
  - c. Need for assistance with analgesia, sedation, and difficult airway management.
  - d. A mass casualty incident with need for field triage of a large number of patients.

C. Activation of the HERT:

1. The Incident Commander or designee shall contact the MAC via the VMED28. The determination of the appropriate mode of transportation of the team (ground versus air) will be mutually agreed upon. The anticipated duration of the incident should be considered in determining the need for a HERT; it will typically be a minimum of 30 minutes before a team arrives on scene.
2. MAC shall contact an approved HERT provider regarding the request. The Team Leader will organize the team and equipment in accordance with the HERT provider's internal policy, and the magnitude and nature of the incident.
3. HERT members should be assembled and ready to respond within 20 minutes of a request with standard life-saving equipment and in appropriate level of personal protective equipment (PPE) in accordance with the HERT provider's internal policy on file with the EMS Agency.

4. The Team Leader shall inform the MAC once the team has been assembled and indicate the number of team members.
  5. MAC will notify the Incident Commander of the ETA of the HERT if they are arriving by ground transportation. When air transport is utilized, MAC will indicate the time that the HERT is assembled with the standard life-saving equipment and prepared to leave the helipad.
- D. Transportation of the HERT:
1. MAC will arrange transportation of the HERT through coordination with the Central Dispatch Office or the FOAC.
  2. Upon the conclusion of the incident, HERT will contact the MAC and transportation of the team back to the originating facility will be arranged.
- E. Responsibilities of a HERT:
1. Upon arrival of the HERT, the Team Leader will report directly to the on-scene Incident Commander or designee (i.e., Medical Group Supervisor). HERT members will, at a minimum, have visible identification that clearly identifies the individual as a health care provider (physician, nurse, etc.) and a member of the HERT.
  2. Medical Control for the incident shall be in accordance with Ref. No. 816, Physician at the Scene.
- F. Approval Process of a HERT:
1. Level I Trauma Centers interested in providing a HERT must develop internal policies to comply with all requirements and submit evidence of the ability to meet all requirements of this policy, as well as an initial and continuing education plan for HERT members, to the EMS Agency for review and approval as a HERT provider.

## II. Mobile Stroke Unit (MSU) Program

- A. General Requirements:
1. Be approved by the EMS Agency
  2. Have, at minimum, one MSU that has been licensed by the California Department of Motor Vehicles as an emergency response vehicle.
  3. Designate a MSU Medical Director who shall be responsible for the functions of the MSU. The MSU Medical Director shall be a qualified specialist, licensed in the State of California and Board Certified in Neurology, Neurosurgery or Neuroradiology

4. Staff the MSU with a critical care transport nurse, paramedic and a CT technician. A stroke neurologist may also be included as part of the response team on the vehicle or by telemedicine.
  5. Implement a quality improvement program for program monitoring and evaluation.
  6. Designate a MSU Program Manager who shall be responsible for ensuring timely and accurate data collection and who works with the MSU Medical Director to develop a data collection process and a quality improvement program.
- B. The MSU Program shall develop an activation and dispatch procedure in collaboration with the 9-1-1 jurisdictional provider.
- C. A written Agreement between an Exclusive Operating Area (EOA) Provider and the MSU Program shall be in place if the MSU will be used to transport stroke patients. The written Agreement shall address, at minimum, the following:
1. Dispatch
  2. Interaction between staff of the MSU and the 9-1-1 Jurisdictional Provider/EOA Provider
  3. Transportation arrangements
  4. Billing
  5. Data Collection
  6. Liability
- D. The MSU Program shall develop policies and procedures that address patient care and include the following: patient assessment and identification of patients requiring MSU services; indications for CT and procedures for transmission and reporting, indications and contraindications for thrombolytic therapy, and reporting of adverse events.
- E. Approval Process of a MSU
1. MSU Programs shall submit a letter of intent to the EMS Agency outlining the following:
    - a. Qualifications of the composition of MSU program
    - b. Proposed response area
    - c. Deployment and dispatch plan for integration with the 9-1-1 jurisdictional provider
    - d. Data collection and quality improvement process

2. If the MSU will be used to transport stroke patients, submit a copy of the written Agreement with the 9-1-1 Jurisdictional Provider/EOA Provider.
3. The EMS Agency will review and verify the submitted information. If the submitted information is satisfactory, the EMS Agency will approve the MSU program.

## CROSS REFERENCES:

Prehospital Care Manual:

Ref. No. 201, **Medical Management of Prehospital Care**  
Ref. No. 502, **Patient Destination**  
Ref. No. 503, **Guidelines for Hospitals Requesting Diversion of ALS Units**  
Ref. No. 504, **Trauma Patient Destination**  
Ref. No. 506, **Trauma Triage**  
Ref. No. 510, **Pediatric Patient Destination**  
Ref. No. 519, **Management of Multiple Casualty Incidents**  
Ref. No. 521, **Stroke Patient Destination**  
Ref. No. 816, **Physician at the Scene**

SUBJECT: **SUSPECTED CHILD ABUSE/NEGLECT  
REPORTING GUIDELINES**

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**PURPOSE:** To provide guidelines and procedures for prehospital care personnel to report suspected child abuse.

