

**Illinois Region 8 Emergency Medical Services
 Central DuPage, Edward, Good Samaritan, Loyola EMS Systems
 Standard Operating Procedures**

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The Standard Operating Procedures assume that certain tasks will be done simultaneously by EMS Providers. The order in which the tasks appear is not necessarily in order of need or importance.

OUTLINE FOR RADIO REPORT

TRANSMIT THE FOLLOWING, BEING AS CONCISE AS POSSIBLE:

1. Name and vehicle number of provider, desired destination, and ETA. Indicate if desired destination is the nearest by travel time, and any reasons for desiring to transport to other than the nearest hospital.
2. Patient age, sex, and approximate weight.
3. Level of consciousness and orientation.
4. Chief complaint and paramedic impression, including severity:
 - symptoms, degree of distress, severity of pain on a scale of 0-10
 - mechanism of trauma/pertinent scene information
 - pertinent negatives/associated complaints
5. Vital signs
 - Pulse - rate, quality, regularity
 - Blood Pressure - auscultated or palpated
 - Respirations - rate, pattern, depth
 - Skin - color, temperature, moisture, turgor
6. History
 - Signs and Symptoms**
 - Allergies**
 - Medications: time and last dosage taken (bring all medications to ED)**
 - Past history of pertinent illness/injury**
 - Last oral intake (food or fluid) if known, Last Menstrual Period**
 - Events surrounding event**
7. Clinical findings
 - assessment findings from review of systems - pertinent (+) and (-) findings
 - interpretation of ECG and vital signs q 15 minutes and after each ALS intervention: q 5 minutes if unstable
 - GCS and blood glucose for patients with altered mental status
 - trauma score parameters if appropriate

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GENERAL PATIENT ASSESSMENT

BLS / ALS

1. Assess and secure scene safety
2. Use standard precautions on all patients

ADULT

3. Adult Initial Assessment

- a. Airway – establish and maintain an airway. Utilize cervical spine precautions when indicated
- b. Breathing – assess; assist or provide ventilations as indicated; assess lung sounds
- c. Circulation – check pulse and control hemorrhage
- d. Disability – neurologic
 - A – Alert
 - V – responds to Verbal stimuli
 - P – responds to Painful stimuli
 - U – Unresponsive
- e. Expose and examine as indicated
- f. Identify priority transports

4. Focused History and Physical Exam

- a. Signs & Symptoms, Systematic head-to-toe assessment including Glasgow Coma Scale (GCS)
- b. Allergies
- c. Medications
- d. Pertinent Medical History
- e. Last oral intake, Last Menstrual Period
- f. Events leading to present condition
- g. Initial set of vital signs
- h. Rate pain 0-10 scale

5. Detailed Physical Exam (patient and injury specific when appropriate)

6. Ongoing Assessment

- a. Reassess ABCDs

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**CONSIDERATION FOR PATIENTS WITH SPECIAL
HEALTHCARE NEEDS**

- ◆ Track Adults and Children with Special Healthcare Needs in your service area and become familiar with both the patient as well as their anticipated emergency care needs.
- ◆ Refer to patient's emergency care plan formulated by their medical providers, if available. Understanding the patient's baseline will assist in determining the significance of altered physical findings. Parents or caregivers are the best source of information on: medications, baseline vitals, functional level/normal mentation, likely medical complication, equipment operation and troubleshooting, emergency procedures.
- ◆ Regardless of underlying conditions, assess in a systematic and thorough manner. Use parents/caregivers/home health nurses as medical resources.
- ◆ Be prepared for differences in airway anatomy, physical development, cognitive development, and possible existing surgical alterations or mechanical adjuncts. Common home therapies include: respiratory support (oxygen, apnea monitors, pulse oximeters, tracheostomies, and mechanical ventilators), cardiac devices (LVADs, continuous infusions), nutrition therapy (nasogastric or gastrostomy feeding tubes), intravenous therapy (central venous catheters), urinary catheterization or dialysis (continuous ambulatory peritoneal dialysis), biotelemetry, ostomy care, orthotic devices, communication or mobility devices or hospice care.
- ◆ Communicate with the patient in an age appropriate manner. Maintain communication with and remain sensitive to the parents/caregivers and the patient.
- ◆ The most common emergency encountered with pediatric patients is respiratory related and so familiarity with respiratory emergency interventions/adjuncts/treatment is appropriate.

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ADULT INITIAL MEDICAL CARE

BLS/ALS

1. Loosen tight clothing and reassure patient
2. Place patient in Semi-Fowler's position or position of comfort unless contraindicated.
3. Enhance airway patency by suctioning and/or insertion of an oropharyngeal or nasopharyngeal airway as needed
4. Administer supplemental **OXYGEN AT LOW FiO₂** (4-6 LPM nasal cannula).
 - If unstable, increase **OXYGEN TO HIGH FiO₂** (12-15 LPM non-rebreather mask)
 - If hypoventilating or apneic, **VENTILATE WITH HIGH FiO₂** (BVM with ≥ 15 LPM oxygen supply)

ALS

- Oxygen saturation if pulse oximetry available.
 - If intubated, use end tidal CO₂ detector and/or esophageal intubation detection device per System-specific policy.
 - If unable to intubate, consider use of Alternative Airway (Combitube™, King LT®).
5. If altered mental status:
 - Place patient on side (vomiting precautions), unless contraindicated
 - Check glucose level. If glucose < 60, treat per **Diabetic/Glucose Emergencies SOP**, p. 29
 6. Evaluate cardiac rhythm if indicated. All ALS patients do not necessarily require continuous ECG monitoring or transmission of a strip to the telemetry base station.
 - Consider 12-lead ECG on all patients with cardiac-related complaint, dysrhythmias or syncope.
 7. Establish venous access via **IV of NORMAL SALINE (NS) at 10 mL/hr** with regular drip tubing or consider **SALINE LOCK** as indicated by patient condition. Attempt x 2 unless requested to continue or situation indicates.
 - Continuing use of central venous access devices is acceptable for transport if initiated by RN or physician. Document the name of the on-scene healthcare provider or trained caregiver, i.e. parent. Contact Medical Control prior to administration of any medications.
 - If patient encountered with continuous infusion devices or home medication devices, transport unaltered and contact Medical Control.
 - Per System-specific policy, **INTRAOSSEOUS ACCESS** may be used in patients for whom vascular access is urgently needed.

BLS/ALS

8. **Pain management** should be considered in the care of all patients. Ask patient to rate pain on a scale of 0-10.
9. If patient is experiencing nausea or vomiting, consider administering **ZOFRAN (ondansetron) ODT 4 mg tab or 4 mg slow IV x 1 dose only**.
10. Attempt to contact Medical Control as soon as care is completed or patient's condition is stabilized. Transmit assessment and treatment information and

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await orders.

11. Interpretation of ECG and vital signs q 15 minutes and after each ALS intervention; q 5 minutes if unstable.
12. Transport to the closest appropriate hospital. **Note: By law, a physician must certify that the benefits outweigh the risks of transport to a facility other than the closest appropriate hospital. Establish Medical Control contact before initiating transport. ECRN must contact and obtain the availability of the intended receiving hospital before authorizing the bypass.**
13. Pursuant to Illinois Vehicle Code Section 625 ILCS 5/11-1421, the use of visual and audible warning devices from the scene to the hospital is authorized by the EMS Medical Director when deemed necessary by the healthcare provider(s) caring for the patient (refer to System-specific policy).

Certain situations may require that treatment, which would normally be administered on the scene, be attempted en route to the hospital. The patient's condition or behavior which necessitated abbreviated scene time should be thoroughly documented.

**OUTLINE FOR STREAMLINED COMMUNICATION
FOR BLS CALLS ONLY**

1. Name and vehicle number of provider
2. Patient age and gender
3. Chief complaint/mechanism of injury
4. SOP being followed
5. Any deviation from SOP/unusual circumstances
6. ETA

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INITIATION OF ALS CARE

ALS should be initiated according to the following guidelines:

1. Patient with abnormal vital signs, regardless of complaints. The following are guidelines for adults:
 - Pulse < 60 or > 130 BPM; or irregularity
 - Respiratory rate < 10 or > 30; or irregularity
 - Systolic blood pressure < 90 or > 200 mmHg

2. Any patient with a potential life-threatening condition which exists or might develop during transport. Examples of situations in which ALS care is usually indicated include, but are not limited to:
 - Altered Mental Status and/or Unconsciousness
 - Chest Pain
 - Palpitations
 - Seizures
 - Neurologic Deficit/Stroke
 - Syncope or Near Syncope
 - Abdominal Pain
 - Shortness of Breath/Difficulty Breathing
 - Vaginal Bleeding
 - Complication of Pregnancy or Emergency Childbirth
 - GI Bleeding
 - Trauma
 - Overdose/Poisoning

3. In an uncooperative patient, the requirements to initiate assessment and full ALS service may be waived in favor of assuring that the patient is transported to an appropriate medical facility.

Document clearly the reasons ALS care was aborted.