**AUTHORITY:** California Penal Code, Chapter 916, Sections 11164-11174.3  
County of Los Angeles Department of Children and Family  
Services

**DEFINITIONS:**

**Agencies authorized to accept mandated reports:** Any police department or sheriff's department, and the Department of Children and Family Services (DCFS) Child Protection Hotline (CPH). School district police and security departments are not authorized to accept reports.

**Child:** Any person less than eighteen years of age.

**Mandated reporter:** Any healthcare practitioner, childcare custodian, or an employee of a child protective agency. This includes EMTs and paramedics.

**Neglect:** The negligent treatment or maltreatment of a child by a person responsible for the child's welfare under circumstances indicating harm or threatened harm to the child's health or welfare. The term includes both acts and omissions on the part of the responsible person.

**Physical abuse:** Physical injury or death inflicted by other than accidental means upon a child by another person.

**Sexual abuse:** Sexual assault or the exploitation of a minor. Sexual assault includes, but is not limited to, any intrusion by one person into the genitals; anal opening of a child; oral copulation intentional touching for the purposes of sexual arousal or gratification, or masturbation in the presence of a child. Sexual exploitation includes conduct involving matters depicting minors engaged in obscene acts; and/or prostitution.

**PRINCIPLES:**

1. The purpose of reporting suspected child abuse/neglect is to protect the child, prevent further abuse of the child and other children in the home, and to facilitate treatment for the entire family. The presence of abuse, rather than the degree of that abuse, is the determinant for intervention by DCFS and law enforcement.
2. California Penal Code, Sections 11166 and 11168, require mandated reporters to promptly report all suspected non-accidental injuries, sexual abuse, or neglect of children that they suspect, have knowledge of, or observe in their professional capacity. A verbal report shall be made to DCFS Child Protection Hotline immediately, or as soon as practically possible, and the Suspected Child Abuse Report shall be completed within 36 hours.

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In Los Angeles County, it is recommended that a report be made to local law enforcement as well.

3. It is not necessary for the mandated reporter to determine child abuse but only to suspect that it may have occurred. Law enforcement, DCFS and the courts determine whether child abuse/neglect has, in fact, occurred.
4. Current law mandates (CPC 11166) all healthcare professionals to report suspected child abuse/neglect that they know of or observe in their professional capacity. Mandated reporters are required to sign a statement acknowledging their understanding of the law (See Ref. No. 822.3, Sample Employee Acknowledgement as a Mandated Reporter). Any person who fails to report as required may be punished by a fine or imprisonment.
5. When a mandated reporter suspects or has observed child abuse/neglect, that individual is required to report by telephone to local law enforcement and/or to DCFS Child Protection Hotline.
6. When two or more mandated reporters are present at scene and jointly know or suspect an instance of child abuse/neglect, a member of the reporting team may be designated to report on behalf of the team. Any member who knows that the designated reporter failed to uphold their agreement shall thereafter make the report. If paramedics are not selected as the designated reporters, they shall document the name and agency of the designated reporting team member on the EMS Report Form.
7. Persons legally required to report suspected child abuse are immune from criminal or civil liability for reporting as required.

POLICY:

I. Reporting Procedure

- A. Notify local law enforcement immediately if a child is suspected to be in imminent danger. Prehospital care providers should be aware of their local law enforcement reporting procedures and telephone numbers for notification.
- B. Call the 24-hour Child Protection Hotline at **(800) 540-4000** as soon as possible to make the verbal report. (Refer to 822.1 for reporting options and instructions).

DCFS has implemented the Child Protection Hotline Priority line for Medical Providers to ensure immediate connection to the Hotline. Upon dialing the hotline number listed above, **press \*** within the first 10 seconds of the call and a prompt will request a code be entered. **Enter the code 3237** (DCFS). Once the code is entered, the caller will be given options to select.

**Press 1** for safely surrendered baby

**Press 4** for all other inquiries (Child Report –Medical queue)

The telephone report shall include the following:

- Name of the person making the report
- Name of the child
- Present location of the child
- Nature and extent of the injury
- Information that led reporting party to suspect child abuse

The reporting party will be provided with a Referral Number (Case Number) that shall be transcribed onto Form SS8572 in the upper right hand corner under “Case Number”

Within 36 hours:

1. Complete and submit the Suspected Child Abuse Report (SS8572), that is accessible on the DCFS web site at <http://dcfs.lacounty.gov>

**OR**

2. Complete a hard copy according to the instructions on the back of the form (Ref. No. 822.2 and 822.2a, SS8572). The completed form must be mailed to local law enforcement and either mailed to DCFS (1933 S. Broadway Avenue, 5<sup>th</sup> floor, Los Angeles, CA 90007) or faxed (213) 745-1728 or (213) 745-1730

C. Document the following on the EMS Report Form

1. The name of the DCFS social worker and/or name, department and badge number of the law enforcement officer contacted.
2. Time of notification
3. Disposition of the child

CROSS REFERENCES:

Prehospital Care Manual:

Reference No. 822.1, **Guide to Suspected Child Abuse Reporting**

Reference No. 822.2, **Suspected Child Abuse Report Form SS 8572**

Reference No. 822.2a, **Definitions and General Instructions for Completion of Form SS 8572**

Reference No. 822.3, **Sample Employee Acknowledgement as a Mandated Reporter**



SUBJECT: **PATIENT REFUSAL OF TREATMENT/TRANSPORT  
AND TREAT AND RELEASE AT SCENE**

REFERENCE NO. 834

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**PURPOSE:** To provide guidelines for EMS personnel to determine which patients who do not wish to be transported to the hospital have decision-making capacity to refuse EMS treatment and/or transport, and to identify those who may be safely released at scene.

**AUTHORITY:** California Health and Safety Code, Division 2.5, Sections 1797.220, 1798, (a). California Welfare and Institution Code, Sections 305, 625, 5150, and 5170. Title 22, California Code of Regulations, Section 100169.

**DEFINITIONS:**

**Adult:** A person at least eighteen years of age.

**Against Medical Advice (AMA):** A patient or a legal representative of a patient who has decision-making capacity and who refuses treatment and/or transport for **an emergency medical condition** as advised by EMS providers, physician on scene, and/or Base personnel.

**Assess, Treat, and Release:** A patient who does not desire transport to the emergency department for evaluation and after an assessment and/or treatment by EMS personnel, **does not** have an ongoing emergent medical condition, a high-risk presentation, or social risk factors and is released at scene to follow-up with the patient's regular healthcare provider or a doctor's office or clinic.

**Authorized Advanced Health Care Provider:** An EMS physician authorized to direct EMS care on the scene or via telemedicine as per Ref. 816 – Physician at the Scene, or an advanced practiced provider who is identified by the EMS Provider Agency Medical Director to provide medical direction via telemedicine as approved by the EMS Agency Medical Director.

**Decision-Making Capacity:** The ability to understand the nature and consequences of proposed health care. This includes understanding the significant risks and benefits and having the ability to make and communicate a decision regarding the proposed health care in the patient's primary language, if feasible. A person has decision-making capacity if they are able to:

- Communicate the need for treatment, the implications of receiving and of not receiving treatment, and alternative forms of treatment that are available, and
- Relate the above information to their personal values, and then make and convey a decision.

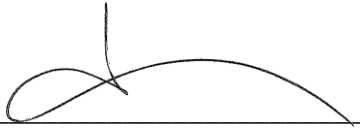
The lack of decision-making capacity may be:

- Temporarily lost (e.g., due to unconsciousness, influence of mind-altering

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- substances, mental illness, or cognitive impairment)
- Permanently lost (e.g., due to irreversible coma, persistent vegetative state, untreatable brain injury, or dementia)
- Never existed (i.e., due to profound neurodevelopmental disorder, those who are deemed by the Court as incompetent or a person under conservatorship)

**Emancipated Minor:** A person under the age of 18 years is an emancipated minor if any of the following conditions are met:

- Married or previously married
- Currently or previously in a valid domestic partnership
- On active military duty
- The person has received a declaration of emancipation pursuant to Section 7122 of the California Family Code, which includes all of the following: at least fourteen (14) years of age, living separate and apart from their parents and managing their own financial affairs (may be verified by DMV Identification Card)

**Emergency Medical Condition:** A condition or situation in which a medical illness is suspected in a patient and there is an immediate need for medical attention. Patients with any abnormal vital signs: heart rate and rhythm, respiratory rate, blood pressure (except for isolated asymptomatic hypertension), oxygen saturation, and temperature (Ref. 1380 – Medical Control Guideline Vital Signs); and/or those who meet any criteria for Base Contact (Ref. 1200.2 – Base Contact Requirements) are considered to have an emergency medical condition.

**High Risk Presentation:** Features by history or presentation that are likely to be high risk for complications, progression of disease, underlying serious illness or injury, or require Base Contact. High risk chief complaints include chest pain, abdominal pain, pregnancy, gastrointestinal bleeding, syncope, neurologic symptoms (e.g., dizziness/vertigo, weakness, visual changes), and altered mental status. High risk features include:

- Patients less than 12 months of age
- Patients older than 70 years of age
- Patients with complicating comorbidities (i.e., active underlying cardiac, respiratory, kidney, liver, oncologic (cancer) or neurologic disease, or who are immunocompromised (e.g., history of HIV, chemotherapy, transplantation))

**Implied Consent:** This is a type of consent involving the presumption that an unconscious or a person lacking decision-making capacity would consent to lifesaving care. This shall include minors with an emergency medical condition when a parent or legal representative is not available.

**Lift Assist:** EMS is dispatched to a scene to assist with transfer of a patient to a bed or wheelchair.

**Medical Home:** A team-based health care delivery model, which is led by a health care provider (i.e., primary care physician) to provide continuous, coordinated, and comprehensive medical care.

**Minor:** A person less than eighteen years of age.

**Minor Not Requiring Parental Consent is a person who:**

- Is 12 years or older and in need of care for a reportable medical condition or substance abuse
- Is pregnant and requires care related to the pregnancy
- Is in immediate danger of suspected physical or sexual abuse
- Is an emancipated minor

**No Contact / No Patient:** EMS is dispatched to a scene and is either cancelled prior to arriving at scene or no patient is found.

**Patient:** A person who seeks or appears to require medical assessment and/or medical treatment (Ref. 606, Documentation of Prehospital Care)

**Person Contact / No Patient:** EMS is dispatched to a scene and a person is identified as a potential patient, is alert and appropriate for situation and declines assessment by EMS.