4. Never discontinue ALS once initiated unless prior approval by Medical Control.
5. WHEN IN DOUBT, CONSULT WITH MEDICAL CONTROL.
6. **Drug Administration Guidelines for Pediatric Patients:** When calculating drug dosages for pediatric patients, the maximum individual and total doses should not exceed the respective adult doses. This does not apply to IV fluid boluses (where the pediatric dose of 20 mL/kg may exceed the 200 mL adult dose) or individual doses of Versed (midazolam) or Narcan (naloxone) due to weight-based dosing.

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LOAD-AND-GO SITUATIONS

This SOP applies if circumstances demand hospital care for patient stability. In certain circumstances, a patient's condition may require EMS providers to omit or abbreviate certain procedures described in these SOPs. The decision to deviate from Standard Operating Procedures must be documented thoroughly. This Standard Operating Procedure does not imply that the rate of speed of transport is accelerated, but rather, there is emphasis on rapid patient packaging and limited on-scene time (barring prolonged extrication). ***Any deviation from Standard Operating Procedures must be based on the medical judgment of the EMS provider treating the patient.***

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WITHHOLDING OR WITHDRAWING OF RESUSCITATIVE EFFORTS

BLS/ALS

1. If at any time you are not certain which of these policies apply, begin treatment and contact Medical Control for orders.
2. Emotional support should be provided to significant others.
3. Disposition of the patient will be handled according to local and county requirements
4. **Use of SOP must be guided by a physician.** Contact should be established via telemetry radio or cellular phone. Note: **MERCI radio or private phone may be used in extenuating circumstances.**
5. Patients may be pronounced dead by an ED physician. The time of pronouncement should be documented on the patient care report (PCR).

ALS

6. Document thoroughly all circumstances surrounding the use of this procedure.
7. Attach a copy of the ECG rhythm strip to the provider copy of the PCR. If someone represents themselves as having Power of Attorney to direct medical care of a patient and/or a document referred to as a Living Will is present, follow these guidelines:

Power of Attorney for Healthcare

8. DNR requests can only be honored by EMS providers if a **written DNR Order**, signed by the patient's physician, is presented.
9. Healthcare decisions other than DNR may be made by the Power of Attorney for Healthcare, if the document provides for this. If in doubt, begin treatment and contact Medical Control.
10. Bring any documents presented to the hospital.

Living Will/Surrogates

8. DNR requests can only be honored by EMS providers if a **written DNR Order**, signed by the patient's physician, is present.
9. Living Wills **may not** be honored by EMS providers. Begin or continue treatment. Contact Medical Control, explain the situation, and follow any orders received.
10. There are **no** situations in which a surrogate can directly give instructions to EMS providers. Begin or continue treatment. Contact Medical Control, explain the situation and follow any orders received.

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WITHHOLDING OR WITHDRAWING OF RESUSCITATIVE EFFORTS

BLS/ALS

DNR Orders / Withholding Treatment

8. Confirm the validity of the DNR order according to System-specific policy. Call Medical Control if any item is missing. Components of a valid DNR order:
 - Must be a written document that has not been revoked. It must contain all of the following:
 - Name of patient
 - Name and signature of physician
 - Effective date
 - The words “Do Not Resuscitate”, “Withhold Treatment” or the equivalent
 - A copy is acceptable and a witness signature is required.
 - Evidence of consent – any of the following:
 - ◆ Signature of the patient, or
 - ◆ Signature of Legal Guardian, or
 - ◆ Signature of Durable Power of Attorney for Health Care Agent, or
 - ◆ Signature of surrogate decision maker under the Illinois Health Care Surrogate Act.
9. If the DNR order is valid, resuscitative efforts will be withheld. Follow any specific orders found on the DNR order.
10. In the event the patient has a valid DNR order but IS NOT in cardiac or respiratory arrest with a decompensating condition, begin **Initial Medical Care SOP**, p. 4; if you are considering intubation **contact Medical Control**. If unable to contact Medical Control, follow appropriate SOP.
11. If resuscitative efforts were begun prior to the DNR form being present, efforts may be withdrawn once the validity of the order is confirmed. Contact Medical Control and explain the situation. Follow any orders received.

BLS/ALS

Obviously Dead Patients: “Triple Zero”

8. Obviously dead patients are those found to be non-breathing, pulseless, asystolic, and have one or more of the following long-term indications of death. No resuscitative efforts are to be initiated for the patients listed below:
 - Decapitation
 - Rigor Mortis without hypothermia
 - Profound dependent lividity
 - Decomposition
 - Mummification/putrefaction
 - Incineration
 - Frozen state
9. For patients appearing to be obviously dead but not listed above, contact Medical Control and explain the situation. Indicate that you have a “Triple Zero”. Follow any orders received.
10. Document pronouncement time and physician name.

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WITHHOLDING OR WITHDRAWING OF RESUSCITATIVE EFFORTS

BLS/ALS

Hospice Patients Not in Arrest

8. If patients are registered in a hospice program, initiate BLS care and immediately contact Medical Control for orders on treatment and disposition. Inform Medical Control of the presence of written treatment orders and/or valid DNR orders.

ALS

Patients in persistent Asystole/PEA who do not respond to treatment:

Note: An order from a physician is required before stopping treatment under this SOP.

8. Provide patient care, per **Adult Asystole/PEA SOP**, p. 19, based on the patient's condition.
9. Contact Medical Control and explain the events of the call. Report treatments administered and any patient responses.
 - a. Confirm all of the following:
 - The patient is an adult, is normothermic, and experienced an arrest unwitnessed by EMS
 - The patient remains in Asystole/PEA
 - ET TUBE and VASCULAR ACCESS are confirmed as patent
 - Drug therapy, defibrillation, and CPR attempts have been carried out according to SOP
 - b. If the physician determines it is appropriate, s/he may give the order to discontinue medical treatment. It is not necessary that all four above criteria be met.
 - c. **Only an ED physician may make the determination to withdraw resuscitative efforts.**
 - d. Consult with Medical Control for disposition of patient. Record time of pronouncement and physician name.
10. If the physician gives the order to continue resuscitative efforts until you reach the hospital, treatment per appropriate SOP is to be carried out.
11. If unable to establish communications with Medical Control, resuscitative efforts should continue until the patient reaches the hospital.

BLS/ALS

Blunt Traumatic Arrest

- A. Blunt trauma patient without vital signs upon arrival, **may consider** withholding resuscitative efforts with approval of Medical Control.

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ADULT SUSPECTED CARDIAC PATIENT WITH CHEST PAIN

STABLE: alert, oriented, normotensive

BLS / ALS

1. Initial Medical Care SOP, p. 4

- Inquire about the patient's use of Viagra (sildenafil), Levitra (vardenafil), Cialis (tadalafil), or Revatio (sildenafil citrate) within 36 hours. Administration of nitroglycerin (NTG) is contraindicated in these patients.
- Inquire about the patient's taking of Brilinta (ticagrelor). Contact Medical Control prior to administration of baby aspirin.

2. Administer **baby aspirin 324 mg (4 x 81 mg tablets) chewed and swallowed**

- unless contraindicated
- may omit if patient has taken aspirin within 8 hours
- administer aspirin to achieve a total dose of 324 mg within the last 8 hours.

3. **12-Lead ECG (if able). Obtain and review early, preferable with initial vital signs and before NTG administration.**

- If ST-segment elevation indicative of acute myocardial infarction (STEMI) seen, communicate ECG findings to Medical Control ASAP. Transmit ECG (if System mandated) and/or relay ST-segment findings and machine interpretation.
- If inferior wall pattern seen (ST-segment elevation in leads II, III and aVF), NTG is contraindicated.
- Maintain continuous ECG monitoring
- Transport to the closest, most appropriate facility

BLS

- 4. If patient has physician-prescribed NTG and has not taken a maximum dose, and if Systolic BP > 100 mmHg, administer **NTG 0.4 mg SL****

ALS

- 3. Systolic BP > 100 mmHg and symptomatic: **NTG 0.4 mg SL**; may **repeat NTG** x 1 in 5 minutes if systolic BP > 100 mmHg and IV established (NOTE: Initial NTG may be given prior to IV start)**

- 4. If systolic BP > 100 mmHg, administer **FENTANYL 1 mcg/kg SLOW IV/IM, max first dose 100 mcg. Repeat dose 0.5 mcg/kg SLOW IV/IM in 5 min, max repeat dose 50 mcg.****

- Patients > 65 years old and if systolic BP > 100 mmHg, administer **FENTANYL 0.5 mcg/kg SLOW IV/IM, max dose 50 mcg. Repeat dose 0.25 mcg/kg SLOW IV/IM in 5 min, max repeat dose 25 mcg.**

Special considerations:

- Avoid more than two IV attempts if patient is a candidate for thrombolytic therapy.
- **If ST-segment elevation in leads II, III, aVF (possible inferior wall MI), avoid lidocaine and nitroglycerin.**

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ADULT SUSPECTED CARDIAC PATIENT WITH CHEST PAIN (Continued)

UNSTABLE: altered mental status or signs of hypoperfusion

BLS

1. **Initial Medical Care SOP**, p. 4
2. Initiate **Expeditious Transport**. Notify Medical Control enroute.