**Psychiatric Hold:** A patient who is held against their will for evaluation under the authority of Welfare and Institutions Code (e.g., Section 5150, 5585 [minors]) because the patient is a danger to themselves, a danger to others, and/or gravely disabled (i.e., unable to care for self). This is a written order by law enforcement officer, County mental health worker, or a health worker certified by the County to place an individual on a psychiatric hold.

**Public Assist:** EMS is dispatched to a scene for assistance for nonmedical issues involving a person.

**Social Risk Factors:** Persons experiencing homelessness, patients in congregate living, and those who are a resident of skilled nursing facilities.

**Treatment in Place:** A patient who, after an assessment and treatment by EMS personnel and medical clearance by an authorized advanced healthcare provider (e.g., physician, nurse practitioner, physician assistant) on scene (Ref. 816 Physician at the Scene) or via Telemedicine, does not require ambulance transport to an emergency department. Appropriate follow-up should be arranged by the authorized advanced healthcare provider on scene or via Telemedicine.

**PRINCIPLES:**

1. An adult or emancipated minor who has decision-making capacity has the right to determine the course of their medical care including the refusal of care. These patients must be advised of the risks and consequences resulting from refusal of medical care. A patient less than eighteen (18) years of age, with the exception of minors not requiring parental consent, must have a parent or legal representative to refuse evaluation, treatment, and/or transport for an emergency medical condition.
2. A patient determined by EMS personnel or the base hospital to lack decision-making capacity may not refuse care AMA or be released at scene. Mental illness, drugs, alcohol, or physical/mental impairment may impair a patient's decision-making capacity but are not sufficient to eliminate decision-making capacity

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3. In situations where patients who have attempted suicide or expressed suicidal intent, or where other factors lead EMS personnel to suspect suicidal intent, such patients should be regarded as lacking decision-making capacity. These patients may decline treatment but cannot decline transport.
4. A patient on a psychiatric hold may not be released at scene and cannot sign-out AMA. The patient can refuse any medical treatment as long as it is not an imminent threat to life or limb.
5. At no time are EMS personnel to put themselves in danger by attempting to treat and/or transport a patient who refuses care.
6. Patients for whom 9-1-1 is called but are not transported represent a potentially high-risk group and provider agencies should/shall have quality review programs specific to this patient population.

**POLICY:**

- I. Adult With Decision-Making Capacity or Minor (Not Requiring Parental Consent)  
Refusing Transport Against Medical Advice
  - A. EMS personnel shall advise the patient of the risks and consequences which may result from refusal of treatment and/or transport. The patient should be advised to seek immediate medical care.
  - B. Base contact should be made prior to the patient leaving the scene for patients who would otherwise meet Base Contact criteria (Ref. 1200.2 – Base Contact Requirements) in order for Base personnel to have the opportunity to interview the patient and to evaluate the appropriateness of the AMA. If the patient elopes from the scene, EMS personnel are not required to make Base Contact.
  - C. EMS personnel shall relay all the circumstances to the Base including assessment and care rendered, reasons for refusal, and the patient's plan for transportation and follow-up care.
  - D. EMS personnel shall make Base Contact prior to releasing a child at the scene with a parent or caregiver for all pediatric patients less than or equal to 12 months of age .
  - E. EMS personnel shall have the patient or their legal representative, as appropriate, sign the release (AMA) section of the Patient Care Record (EMS Report Form/Electronic Patient Care Record/ePCR). The signature shall be witnessed, preferably by a family member.
  - F. A patient's refusal to sign the AMA section should be documented on the Patient Care Record.

- II. Individual Lacking Decision-Making Capacity or a Minor (Requiring Parental Consent)
  - A. The patient should be transported to an appropriate receiving facility under implied consent. A psychiatric hold is not required.
  - B. If EMS personnel or the base hospital determines it is necessary to transport the patient against their will and the patient resists, or the EMS personnel believe the patient will resist, assistance from law enforcement should be requested in transporting the patient. Law enforcement may consider the placement of a psychiatric hold on the patient but this is not required for transport.
  - C. Law enforcement should be involved whenever EMS personnel believe a parent or other legal representative of the patient is acting unreasonably in refusing immediate care and/or transport.
- III. Patients Assessed, Treated, and Released
  - A. EMS personnel shall assess the patient for an ongoing emergency medical condition, high risk presentations, social risk factors, and assess that the patient or their legal representative has the capacity to decline transport.
  - B. Patients with an ongoing emergency medical condition, high risk presentation or social risk factors who do not desire transport to the emergency department shall be handled as refusing transport against medical advice (refer to Policy Section I).
  - C. Patients or the legal representatives of patients who contact EMS for minor complaints in order to have an assessment performed and determination made of the seriousness of the complaint and need for treatment, but later *decline transport* qualify to be assessed, treated, and released.
    - 1. In such cases, the EMS personnel should perform an assessment including vital signs, and after the patient or patient's legal representative's states they do not wish transport, the patient may be assessed, treated, and released at the scene.
    - 2. Patients should be instructed by EMS to follow-up with the patient's medical home or primary care physician. The advice given should be documented on the Patient Care Record. The following statement is recommended: "After our assessment, you feel that you do not wish to be transported and you do not require immediate care in the emergency department. You should seek care with your regular healthcare provider or a doctor's office or clinic within 24 hours. If you have worsening or persistent symptoms or change your mind and desire transport, recontact 9-1-1."
  - D. EMS personnel should not require patients who are Assessed, Treated and Released at scene to sign the release (AMA) section of the Patient Care Record, as this implies that the patient is at significant risk by not utilizing the EMS

system for treatment and/or transportation.

- E. If subsequent to further assessment and discussion, the patient or the patient's legal representative desires transport, EMS personnel should transport the patient to the hospital per destination policies.

#### IV. Documentation

- A. Public Assist and Person Contact/No Patient does not require completion of a Patient Care Record. Documentation should follow the EMS provider agency's operational policy.
- B. A Patient Care Record must be completed for each patient or contact encounter (i.e., Lift Assist, AMA, Assess, Treat and Release, and Treatment in Place), including those refusing emergency medical evaluation, care and/or transportation against medical advice and those released at scene. EMS personnel shall ensure that documentation is in compliance with Ref. 606 – Documentation of Prehospital Care. Patient Care Record documentation should include:
  - 1. AMA:
    - a. Patient history and assessment, including findings of an emergency medical condition or requirement to make Base Contact
    - b. Assessment by EMS that the patient or legal representative is alert and has the decision-making capacity to refuse EMS assessment
    - c. What the patient is refusing (i.e., medical care, transport) and reason for refusal
    - d. Risk and consequences of refusing care and/or transport, benefits of transport, and alternatives as explained to the patient or legal representative
    - e. Statement that the patient understands and verbalizes the risks and consequences of refusing care and/or transport
    - f. Signature of patient or legal representative
    - g. Patient's plan for follow-up care
    - h. Contact with Base Hospital, as applicable
    - i. For Minors, the relationship of the person(s) to whom the patient is

being released

2. Assess, Treat and Release:

- a. Patient history and assessment, including absence of findings of an emergency medical condition
- b. Assessment by EMS that the patient or legal representative is alert and has the capacity to make collaborative decision making with EMS to accept on-scene treatment, understand the need to have capacity for appropriate follow-up, but decline transport
- c. Discussion with patient including risks of non-transport, benefits of transport, and alternatives
- d. Plan for follow-up care including when to recall 9-1-1, seek emergency department care or follow-up with their medical home
- e. If Base contact was made (when applicable)
- f. For Minors, the relationship of the person(s) to whom the patient is being released

3. Treatment in Place:

- a. Document as per Assess, Treat, and Release and also include the name of the authorized advanced health care provider

V. Quality Improvement

- A. Each Provider Agency shall have a quality improvement program for patients who are not transported to the ED. The quality improvement program should include but may not be limited to the following:
  1. Monitor data on the frequency, percent, and type of nontransports.
  2. Establish a process for review of patient care records on a percentage of nontransports to include assessment of impact on the patient's outcome, and education/training provided as indicated by this review.
  3. Develop a process for evaluating rate of repeat call to 9-1-1 or "rekindles".
- B. Base Hospital shall incorporate patients released at the scene into their Quality Improvement Program (Ref. 304 – Paramedic Base Hospital Standards). The quality improvement program may include but not limited to the following:
  1. Review of select number of Base Hospital contacts for AMA and provide education to base personnel as appropriate from that review.

2. Inclusion of cases of patients released at the scene in Base Hospital Audio Recording Reviews.
3. Notification of EMS provider agency quality improvement staff when the base has knowledge of patients who are released at the scene and return for evaluation in the emergency department.

CROSS REFERENCE:

Prehospital Care Manual:

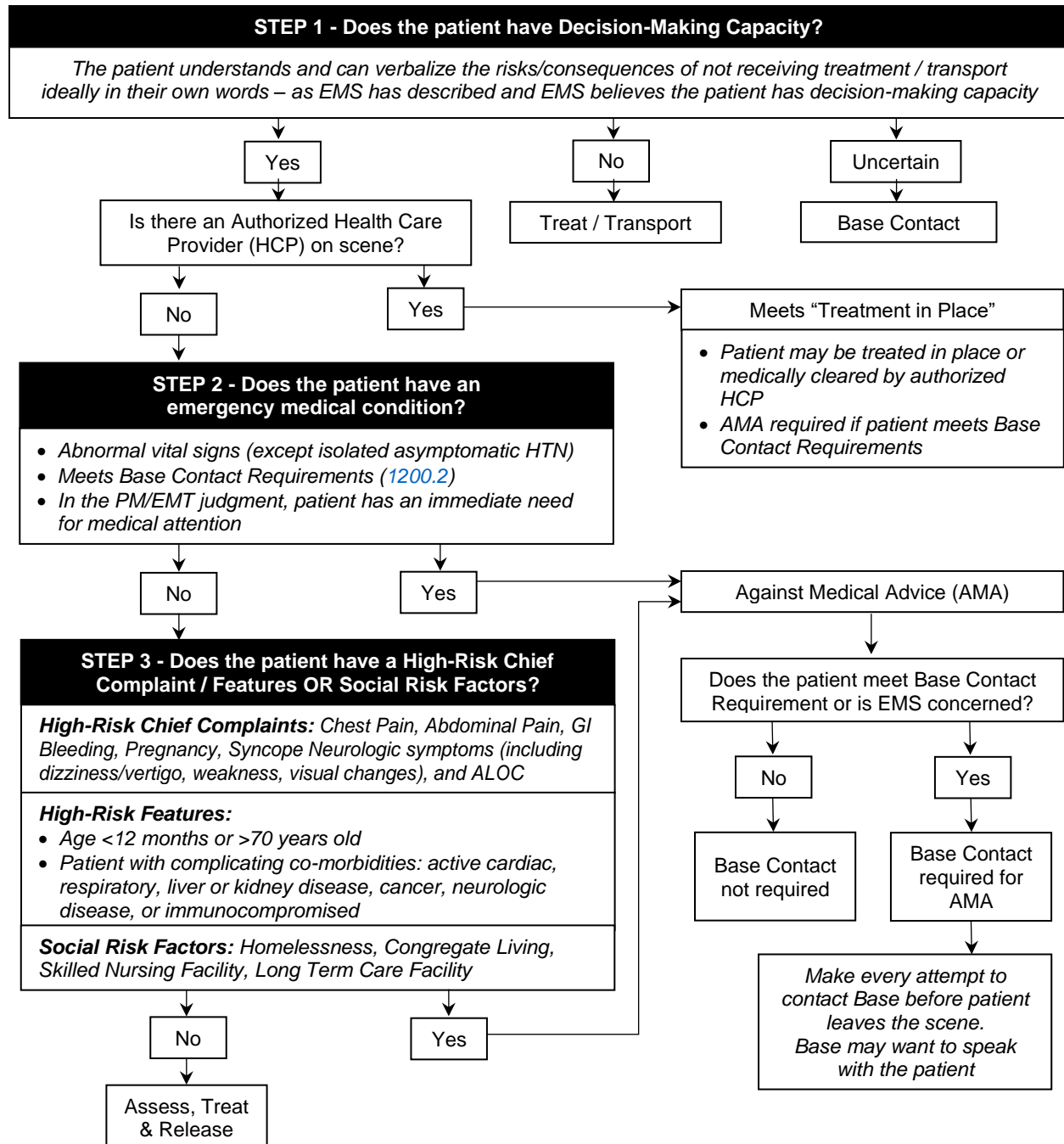
Ref. No. 304, **Paramedic Base Hospital Standards**  
Ref. No. 606, **Documentation of Prehospital Care**  
Ref. No. 832, **Treatment/Transport of Minors**  
Ref. No. 816, **Physician At The Scene**  
Ref. No. 1200, **Treatment Protocols**, et al.  
Ref. No. 1200.2, **Base Contact Requirements**  
Ref. No. 1309, **Color Code Drug Doses**  
Ref. No. 1380, **Medical Control Guidelines: Vital Signs**



SUBJECT: **PATIENT REFUSAL OF TREATMENT/TRANSPORT AND TREAT AND RELEASE AT SCENE** REFERENCE NO. 834.1  
**QUICK REFERENCE GUIDE**

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If EMS has assessed a patient who DOES NOT want transport to the hospital, this guide may be used to assist in determining the need for AMA; Assess, Treat and Release; or Treatment in Place



SUBJECT: **APPLICATION OF PATIENT RESTRAINTS**

[1200 Table of Contents](#)

PURPOSE: To provide guidelines for emergency procedures and use of restraints in the field or during transport of patients who are violent or potentially violent, or who may harm self or others.

AUTHORITY: California Code of Regulations, Title 22, Sections 100063, 100145, 100169(a)(1,2) and (c)(1)  
Welfare and Institutions Code, 5150  
California Code of Regulations, Title 13, Section 1103.2  
Health and Safety Code, Section 1798(a)

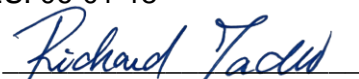
PRINCIPLES:

1. The safety of the patient, community, and responding personnel is of paramount concern when considering the use of restraints.
2. Staff should be properly trained in the appropriate use and application of restraints and in the monitoring of patients in restraints.
3. The application of restraints is a high-risk procedure due to the possibility of injury to both the patient and the provider; therefore, the least restrictive method that protects the patient and emergency medical services (EMS) personnel from harm should be utilized.
4. Restraints should be used in situations where the patient is potentially violent or is exhibiting behavior that is dangerous to self or others, only as necessary, when all lesser restrictive measures (e.g., verbal de-escalation) have failed.
5. EMS personnel must consider that aggressive or violent behavior may be a symptom of medical conditions such as head trauma, alcohol, substance abuse, metabolic disorders, emotional stress and, behavioral and psychiatric disorders. Base contact criteria shall be strictly adhered to for those conditions that require it.
6. Authority for scene management (e.g., controlling the activities that occur in the environment or space around the patient; ensuring bystanders are kept away; and EMS personnel are provided with a safe environment to treat the patient) shall be coordinated by law enforcement (LE), where applicable.
7. The responsibility for patient health care management rests with the highest medical authority on scene. Therefore, medical intervention and patient destination shall be determined by EMS personnel according to applicable policies.
  - a. The preferred restraint modality should be coordinated with LE, when applicable.

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APPROVED:

  
Director, EMS Agency

  
Medical Director, EMS Agency

- b. The method of restraint used should allow for adequate monitoring of vital signs and shall not restrict the ability to protect the patient's airway or compromise neurological or vascular status.
- 8. This policy is not intended to negate the need for LE personnel to use appropriate restraint equipment approved by their respective agency to establish scene management control.