ALS

3. If pulse < 60 BPM, treat per **BRADYDYSRHYTHMIAS SOP**, p. 13
4. If pulse \geq 60 BPM, treat per **CARDIOGENIC SHOCK SOP**, p. 22
5. Treat dysrhythmias per appropriate SOP

Note:

Oral medications for erectile dysfunction (Viagra®, Levitra®, Cialis®, etc.) or pulmonary hypertension (Revatio™) may potentiate the effect of nitrates. Consult Medical Control prior to administering NTG in these situations.

Acute coronary syndrome (ACS) in patients < 30 years old is uncommon and judgment should be used in implementing this protocol unless 12-lead ECG findings consistent with ACS are seen.

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ADULT BRADYDYSRHYTHMIAS

ALS

STABLE: alert, oriented, normotensive

1. **Initial Medical Care SOP**, p. 4
 - **Anticipate the need for transcutaneous pacing (TCP)**
2. **Transport**

UNSTABLE: altered mental status, signs of hypoperfusion

1. **Initial Medical Care SOP**, p. 4

Supraventricular Bradycardia, Second Degree Type I AV block

2. **ATROPINE 0.5 mg rapid IV/IO or 1 mg ET**; may repeat **ATROPINE** q 3-5 minutes up to 3 mg until pacing available.
3. If patient remains hypotensive and pulse < 60 BPM: initiate **TRANSCUTANEOUS PACING (TCP)** at an initial rate of 70 BPM per System-specific procedure. Consider sedation with **VERSED** (midazolam) **2 mg increments IV/IO** q 2 minutes up to 10 mg total as necessary.
4. If patient remains symptomatic, administer **DOPAMINE 5 – 10 mcg/kg/min IVPB**.

IVR, Second Degree Type II or Third Degree AV block

2. Initiate **TRANSCUTANEOUS PACING (TCP)** at an initial rate of 70 BPM per System-specific procedure. Consider sedation with **VERSED** (midazolam) **2 mg increments IV/IO** q 2 minutes up to 10 mg total as necessary.
3. If patient remains symptomatic, administer **DOPAMINE 5 – 10 mcg/kg/min IVPB**.

Note:

- If patient is symptomatic, **do not delay pacing** while awaiting IV access or **atropine** to take effect
- **Do not give lidocaine** to patients in AV blocks or IVR
- **If ST-elevation in leads II, III, aVF (possible inferior wall MI), avoid lidocaine and nitroglycerin**

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**ADULT SUPRAVENTRICULAR TACHYCARDIA
(NARROW COMPLEX TACHYCARDIA RATE > 150 BPM)**

ALS

1. Search for treatable contributing causes:

Possible Cause	Field Treatment
Cardiogenic Shock	Cardiogenic Shock SOP
Heart Failure	Pulmonary Edema SOP
Hypovolemia	IV fluid bolus(es)
Hypoxemia	Ventilations with high FiO ₂ , verify ET tube placement
Hypoglycemia	Diabetic / Glucose Emergencies SOP
Hypothermia	Cold Emergencies SOP
Side effects of medications or overdose	
Tamponade (cardiac)	IV fluid bolus(es) to optimize preload
Tension Pneumothorax	Pleural decompression of affected side

STABLE: alert, oriented, normotensive

2. **Initial Medical Care SOP**, p. 4 and start IV in proximal vein
3. **Valsalva maneuver** while preparing medication
4. If no response, **ADENOSINE 6 mg rapid IV** with 10 mL NS flush
5. If no response, **ADENOSINE 12 mg rapid IV** with 10 mL NS flush
6. If no response, **ADENOSINE 12 mg rapid IV** with 10 mL NS flush

UNSTABLE: HR > 150 BPM with altered mental status and/or signs of hypoperfusion

2. **Initial Medical Care SOP**, p. 4
3. Consider sedation with **VERSED** (midazolam) **2 mg increments IV/IO** q 2 minutes up to 10 mg total as necessary.
4. **SYNCHRONIZED CARDIOVERSION at 100 J** (monophasic or biphasic)
5. **If no response, repeat SYNCHRONIZED CARDIOVERSION** at recommended energy. Check rhythm and pulse between shocks.
6. If no response, consider **Cardiogenic Shock SOP**, p. 22, or contact Medical Control

ADENOSINE Notes:

- **ADENOSINE** should not be given to irregular rapid rhythms
- Follow **ADENOSINE** doses with rapid 10 mL NS flush

DEFIBRILLATOR ENERGY RECOMMENDATIONS

Defibrillator	Waveform	Adult Defib J	Adult Sync J	Peds Defib J / kg	Peds Sync J / kg
Monophasic		200-300-360	100-150-200-300-360	2 - 4	0.5 - 2
Medtronic ADAPTIV™	N/A	200-300-360	100-150-200-300-360	2 - 4	0.5 - 2
Philips SMART™	BTE	150	100-150-200		
Welch-Allyn	BTE	200-300-360	100-150-200-300-360		
Zoll	RB	120-150-200	100-120-150-200		

BTE = Biphasic Truncated Exponential, RB = Rectilinear Biphasic

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**ADULT VENTRICULAR TACHYCARDIA WITH PULSE
(WIDE COMPLEX TACHYCARDIA)**

ALS

STABLE: alert, oriented, normotensive

1. **Initial Medical Care SOP**, p. 4, with **HIGH FiO₂**
2. Treat patient with either amiodarone (preferred) **OR** lidocaine **only**. Do not combine medicinal therapies.

2. Administer **AMIODARONE 150 mg IV/IO over 10 min.**
3. If no response, call Medical Control to consider **ADENOCARD** (adenosine).

2. Administer **LIDOCAINE 1 mg/kg IV/IO**
 - a. If ventricular tachycardia (VT) persists or PVCs present, rebolus with **LIDOCAINE 0.5 mg/kg IV/IO q 3 min up to 3 mg/kg**
 - b. If VT eliminated, rebolus with **LIDOCAINE 0.5 mg/kg IV/IO** 10 min after initial bolus
3. If no response, call Medical Control to consider **ADENOCARD** (adenosine).

UNSTABLE: altered mental status, signs of hypoperfusion, heart rate > 150 BPM

1. **Initial Medical Care SOP**, p. 4, with **HIGH FiO₂** or **VENTILATION**
2. Consider sedation with **VERSED** (midazolam) **2 mg increments IV/IO q 2 minutes** up to 10 mg total as necessary.
3. **SYNCHRONIZED CARDIOVERSION** at **100 J**
4. Treat patient with either amiodarone (preferred) **OR** lidocaine **only**. Do not combine medicinal therapies.

Amdiodarone (Preferred)

Lidocaine

4. Administer **AMIODARONE 150 mg IV/IO over 10 min.** Do not delay cardioversion attempts for IV start.
 - Assess pulse and rhythm after each cardioversion
 - Consider cardioversion if rhythm persists
 - If rhythm converts, follow appropriate SOP
5. If VT persists, **repeat SYNCHRONIZED CARDIOVERSION** at recommended energy. Check rhythm and pulse between shocks.

4. Administer **LIDOCAINE 1 mg/kg IV/IO.** Do not delay cardioversion attempts for IV start.
 - Assess pulse and rhythm after each cardioversion
 - Consider cardioversion if rhythm persists
 - If rhythm converts, follow appropriate SOP
 - Anytime VT converts to a supraventricular rhythm, administer **LIDOCAINE 1 mg/kg IV/IO.** Rebolus in 10 minutes with **LIDOCAINE 0.5 mg/kg IV/IO.**

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5. If VT persists, repeat **SYNCHRONIZED CARDIOVERSION** at recommended energy. Check rhythm and pulse between shocks.
6. If VT persists, repeat **LIDOCAINE 0.5 mg/kg IV/IO q 3 minutes up to 3 mg/kg**. Repeat **SYNCHRONIZED CARDIOVERSION** at recommended energy after each **LIDOCAINE** bolus.

Note:

If VT becomes pulseless or deteriorates to ventricular fibrillation (VF), defibrillate immediately per **Ventricular Fibrillation/Pulseless Ventricular Tachycardia SOP**, p.17

DEFIBRILLATOR ENERGY RECOMMENDATIONS

Defibrillator	Waveform	Adult Defib J	Adult Sync J	Peds Defib J / kg	Peds Sync J / kg
Monophasic		200-300-360	100-150-200-300-360	2 - 4	0.5 - 2
Medtronic ADAPTIV™	N/A	200-300-360	100-150-200-300-360	2 - 4	0.5 - 2
Philips SMART™	BTE	150	100-150-200		
Welch-Allyn	BTE	200-300-360	100-150-200-300-360		
Zoll	RB	120-150-200	100-120-150-200		

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**ADULT VENTRICULAR FIBRILLATION
PULSELESS VENTRICULAR TACHYCARDIA**

ALS

1. Verify pulselessness
2. If arrest is witnessed by EMS providers, **DEFIBRILLATE** as soon as available. If defibrillator is not immediately available, perform **precordial thump**
3. **CPR** until defibrillator available
 - **While patient is pulseless, CPR should only be interrupted for ventilation (until intubated), rhythm check or shock delivery.** Rhythm checks should be less than 10 seconds and pulse checks only if an organized rhythm is observed
4. **DEFIBRILLATE** at recommended initial energy
5. **Resume CPR immediately following defibrillation. After 2 minutes,** pause CPR and check rhythm and pulse
 - If VF/pulseless VT, **resume CPR** and **DEFIBRILLATE** at second recommended energy as soon as defibrillator charged
 - If rhythm converted after defibrillation, treat per appropriate SOP
6. **If pulseless, resume CPR. INTUBATE. Establish IV/IO ACCESS.**
7. Treat patient with either amiodarone (preferred) **OR** lidocaine **only**. Do not combine therapies.

Amiodarone (Preferred)

Lidocaine

8. **EPINEPHRINE 1:10,000 1 mg IV/IO or 1:1000 2 mg ET.** After 2 minutes of **CPR, DEFIBRILLATE** at maximum energy.
9. **AMIODARONE 300 mg IV**
After 2 minutes of **CPR,**
DEFIBRILLATE at maximum energy.
10. **EPINEPHRINE 1:10,000 1 mg IV/IO or 1:1000 2 mg ET.** After 2 minutes of **CPR, DEFIBRILLATE** at maximum energy.
11. **AMIODARONE 150 mg IV as repeat dose.** After 2 minutes of **CPR,**
DEFIBRILLATE at maximum energy.
12. Repeat **EPINEPHRINE / CPR / DEFIBRILLATION** sequence q 2-3 minutes as long as pulseless rhythm persists.

7. **EPINEPHRINE 1:10,000 1 mg IV/IO or 1:1000 2 mg ET.** After 2 minutes of **CPR, DEFIBRILLATE** at maximum energy.
8. **LIDOCAINE 1 mg/kg IV/IO or 2 mg/kg ET.** After 2 minutes of **CPR, DEFIBRILLATE** at maximum energy.
9. **EPINEPHRINE 1:10,000 1 mg IV/IO or 1:1000 2 mg ET.** After 2 minutes of **CPR, DEFIBRILLATE** at maximum energy.
10. Repeat **LIDOCAINE / CPR / DEFIBRILLATION** sequence q 2-3 minutes up to 3 mg/kg.
11. Repeat **EPINEPHRINE / CPR / DEFIBRILLATION** sequence q 2-3 minutes as long as pulseless rhythm persists.

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For patients treated with **LIDOCAINE ONLY**

If VF converts to a supraventricular rhythm, bolus **LIDOCAINE 1 mg/kg IV/IO**, and rebolus **LIDOCAINE 0.5 mg/kg** after 10 minutes if not contraindicated to a maximum dose of 3 mg/kg.

Note:

- For any patient who experiences persistent return of spontaneous circulation (ROSC), refer to **INDUCTION OF HYPOTHERMIA FOR ROSC SOP**, p. 20
- **EPINEPHRINE 1:1000 preferred, but 1:10,000 2 mg ET also acceptable**
- If **EPINEPHRINE 1:1000** given ET, dilute with NS to a total of 10 mL
- **Flush all IV/IO push meds with 20 mL IV fluid**
- **Defibrillation sequence is CPR – Rhythm Check – CPR (defibrillator charging or medication administration) – Shock**

DEFIBRILLATOR ENERGY RECOMMENDATIONS

Defibrillator	Waveform	Adult Defib J	Adult Sync J	Peds Defib J / kg	Peds Sync J / kg
Monophasic		200-300-360	100-150-200-300-360	2 - 4	0.5 - 2
Medtronic ADAPTIV™	N/A	200-300-360	100-150-200-300-360	2 - 4	0.5 - 2
Philips SMART™	BTE	150	100-150-200		
Welch-Allyn	BTE	200-300-360	100-150-200-300-360		
Zoll	RB	120-150-200	100-120-150-200		

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ADULT ASYSTOLE / PULSELESS ELECTRICAL ACTIVITY

ALS

1. **CPR** until defibrillator available for rhythm check
 - **While patient is pulseless, CPR should only be interrupted for ventilation (until intubated), rhythm check or shock delivery.** Rhythm checks should be less than 10 seconds and pulse checks only if an organized rhythm is observed.
 - **After ET tube placed, give continuous CPR without pause for ventilation**
 - Search for possible treatable contributing causes:

Possible Cause	Field Treatment
Hypovolemia	IV fluid boluses
Hypoxemia	High FiO ₂ ventilations, confirm ET tube placement
Hypoglycemia	Check blood sugar and treat per Diabetic/Glucose Emergencies SOP , p. 29
Hypothermia	Active rewarming if hypothermic
Tamponade (cardiac)	IV fluid boluses to maximize preload
Tension Pneumothorax	Pleural decompression of affected side

2. Administer **EPINEPHRINE 1:10,000 1 mg IV/IO or 1:1000 2 mg ET**
 - Repeat q 3 minutes while pulseless
3. If pulse returns, refer to appropriate SOP
4. If patient remains in persistent asystole, consider withdrawal of resuscitation per **Withholding or Withdrawing of Resuscitative Efforts SOP**, p. 10

Notes:

- For any patient who experiences persistent return of spontaneous circulation (ROSC), refer to **INDUCTION OF HYPOTHERMIA FOR ROSC SOP**, p. 20
- **EPINEPHRINE 1:1000 preferred, but 1:10,000 2 mg ET also acceptable**
- If **EPINEPHRINE 1:1000** given ET, dilute with NS to a total of 10 mL
- **Flush all IV/IO push meds with 20 mL IV fluid**

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**INDUCTION OF HYPOTHERMIA FOR ROSC
For Adult Patients with Return Of Spontaneous Circulation (ROSC)**

Inclusion Criteria:

- Adult patient after out-of-hospital cardiac arrest:
 - Remains unconscious and unresponsive
 - **Return Of Spontaneous Circulation**
 - Able to maintain systolic BP > 90 mmHg with or without vasopressors
 - Airway secured with advanced airway
 - Presumed cardiac etiology for arrest

Relative Exclusions:

- Major head trauma or traumatic cardiac arrest
- Recent major surgery within 14 days
- Systemic infection
- Coma from other causes such as drug induced or overdose
- Active bleeding
- Hypothermia is not recommended for isolated respiratory arrest
- Frank pulmonary edema
- Suspected hypothermia already present $\leq 34^{\circ}\text{C}/93.2^{\circ}\text{F}$

Prehospital Induction of Hypothermia:

1. If patient meets the inclusion criteria with no relative exclusions, consider inducing prehospital hypothermia
2. Place ice packs around axilla, neck and groin
3. Begin transport. While enroute:
 - Rapid infusion of up to 2 liters of chilled normal saline IV/IO (optimally $4^{\circ}\text{C}/40^{\circ}\text{F}$) as available
 - Administer **Versed** (midazolam) **5 mg IV/IO** for shivering enroute if patients systolic BP > 100 mmHg. May repeat in 2 mg increments q 2 minutes up to 10 mg total as necessary.
4. Begin transporting to closest appropriate facility

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**ADULT PULMONARY EDEMA
(DUE TO HEART FAILURE)**

BLS/ALS

STABLE: alert, oriented, normotensive or hypertensive

1. **Initial Medical Care SOP**, p. 4
 - Place patient in High Fowler's position if systolic BP > 100 mmHg
2. Administer supplemental **OXYGEN at HIGH FiO₂** (12-15 LPM non-rebreather mask)
3. If systolic BP > 100 mmHg, administer **NTG 0.4 mg SL**

ALS

STABLE: alert, oriented, normotensive or hypertensive

4. Administer CPAP, if available, per System-specific procedure. If patient becomes unstable, remove CPAP and treat per appropriate SOP

CPAP Inclusion Criteria:

Respiratory Distress – 2 or more of the following:

- Retractions/accessory muscle use
- Respiratory rate > 25
- SPO₂ < 90%
- Exam consistent with pulmonary edema
- Bilateral or diffuse rales/crackles

5. If systolic BP > 100 mmHg, repeat **NTG 0.4 mg SL**; may repeat q five minutes if systolic BP > 100 mmHg

UNSTABLE: altered mental status or signs of hypoperfusion

1. **Initial Medical Care SOP**, p. 4. **HIGH FiO₂ or VENTILATION**
2. Pulse < 60 BPM: treat per **Bradycardias SOP**, p. 13
Pulse ≥ 60 BPM: treat per **Cardiogenic Shock SOP**, p. 22

Note:

Oral medications for erectile dysfunction (Viagra®, Levitra®, Cialis®, etc.) or pulmonary hypertension (Revatio™) may potentiate the effect of nitrates.

Consult Medical Control prior to administering NTG in these situations.