## POLICY

### I. Forms of Restraining Devices

- A. Restraint devices applied by EMS personnel (including for the purpose of interfacility transport of psychiatric patients) must be either padded hard restraints or soft restraints (i.e., vest with ties, Velcro or seatbelt type). Both methods must be keyless and allow for quick release. Restraints shall be applied as four point padded wrist and ankle restraints, or a two-point padded wrist and belt restraint.
- B. The following methods of restraint shall NOT be utilized by EMS personnel:
  - 1. Applying hard plastic ties or any restraint device requiring a key to remove.
  - 2. Restraining a patient's hands and feet behind their back.
  - 3. Restraining patients in prone position.
  - 4. Placing a patient on a gurney and then placing a device (e.g., backboard, scoop stretcher or flats) on top of the patient, referred to as "Sandwich" method.
  - 5. Applying materials in a manner that could cause vascular, neurological or respiratory compromise (e.g., restriction of limbs, the neck or chest using gauze bandage or tape).
- C. In some situations, it may be necessary for LE to apply restraints (e.g., handcuffs, flex-cuffs, herein referred to as LE-restraint), which are not approved by EMS protocols. When appropriate, patients requiring ongoing patient care or EMS transported patients should have LE-restraints discontinued in favor of an EMS approved restraint intervention.

### II. Application and Monitoring of Restraints

- A. A restrained patient shall never be left unattended.
- B. Any restraint device used must allow for rapid removal if the patient's airway, breathing, or circulation becomes compromised.

- C. Restrained extremities should be evaluated for pulse quality, capillary refill, color, temperature, nerve and motor function immediately following application and at a minimum of every 15 minutes thereafter (or more often if clinically indicated). Any abnormal findings require adjustment, removal and reapplication of restraints if necessary.
- D. Restraint methods must allow the patient to straighten the abdomen and chest such that they can take full breaths.
- E. Under no circumstances are patients to be transported in the prone position regardless of who applies the restraint.
- F. EMS personnel must ensure that the patient's position allows for adequate monitoring of vital signs, does not compromise respiratory, circulatory, or neurological status, and does not preclude any necessary medical intervention to protect or manage the airway should vomiting occur.
- G. EMS restraints shall not be attached to movable side rails of a gurney.
- H. Restraint devices applied by LE require the officer's continued presence to ensure patient and scene management safety.
  - 1. The LE officer should accompany the patient in the ambulance.
  - 2. In the unusual event that this is not possible, the LE officer should follow by driving in tandem with the ambulance on a pre-determined route.
  - 3. A method to alert the LE officer of any problems that may develop during transport should be discussed prior to leaving the scene.
  - 4. If the patient is handcuffed by LE officers, consideration should be made to transition to the least restrictive restraints that are safe for the patient and responders, including consideration of transfer to EMS restraints.

### III. Pharmacologic Management of the Patient in Restraints

- A. A patient who has undergone physical restraint should not be allowed to continue to struggle against the restraints as this may lead to injury (i.e., rhabdomyolysis, strains, sprains, severe acidosis, cardiac ischemia).
- B. Patients who are agitated while in physical restraint may receive administration of medication by EMS personnel to reduce agitation with continued monitoring for respiratory depression, in accordance with (*TP 1208, Psychiatric/Behavioral Emergencies*) and/or (*TP 1209, Agitated Delirium*).
  - 1. If the patient remains agitated in BLS care and there is an ongoing concern for patient safety, ALS upgrade shall be initiated.

## IV. Required Documentation on the Patient Care/EMS Report Form

- A. Reason restraints were applied
- B. Type of restraints applied
- C. Identity of agency/medical facility applying restraints
- D. Assessment of the overall cardiac and respiratory status of the patient; and the circulatory, motor and neurological status of the restrained extremities at a minimum of every 15 minutes
- E. Reason for removing or reapplying the restraints or any abnormal findings

## V. Quality Assurance:

- A. Develop a process for review of selected cases where physical restraint or medication management by EMS personnel are used, with attention to the appropriateness of restraint for the patient, the type of restraint(s) used, the quality and frequency of physiologic monitoring, protocol compliance, and documentation compliance.
- B. Agencies shall track the use of medications for the purpose of management of agitated patients.

## CROSS REFERENCE:

Prehospital Care Manual:Ref. No. 502, **Patient Destination**Ref. No. 703, **ALS Unit Inventory**Ref. No. 1200.2, **Base Contact Requirements**

SUBJECT: **CHEMPACK DEPLOYMENT FOR  
NERVE AGENT RELEASE**

REFERENCE NO. 1108

[1200 Table of Contents](#)

PURPOSE: To provide guidelines for the release of CHEMPACK to designated personnel during times of medical need.

DEFINITION:

**CHEMPACK:** The CHEMPACK program was created by the Centers for Disease Control (CDC) and designed to place nerve agent antidotes in communities all over the country to support a quick response to a nerve agent attack. The CHEMPACK program is a component of the Strategic National Stockpile (SNS). Each CHEMPACK contains auto-injector antidote kits, atropine, 2-Pralidoxime, sterile water for injection, and Diazepam/Midazolam. There are two types of CHEMPACK containers:

- **EMS CHEMPACK:** Designed for prehospital medical providers, and the antidotes contained in the EMS CHEMPACK are mostly auto-injectors for speed and ease of use.
- **Hospital CHEMPACK:** Designed for hospital medical staff, and the antidotes contained in the hospital CHEMPACK are primarily multi-dose vials.