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ADULT CARDIOGENIC SHOCK

ALS

1. **Initial Medical Care SOP**, p. 4, with **HIGH FiO₂ or VENTILATION**
 - If hypovolemic and/or dehydrated and lungs are clear:
IV FLUID BOLUS IN 200 mL INCREMENTS x 2
 - Reassess breath sounds after each 200 mL increment IV fluid bolus
2. Treat underlying dysrhythmias per appropriate SOP
3. **DOPAMINE DRIP, dose dependent on clinical condition**
 - If pulse > 60 BPM, begin at 5 mcg/kg/min and increase q 3 min to achieve systolic BP ≥ 90 mmHg to a maximum of 20 mcg/kg/min

Calculation Chart

Body Weight		mcg / kg / min			
		5	10	15	20
Pounds	Kilograms	mcgtts/min ↓	mcgtts/min ↓	mcgtts/min ↓	mcgtts/min ↓
80	36	7	14	20	27
100	45	9	17	26	34
120	55	10	20	31	41
140	64	12	24	36	48
160	73	14	27	41	55
180	82	15	31	46	61
200	91	17	34	51	68
220	100	19	38	56	75
240	109	20	41	61	82
260	118	22	44	66	89
280	127	24	48	72	95
300	136	26	51	77	102

Individual dosage requirements may vary widely.
The above drip rates cover a dosage range of 5 – 20 mcg/kg/min.
This chart applies to a concentration of 1600 mcg/mL
(typically 800 mg/500 mL or 400 mg/250 mL D5W).

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ADULT AIRWAY OBSTRUCTION

BLS/ALS

1. Determine responsiveness and ability to speak
2. Position patient to open airway:
 - If unconscious: use head tilt/chin lift
 - If suspected C-spine injury: use modified jaw thrust
3. Assess breathlessness/degree of airway impairment
4. Monitor for:
 - Cardiac dysrhythmias and/or arrest

CONSCIOUS

ABLE TO SPEAK:

5. **Complete Initial Medical Care SOP**, p. 4:
 - Do not interfere with patient's own attempts to clear airway

CANNOT SPEAK:

5. 5 abdominal thrusts with patient standing or sitting
5 chest thrusts if patient in 2nd – 3rd trimester of pregnancy or morbidly obese
Repeat if no response
6. **If successful: complete Initial Medical Care SOP**, p. 4, and transport
7. **Still obstructed:**
While enroute to the hospital, continue any of the above steps you are reasonably able to perform.

UNCONSCIOUS

Note: Any time the efforts to clear the airway are successful, complete **Initial Medical Care SOP**, p. 4, and transport.

5. Attempt to ventilate. If obstructed:
 - Attempt to clear away in the presence of visible airway obstruction unless contraindicated
 - Consider suctionIf still obstructed and unconscious, repeat above steps until airway is clear

ALS

6. Visualize airway with laryngoscope and attempt to clear using Magill forceps and/or suction.
7. **Still obstructed:** Attempt forced ventilation
8. **Still obstructed:** **INTUBATE** and attempt to push foreign body into right mainstem bronchus, then pull tube back and ventilate left lung
9. **Still obstructed:** **Perform cricothyroidotomy; HIGH FiO₂ VENTILATION** and transport

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ADULT DRUG ASSISTED INTUBATION – ETOMIDATE

ALS

This SOP is to be used for patients > 15 years of age. **If ≤ 15 years of age, see Pediatric Drug Assisted Intubation – Versed SOP, p. 81.**

1. **Initial Medical Care SOP**, p. 4 - The following are situations which may require the use of this SOP to facilitate intubation:
 - Glasgow Coma Scale score of ≤ 8
 - Imminent respiratory arrest
 - Imminent tracheal/laryngeal closure due to severe edema secondary to trauma or anaphylaxis
 - Flail chest and/or open chest wounds with cyanosis and a respiratory rate < 10 or > 30

ALWAYS HAVE CRICOTHYROIDOTOMY EQUIPMENT AVAILABLE

2. Prepare patient and equipment for procedure:
 - Position patient in sniffing position unless contraindicated (i.e. C-spine injury)
 - Have suction with Yankauer or other rigid tip ready
 - Prepare all intubation and cricothyroidotomy equipment per System-specific procedure
 - **HIGH FiO₂ VENTILATION prior to and in-between steps of this procedure as able**

3. **BENZOCAINE spray** to posterior pharynx (0.5-1 second spray x 2, 30 seconds apart)
4. Administer **ETOMIDATE 0.6 mg/kg rapid IV/IO, max dose 40 mg**
5. Attempt oral or oral in-line intubation via System-specific procedure
6. After passing of tube, verify placement:
 - Adequate chest expansion bilaterally and symmetrically
 - Positive bilateral breath sounds
 - Negative epigastric sounds
 - End tidal CO₂ detector/esophageal detection device per System-specific procedure
7. Secure ET tube and reassess placement

POST INTUBATION SEDATION

9. Administer **VERSED** (midazolam) **2 mg increments IV/IO q 2 minutes** up to 10 mg total as necessary

If unsuccessful, continue HIGH FiO₂ VENTILATION, contact Medical Control, and be prepared for cricothyroidotomy per System-specific procedure.

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**USE OF AUTOMATIC TRANSPORT VENTILATORS (ATV)
(OPTIONAL EQUIPMENT)**

ALS

Indications for ATV use: Intubated adult apneic/non-traumatic full arrest patients that require ventilator support. Medical control must approve use on pediatric patients.

Contraindications for ATV use:

- patients with suspected pneumothorax or tension pneumothorax
- traumatic arrest patients

Required equipment:

- approved ATV connected to oxygen source
- intubation equipment including BVM and end tidal CO₂ detector

ATV procedure

1. Establish definitive airway
2. Assemble components of ATV and ensure proper working order
3. Determine proper tidal volume and respiratory rate using the following guidelines:
 - a. tidal volume: 10 mL/kg – when in doubt, round down
 - b. rate: 8-10 per minute (may increase to 12-20 per minute if perfusing rhythm returns)
4. Remove BVM and connect ATV to endotracheal tube. Continually assess for proper functioning of the ATV and return of spontaneous respirations.
5. If the patient should begin spontaneous respirations, stop the use of the ATV and assist ventilations with BVM.

Special Information:

- Specific ATVs are to receive System approval prior to their use.
- Providers using this equipment must follow the manufacturer's guidelines regarding the use, maintenance, cleaning and regular testing of the device.
- During patient care, providers shall chart the initial settings, and any subsequent changes on the patient care report.
- Specific ATV training programs are to be submitted and to receive approval from the respective EMS System. Initial annual training shall be documented.
- This is an optional piece of equipment. The purchase and maintenance is the responsibility of the provider. All ATVs shall be lightweight and rugged in design, capable of operating under common environmental conditions and extremes of temperature.

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**ADULT ACUTE ASTHMA
COPD WITH WHEEZING
REACTIVE (LOWER) AIRWAY DISEASE**

BLS

1. **Initial Medical Care SOP**, p. 4
2. If patient has prescribed inhaler, obtain time of last usage. If appropriate, assist patient with prescribed inhaler.
3. Reassess patient's respiratory status and begin transport
4. At discretion of Medical Control, additional doses of inhaler may be given
5. **ALBUTEROL 2.5 mg (3 mL) via nebulizer** per System-specific procedure
6. Consider possibility of congestive heart failure (CHF)/pulmonary edema in wheezing patient, if patient has a history of CHF, and/or pulmonary edema. If so, treat per **Pulmonary Edema SOP**, p. 21.

ALS

1. **Initial Medical Care SOP**, p. 4
2. **ALBUTEROL 2.5 mg (3 mL) or XOPENEX 1.25 mg (3 mL)** via nebulizer
3. Partial response: **repeat ALBUTEROL or XOPENEX** immediately
4. If **no response to ALBUTEROL or XOPENEX** or **patient in severe respiratory distress** AND age ≤ 50 and patient has no history of cardiac disease:
 - Administer **EPINEPHRINE 1:1000 0.3 mg IM**
 - ◆ If age > 50 and/or cardiac disease history, contact Medical Control
5. If imminent respiratory arrest, **INTUBATE** and use in-line **ALBUTEROL 2.5 mg (3 mL) or XOPENEX 1.25 mg (3 mL)**

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ADULT PARTIAL (UPPER) AIRWAY OBSTRUCTION / EPIGLOTTITIS

ALS/BLS

1. **Initial Medical Care SOP**, p. 4
2. Prepare intubation/cricothyroidotomy/suction equipment

ALS

STABLE: No cyanosis, effective air exchange

3. **NORMAL SALINE 6 mL via nebulizer**
4. If wheezing: **ALBUTEROL 2.5 mg (3 mL)** or **XOPENEX 1.25 mg (3 mL)** via nebulizer. **Do not delay transport waiting for a response.**

UNSTABLE: Cyanosis, marked stridor or respiratory distress, severely diminished or absent breath sounds, evidence of inadequate air exchange, bradycardic, altered mental status, retractions, ineffective air exchange, actual or impending respiratory arrest

Breathing:

3. **EPINEPHRINE 1:1000 3 mg (3 mL)** via nebulizer

Nonbreathing:

3. **HIGH FiO₂ VENTILATION**
 - Attempt **ENDOTRACHEAL INTUBATION x 1** if unable to ventilate
 - If intubation unsuccessful, perform **CRICOTHYROIDOTOMY** per System-specific procedure