PRINCIPLES:

1. Los Angeles County Emergency Medical Services (EMS) Agency has fielded and maintains a current inventory of 65 CHEMPACK caches, that are geographically stored throughout the County.
2. The EMS Agency coordinates quality assurance of all 65 CHEMPACKs per the Assistant Secretary for Preparedness and Response (ASPR) protocol and each site manager should provide routine reports to EMS.
3. The overall authority to deploy CHEMPACKs, or portions of its contents, to the field or local hospitals rests with the EMS Agency. The EMS Agency will coordinate the deployment.
4. In any event involving a terrorist attack employing chemical nerve agents, the EMS Agency, hospitals, and provider agencies shall implement their terrorism notification procedures and monitor the situation.
5. CHEMPACK deployment shall be for incidents in which a nerve agent is responsible for the casualties. The incident must be a mass casualty incident which exceeds the provider agencies' Disaster Pharmaceutical Caches (DPC), Ref. No. 1104, Disaster Pharmaceutical Caches Carried by Authorized ALS Providers, for patient use or hospital resources to deal with the patient load.

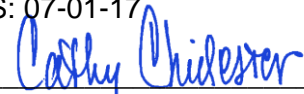
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REVISED: 01-01-21

SUPERSEDES: 07-01-17

APPROVED:

  
Director, EMS Agency

  
Medical Director, EMS Agency

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6. CHEMPACKs may be pre-deployed for special events.

POLICY:

I. Types of Deployment

- A. **Field Deployment** - This scenario involves the deployment of CHEMPACK resources to an incident site in a public area. This would occur in the case of an overt nerve agent release in a populated area such as a stadium or inside a building.
- B. **Hospital Deployment** – This scenario may involve an overt or covert terrorist attack in which the first sign of an attack may be the unexplained surge of patients seeking treatment at local hospital(s) for symptoms indicating nerve agent exposure.

II. Role of the Provider Agency

- A. Determine whether first responder DPCs for patient use are sufficient to handle the incident. If provider agency's DPC resources are adequate to deal with the patient load, generally no other pharmaceutical assistance would be requested.
- B. Notify the EMS Agency via the Medical Alert Center (MAC) by either telephone at (562) 378-1789, ReddiNet, or VMED28 Radio:155.34mhz. If unable to contact the MAC, EMS personnel shall contact the Fire Operational Area Coordinator (FOAC) – Los Angeles County Fire District (which is contacted through its dispatch center).
- C. If DPC resources are inadequate, request the deployment of an EMS CHEMPACK via the MAC. Provide the MAC with the following information:
  - 1. Incident location;
  - 2. Chemical agent (if known);
  - 3. Number and severity of victims; and
  - 4. Chief complaints of patients.
- D. Transport the EMS CHEMPACK from the CHEMPACK storage site to the scene.

III. Role of the affected hospital(s)

- A. Determine whether the hospital's resources are adequate to deal with the patient load. If the hospital's resources are adequate to deal with the patient load, generally no other pharmaceutical assistance would be requested.
- B. Notify the EMS Agency via the MAC at (562) 378-1789 or ReddiNet of a possible terrorist attack. The hospital shall provide the MAC with the following information:

- 
1. Name of hospital;
  2. Point of Contact (POC);
  3. Best contact information;
  4. Chemical agent (if known);
  5. Number and severity of victims; and
  6. Chief complaints of patients.
- C. If hospital resources are inadequate, request deployment of the hospital CHEMPACK from the EMS Agency.
- D. Transport the hospital CHEMPACK from the CHEMPACK storage site to the hospital.
- IV. Role of the EMS Agency
- A. Once contacted by provider agency or affected hospital, contact the closest CHEMPACK storage site to the incident and instruct the storage site staff to prepare the appropriate CHEMPACK for deployment.
- B. Contact the CHEMPACK storage site and request POC information and pick-up location at storage site.
- C. Provide the affected hospital or provider agency with the POC and pick-up location at CHEMPACK storage site.
- V. Role of the CHEMPACK storage sites
- A. Maintain a deployment plan that contains a minimum of the following information:
1. CHEMPACK deployment training for staff;
  2. 24/7/365 POC list;
  3. CHEMPACK storage location;
  4. Instructions on how to access location and key; and
  5. Location of preferred pick-up point.
- B. When notified by the EMS Agency to deploy, prepare the CHEMPACK as per deployment plan.



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CROSS REFERENCE:

Prehospital Care Manual:

Ref. No. 519,      **Management of Multiple Casualty Incidents**  
Ref. No. 807,      **Medical Control During Hazardous Material Exposure**  
Ref. No. 1104,     **Disaster Pharmaceutical Caches Carried by Authorized ALS Providers**  
Ref. No. 1108.1,   **CHEMPACK Inventory List**  
Ref. No. 1108.2,   **CHEMPACK Photograph**  
Ref. No. 1240,     **Treatment Protocol: HAZMAT**