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ADULT ALLERGIC REACTION / ANAPHYLAXIS

BLS/ALS

1. **Initial Medical Care SOP**, p. 4
2. Apply ice/cold pack to site
3. BLS: at the direction of Medical Control, administer one dose **EPINEPHRINE** auto-injector (EpiPen®)

ALS

Allergic reaction with systemic signs, i.e. wheezing, diffuse hives, or prior history of systemic reaction, without signs of hypoperfusion

4. Administer **BENADRYL** (diphenhydramine) **50 mg IM or slow IV/IO**. Max dose 50 mg.
5. Administer **EPINEPHRINE 1:1000 0.3 mg IM**. May repeat x 1 after 15 minutes if minimal response
 - If age > 50 years old and/or cardiac disease history, contact Medical Control prior to administration of **EPINEPHRINE**
6. If wheezing, consider **ALBUTEROL 2.5 mg (3 mL)** or **XOPENEX 1.25 mg (3 mL)** per **Acute Asthma/COPD with Wheezing/Reactive (Lower) Airway Disease SOP**, p. 26

ALS

Anaphylaxis: multisystem reaction with signs of hypoperfusion; altered mental status or severe respiratory distress/wheezing/hypoxia

4. If signs of hypoperfusion, **IV/IO FLUID BOLUS in 200 mL increments**
5. Administer **EPINEPHRINE 1:10,000 0.5 mg slow IV/IO** or **1:1000 1 mg ET** or **EPINEPHRINE 1:1000 0.5 mg IM**
 - May repeat q 3 minutes
6. Administer **BENADRYL** (diphenhydramine) **50 mg slow IV/IO**. If no IV, give IM. Max dose 50 mg.
7. Consider **ALBUTEROL** or **XOPENEX** per **Acute Asthma/COPD with Wheezing/Reactive (Lower) Airway Disease SOP**, p. 26
8. Consider **DOPAMINE** per **Cardiogenic Shock SOP**, p. 22, for refractory hypotension

Note

7. **EPINEPHRINE** may be given IM if IV/IO access delayed.

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ADULT DIABETIC / GLUCOSE EMERGENCIES

BLS/ALS

1. **Initial Medical Care SOP**, p. 4
 - Obtain medication history and last oral intake
 - Vomiting and seizure precautions
2. Obtain and record blood glucose level, if available
3. If blood sugar < 60 and patient is alert with intact gag reflex, consider the administration of **ORAL GLUCOSE**

ALS

Blood glucose < 60 or signs and symptoms of insulin shock/hypoglycemia

4. Administer **DEXTROSE 50% 25 g (50 mL) IV**. If partial or no improvement, repeat **DEXTROSE 50% 25 g (50 mL) IV** after 5 minutes

OR

During critical drug shortages of dextrose 50%, administer **DEXTROSE 10% 12.5 g (125 mL) IV**.

5. If unable to start IV, administer **GLUCAGON 1 mg IM**

Blood sugar > 180 with signs and symptoms of hyperglycemia/ketoacidosis

4. **IV FLUID BOLUS** in consecutive 200 mL increments, unless contraindicated

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**ADULT SYNCOPE / NEAR SYNCOPE
Non-traumatic loss of consciousness**

BLS/ALS

1. **Initial Medical Care SOP**, p. 4
2. Obtain and record blood glucose level. If < 60, treat per **Diabetic/Glucose Emergencies SOP**, p. 29
3. Anticipate underlying etiologies and treat according to appropriate SOP:
 - Metabolic **Diabetic/Glucose Emergencies**, p. 29, or **Toxicologic Emergencies SOP**, p. 34
 - Cardiac Appropriate SOP, p.13-19,22
 - Hypovolemic Fluid resuscitation
 - CNS Disorder See appropriate Medical or Trauma SOP
 - Vasovagal **Initial Medical Care SOP**, p. 4

BLS

3. Expeditious transport. Contact Medical Control enroute

ALS

STABLE: alert, oriented, normotensive

- Special considerations:
 - Monitor ECG continually enroute
 - Consider 12-lead ECG
 - Document changes in GCS

UNSTABLE: altered mental status or signs of hypoperfusion

If lungs clear and hypoperfusing:

4. **IV FLUID BOLUS in 200 mL increments**

If indicated by decreasing sensorium and pinpoint pupils, depressed respirations, and possible history of narcotic/synthetic narcotic ingestion:

4. **Administer NARCAN (naloxone) 1 mg IV/IN. Repeat dose 0.5 mg IV/IN PRN q 2 minutes up to max dose 2 mg if transient response observed**

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**ADULT SEIZURES / STATUS EPILEPTICUS
Non-traumatic origin**

BLS/ALS

1. **Initial Medical Care SOP**, p. 4; special considerations:
 - Clear and protect airway. Vomiting/aspiration precautions.
 - Protect the patient from injury. Do not place anything in mouth if seizing.
 - Position patient on side unless contraindicated
2. Obtain and record blood glucose level, if available. If < 60 treat per **Diabetic/Glucose Emergencies SOP**, p. 29

ALS

If actively seizing:

3. Administer **VERSED** (midazolam) **2 mg slow IV increments q 2 minutes up to 10 mg total as necessary.**
4. If unable to start IV:
 - Administer **VERSED** (midazolam) **10 mg in 2 mL IN**
Or
 - Administer **VERSED** (midazolam) **IM**
 - ◆ < 70 kg = 5 mg IM
 - ◆ ≥ 70 kg = 10 mg IM

Note: If suspected that seizure is secondary to narcotic overdose, see Toxicologic Emergencies SOP, p. 34

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ADULT STROKE

BLS/ALS

1. **Initial Medical Care SOP**, p. 4
 - Limit scene time
 - C-spine control for unconscious patient with suspected trauma
 - Obtain and record time when last at baseline/**Last Known Well**
 - Obtain and record blood glucose level. If < 60, treat per **Diabetic/Glucose Emergencies SOP**, p. 29
2. Protect airway, suction as necessary.
3. Maintain head and neck in neutral alignment. DO NOT flex neck. If systolic BP > 90 mmHg, elevate head of bed 15-30°.
4. Monitor and record neurological status using GCS and note any changes.
5. Assess patient using the Cincinnati Prehospital Stroke Scale (CSS) and document new findings:
 - A. New Facial Droop (have patient show teeth or smile)
 - B. New Arm Drift (patient closes eyes and hold both arms out)
 - C. New Speech Deficit (have patient say "You can't teach an old dog new tricks")
6. If the patient has an abnormal Cincinnati Prehospital Stroke Scale they should be transported to the closest Primary Stroke Center (PSC).
7. Transport patients with an unobtainable or normal Cincinnati Prehospital Stroke Scale with any of the following symptoms to the closest PSC:
 - New onset of sudden or persistent language deficiency
 - New onset of sudden unilateral numbness or weakness
 - New onset of severe sudden headache with vomiting with or without severe hypertension (systolic BP > 200 mmHg)
 - New onset of sudden and persistent alteration of mental status
 - New onset of severe and sudden loss of balance/new onset ataxia
 - New onset of sudden visual field loss in one or both eyes

ALS

Consider 12-lead ECG

8. **INTUBATE** if GCS score ≤ 8
9. Establish IV, limit IV attempts to 2
10. If seizure activity, **refer to Seizures/Status Epilepticus SOP**, p. 31
11. Call Medical Control early and communicate time when patient was last at baseline/**Last Known Well** (if known)

Transport to the closest Primary Stroke Center for continuation of stroke care.

**Illinois Region 8 Emergency Medical Services
Central DuPage, Edward, Good Samaritan, Loyola EMS Systems
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ADULT ACUTE ABDOMINAL PAIN

BLS/ALS

1. **Initial Medical Care SOP**, p. 4

STABLE: alert, oriented, normotensive

2. Consider pain management:
 - If systolic BP > 100 mmHg, administer **FENTANYL 1 mcg/kg SLOW IV/IM, max first dose 100 mcg. Repeat dose 0.5 mcg/kg SLOW IV/IM in 5 min, max repeat dose 50 mcg.**
 - Patients > 65 years old and if systolic BP > 100 mmHg, administer **FENTANYL 0.5 mcg/kg SLOW IV/IM, max dose 50 mcg. Repeat dose 0.25 mcg/kg SLOW IV/IM in 5 min, max repeat dose 25 mcg.**
3. If patient is experiencing nausea or vomiting, consider administering **ZOFRAN** (ondansetron) **ODT 4 mg tab or 4 mg slow IV** x 1 dose only.

UNSTABLE: altered mental status and/or signs of hypoperfusion

4. Establish large bore IV enroute. Administer **IV FLUID BOLUS of 200 mL**, repeat as necessary. Titrate infusion rate based on clinical presentation.
5. If suspected abdominal aortic aneurysm or ectopic pregnancy, early aggressive fluid resuscitation should be considered.
6. If signs and symptoms of shock present, establish second IV.

**Illinois Region 8 Emergency Medical Services
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ADULT TOXICOLOGIC EMERGENCIES

BLS/ALS

STABLE: alert, oriented, normotensive

1. **Initial Medical Care SOP**, p. 4
 - HazMat precautions

ALS

UNSTABLE: altered mental status, airway compromise, and/or hypoperfusion

1. **Initial Medical Care SOP**, p. 4
 - HazMat precautions
2. GCS score \leq 8 and evidence of airway compromise, **INTUBATE**. The use of Alternate Airway is contraindicated in ingestion of caustic substance.
3. Unknown etiology with respiratory compromise:
Administer NARCAN (naloxone) 1 mg IV/IN. Repeat dose 0.5 mg IV/IN PRN q 2 minutes up to max dose 2 mg if transient response observed

NARCOTIC OVERDOSE

For known narcotic overdose with GCS score \leq 8:

4. Protect airway, **HIGH FiO₂ or VENTILATION**
5. Consider **NARCAN (naloxone) 1 mg IV/IN, repeat dose 0.5 mg IV/IN PRN q 2 minutes up to max dose 2 mg if transient response observed** before intubation if airway is able to be controlled and ventilations are effective.

CYCLIC ANTIDEPRESSANT OVERDOSE

Hypoperfusion associated with wide QRS complex (possible cyclic ingestion)

4. Administer **NORMAL SALINE 1 L IV bolus**
5. Administer **SODIUM BICARBONATE 8.4% 1 mEq/kg IV**

BETA-BLOCKER / CALCIUM CHANNEL BLOCKER OVERDOSE

Hypoperfusion associated with bradycardia (possible beta blocker or calcium channel blocker ingestion)

4. Administer **GLUCAGON 1 mg slow IV**. May repeat x 1.
5. If no response consider transcutaneous pacing (TCP).

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ORGANOPHOSPHATE POISONING - excessive body secretions

- | | | |
|--|-----------|---|
| D – Diarrhea | OR | S alivation (excessive production of saliva) |
| U – Urination | | L acrimation (excessive tearing) |
| M – Miosis | | U rination (uncontrolled urine production) |
| B – Bronchorrhea / Bronchospasm | | D efecation (uncontrolled bowel movement) |
| B – Bradycardia | | G astrointestinal distress (cramps) |
| E – Emesis | | E mesis (excessive vomiting) |
| L – Lacrimation | | B reathing Difficulty |
| S – Salivation | | A rrhythmias |
| | | M iosis (pinpoint pupils) |

4. Administer **ATROPINE 2 mg rapid IV/IO**
Repeat **q 3** minutes until condition improves (no dose limit)

CYANIDE POISONING

4. For known or suspected cyanide poisoning; **AMYL NITRITE capsule broken and taped inside an NRB mask or BVM with High FiO₂**. Begin transport while replacing capsules **q 1 minute x 12 capsules**.
- **INTUBATE only** if patient apneic after all 12 capsules used.
- OR**
4. **If available, may use HYDROXOCOBALAMIN (CYANOKIT) as directed.** Note: these will not be exchanged at the hospital.
5. If hypotensive or pulseless, **NORMAL SALINE 1 L IV bolus**. If pulseless, refer to appropriate **Adult VF/Pulseless VT SOP**, p. 17 or **Adult Asystole/PEA SOP**, p. 19.

CARBON MONOXIDE POISONING

4. **HIGH FiO₂ or VENTILATION**
- Consider cyanide poisoning
 - Do not rely on pulse oximetry
 - Keep patient as quiet as possible to minimize tissue oxygen demand

SUSPECTED CLUB DRUG OVERDOSE

4. Contact Medical Control for suspected use of club drugs

<u>Narcotics:</u>	Morphine, Demerol (meperidine), heroin, methadone, codeine, Duragesic (fentanyl), Vicodin/Lortab (APAP and hydrocodone), hydrocodone, Dilaudid (hydromorphone), Percocet (oxycodone and APAP), OxyContin (oxycodone)
<u>Cyclic Antidepressants:</u>	Elavil (amitriptyline), Norpramin (desipramine), Tofranil (imipramine), Pamelor (nortriptyline), Sinequan (doxepine)
<u>Benzodiazepines:</u>	Halcion (triazolam), Ativan (lorazepam), Restoril (temazepam), Versed (midazolam), Valium (diazepam), Xanax (alprazolam), Librium (chlordiazepoxide), Klonopin (clonazepam), Dalmane (flurazepam), Rohypnol (flunitrazepam), Ambien (zolpidem)
<u>Beta Blockers:</u>	Inderal (propranolol), Corgard (nadolol), Lopressor (metoprolol), Tenormin (atenolol), timolol
<u>Calcium Channel Blockers:</u>	Cardizem (diltiazem), Procardia (nifedipine), Calan/Adalat/Isoptin (verapamil), Norvasc (amlodipine)
<u>Club Drugs:</u>	GHB (Liquid G, Liquid Ecstasy), ketamine (Special K, Vitamin K, Super K), MDMA (Ecstasy, XTC, ADAM, E), Foxy Methoxy, AMT, Coricidin (Triple-C)
<u>Poison Center 1-800-222-1222</u>	

**Illinois Region 8 Emergency Medical Services
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SNAKEBITE / ENVENOMATION

BLS/ALS

Scene Size-Up

1. Assess scene and personal safety
2. Use standard precautions on all patients

1. Initial Medical Care SOP, p. 4

- Secure and maintain patent airway
- **High FiO₂**
- Check pulse and control hemorrhage as indicated
- Assess AVPU and monitor neurological status
- Apply sterile gauze dressing over wound
- Remove all jewelry and/or constrictive clothing

2. Initial Medical Care SOP, p. 4; special considerations

- Allow patient to lie flat and avoid as much movement as possible. Keep patient calm. Allow the bitten limb to rest at level of the patient's heart.
- Medical Control should be contacted immediately whenever snakebite is suspected.
 - i. Notify Medical Control if antivenin is available at the scene.
 - ii. Request that Medical Control contact toxicologist/Poison Center ASAP at **1-800-222-1222**
- Notify Medical Control of type of snake. If safe to do so, obtain photo of snake for identification.
- If compression wrap has been applied by special services staff (e.g. animal control or zoological park), do not remove.
- DO NOT apply ice, heat, tourniquet or incise wound.

ALS

3. Observe for respiratory compromise. Provide intervention, if necessary, per appropriate SOP.
4. Evaluate cardiac rhythm. Treat dysrhythmias per appropriate SOP.
5. Establish two large bore IVs of normal saline in unaffected extremity.
6. Use direct pressure to control hemorrhage if present. Avoid elevation of extremities.
7. Reassess frequently for mental status changes.

Note: If transport time > 15 minutes, consider contacting specialty transport. If antivenin is available, bring to ED with patient.

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ADULT NERVE GAS AUTO-INJECTOR GUIDELINES

Purpose:

To provide Illinois EMS agencies with guidelines on the appropriate use of **Mark 1** kits (or equivalent). The **Mark 1** kit contains antidotes to be used in instances of exposure to nerve agents (Sarin, Soman, Tabun, VX) or to organophosphate agents (Iorsban, Cygon, Delnav malathion, Supracide parathion, Carbopenthion).

Equipment:

Each **Mark 1** kit consists of two auto-injectors containing:

- atropine sulfate (**atropine**) 2 mg in 0.7 mL
- pralidoxime chloride (**2 PAM**) 600 mg in 2 mL
- other equivalent kit as available

Key Provisions:

Only those licensed EMS providers that are governed by the State of Illinois EMS Act (210 ICLS 50) are authorized by any EMS Medical Director to utilize the special equipment and medications needed in WMD incidents, including **Mark 1** auto-injectors. When appropriate conditions warrant, contact Medical Control. Other organized response teams not governed by the EMS Act may use the **Mark 1** auto-injectors on themselves or other team members when acting under the Illinois Emergency Management Agency Act (20 ILCS 3305).

Guidelines:

1. To utilize these kits, you must be an EMS agency or provider within an Illinois EMS System and participate within an EMS disaster preparedness plan.
2. The decision to utilize the **Mark 1** antidote is authorized by this State protocol.
3. At a minimum, an EMS provider must be an Illinois EMT at any level, including First Responder with additional training in the use of the auto-injector.
4. **THE MARK 1 KIT IS NOT TO BE USED FOR PROPHYLAXIS.** The injectors are antidotes, not a preventative device. The **Mark 1** kit may be self-administered if you become exposed and are symptomatic. Exit immediately to the Safe Zone for further medical attention.
5. Use of the Mark 1 kit is to be based on signs and symptoms of the patient. The suspicion or identified presence of a nerve agent is not sufficient reason to administer these medications.
6. Atropine may be administered IV or IM in situations where **Mark 1** kits are not available.
7. If available, diazepam (Valium) or midazolam (Versed) may be cautiously given under Medical Control direction or by Standard Operating Procedures, if convulsions are not controlled
8. When the nerve agents have been ingested, exposure may continue for some time due to slow absorption from the lower bowel. Fatal relapses have been reported after initial improvement. Continual medical monitoring and transport is mandatory.

If dermal exposure has occurred, decontamination is critical and should be done with standard decontamination procedures. Patient monitoring should be directed to the signs and symptoms, as with all nerve or organophosphate exposures. Continual medical monitoring and transport is mandatory.

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ADULT NERVE GAS AUTO-INJECTOR GUIDELINES (Continued)

Mnemonic for Nerve Agent exposure:

- S**alivation (excessive production of saliva)
- L**acrimation (excessive tearing)
- U**rination (uncontrolled urine production)
- D**efecation (uncontrolled bowel movement)
- G**astrointestinal distress (cramps)
- E**mesis (excessive vomiting)
- B**reathing difficulty
- A**rrhythmias
- M**iosis (pinpoint pupils)

EXPOSURE	CLINICAL	TREATMENT
No signs or symptoms	None	Remove to Safe Zone, decontaminate, observe and transport
Mild Exposure	SOB, wheezing, runny nose	One Mark 1 kit or atropine 2 mg IV/IM and 2-PAM 600 mg IM (1 gram IV)
Moderate Exposure	Vomiting, diarrhea, pinpoint pupils, drooling	1-2 Mark 1 kit or atropine 2-4 mg IV/IM and 2-PAM 600-1200 mg IM (1 gram IV)
Severe Exposure	Unconsciousness, paralysis, cyanosis, seizures	Three Mark 1 kits or atropine 6 mg IV/IM and 2-PAM 1800 mg IM or 2-PAM 1 gram IV repeated twice at hourly intervals. Valium or Versed per Medical Control.

2-PAM solution needs to be prepared from the ampule containing 1 gram of desiccated 2-PAM: inject 3 mL of saline, 5% dextrose, or distilled or sterile water into ampule and shake well. The resulting solution is 3.3 mL of 300 mg/mL.

**Illinois Region 8 Emergency Medical Services
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RADIATION INJURIES

BLS/ALS

- 1. FOLLOW DIRECTIONS OF THE HAZMAT COMMAND ON SCENE.**
2. Patient management per appropriate SOP.
3. Contact Medical Control, as soon as practical, and indicate the following:
 - number of victims
 - medical status of victims
 - source of radiation
 - amount and kinds of radioactivity present

For assistance, 24-hour hotline number is available:
Illinois Emergency Management Agency: **1-800-782-7860**

**Illinois Region 8 Emergency Medical Services
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**ADULT CHRONIC RENAL FAILURE
DIALYSIS PATIENT EMERGENCIES**

BLS/ALS

- Do not take BP in same arm as shunt or fistula
- Control obvious hemorrhage from shunt or fistula (arterial bleeding)

ALS

- **IVs should not** be attempted on the extremity with the shunt or fistula
- When emergencies occur during dialysis, the staff may leave the access needles in place, clamping the tubing. If this is the only accessible site, request their assistance to connect your IV tubing.

ALS

UNSTABLE: altered mental status or signs of hypoperfusion

1. **Initial Medical Care SOP**, p. 4
2. If lungs clear, administer **IV FLUID BOLUS of 200 mL**. May repeat if lungs clear.
3. If widened QRS complex, administer:
 - **SODIUM BICARBONATE 1 mEq/kg IV/IO**
4. If unresponsive to IV fluid bolus or pulmonary edema present, treat per **Cardiogenic Shock SOP**, p. 22

CARDIAC ARREST

1. **Initial Medical Care SOP**, p. 4
2. Treat per appropriate cardiac arrest SOP
 - In addition to SOP medications, administer **SODIUM BICARBONATE 1 mEq/kg IV/IO**

**Illinois Region 8 Emergency Medical Services
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ADULT HEAT EMERGENCIES

HEAT CRAMPS OR TETANY

BLS/ALS

1. **Initial Trauma Care SOP**, p. 53
2. Move patient to a cool environment. **DO NOT** massage cramped muscles.
3. If patient awake, alert, and has intact gag reflex, may give oral fluids.

HEAT EXHAUSTION / HEAT STROKE

BLS/ALS

1. Remove as much clothing as possible to facilitate cooling.
2. Initiate rapid cooling:
 - Cold packs to lateral chest wall, groin, axilla, carotid arteries, temples, behind knees
 - Sponge or mist with cool water and fan, or cover body with wet sheet and fan body
 - Discontinue cooling if shivering occurs
3. Check blood glucose level if available. If < 60, treat per **Diabetic/Glucose Emergencies SOP**, p. 29

ALS

4. **IV FLUID BOLUS** in 200 mL increments
5. If seizures occur, refer to **Seizures/Status Epilepticus SOP**, p. 31

**Illinois Region 8 Emergency Medical Services
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**ADULT COLD EMERGENCIES
Frostbite and Hypothermia**

BLS/ALS

1. **Initial Trauma Care SOP**, p. 53

FROSTBITE:

2. Rapidly rewarm frozen areas with tepid water. Hot packs wrapped in a towel may be used. **DO NOT RUB. DO NOT** thaw if there is a chance of refreezing.
3. **HANDLE SKIN LIKE A BURN.** Protect with light, dry sterile dressings. Do not let affected skin surfaces rub together.
4. If systolic BP > 100 mmHg, administer **FENTANYL 1 mcg/kg SLOW IV/IM, max first dose 100 mcg. Repeat dose 0.5 mcg/kg SLOW IV/IM in 5 min, max repeat dose 50 mcg.**
 - Patients > 65 years old and if systolic BP > 100 mmHg, administer **FENTANYL 0.5 mcg/kg SLOW IV/IM, max dose 50 mcg. Repeat dose 0.25 mcg/kg SLOW IV/IM in 5 min, max repeat dose 25 mcg.**

MILD / MODERATE HYPOTHERMIA: conscious or altered sensorium, shivering

BLS/ALS

2. Check blood glucose level if available. If < 60, treat per **Diabetic/Glucose Emergencies SOP**, p. 29
3. Rewarm patient:
 - Place patient in a warm environment. Remove wet clothing.
 - Apply hot packs, wrapped in towels to axilla, groin, neck, thorax. Wrap patient in blankets.

SEVERE HYPOTHERMIA: Poor muscle control or rigidity, simulating rigor mortis. There will be **no shivering.** **Sensorium** - confused, withdrawn, disoriented or comatose.

BLS/ALS

◆ **TRIPLE ZERO CANNOT BE CONFIRMED IN THE FIELD ON THESE PATIENTS** ◆

2. Check pulse for 30-60 seconds. Anticipate bradycardia.
3. Begin **CPR** if pulseless.
4. **ALS:** If defibrillation indicated by rhythm, **DEFIBRILLATE** at 360 J (or initial biphasic shock at recommended energy) x **1 only and resume CPR.**
 - Subsequent defibrillation attempts, and all medications, should be delayed until core temperature has been raised to ≥ 86° F by active rewarming
5. **ALS: INTUBATE** if indicated.
6. **ALS: Establish vascular access IV/IO.**
7. Transport patient in supine position, very gently to avoid precipitating VF.

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ADULT PSYCHOLOGICAL EMERGENCIES

BLS/ALS

1. Assess **SCENE AND PERSONAL SAFETY**. Call law enforcement personnel to scene, if needed. Above all, **DO NOTHING TO JEOPARDIZE YOUR OWN SAFETY**.
2. **Initial Medical Care SOP**, p. 4, as situation warrants.
 - Determine and document if patient is a threat to self or others, or if patient is unable to care or provide for self. Do not leave patient alone.
 - Protect patients from harm to self or others.
 - ALS may be waived in favor of basic transport, if patient is uncooperative or dangerous.
3. Verbally attempt to calm and reorient the patient to reality as able. Do not participate in patient delusions or hallucinations.
4. If patient is combative, use restraints as necessary per System-specific policy.
5. Consider medical etiologies of behavior disorder and treat according to appropriate SOP:
 - Hypotension
 - Hypoxia
 - Substance abuse/Overdose
 - Neurologic disease (stroke, intracerebral bleed, head injury, etc.)
 - Metabolic imbalance (hypoglycemia, thyroid disease, etc.)
 - Seizure/Postictal
6. Consult Medical Control from the scene in **ALL** instances where refusal of transport is being considered.

ALS

7. For severe anxiety or agitation:
 - Administer **VERSED** (midazolam) **2 mg increments IV** q 2 minutes up to 10 mg total as necessary.
 - May administer **VERSED** (midazolam) **IM** if unable to start IV
 - ◆ **< 70 kg = 5 mg IM**
 - ◆ **≥ 70 kg = 10 mg IM**

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**REGION 8 TRAUMA CENTER SYSTEM
FIELD TRIAGE GUIDELINES**

General Guidelines

It is **MANDATORY** for Medical Control to notify the Trauma Surgeon immediately upon receiving the field report, if one of the following conditions exist:

- **Sustained hypotension on two consecutive measurements five minutes apart**
 - **Adult systolic BP \leq 90 mmHg or lack of a radial pulse**
 - **Pediatric systolic BP \leq 80 mmHg**
- **Cavity penetration of torso or neck**

The following patients or those who in the opinion of the American College of Surgeons Committee on Trauma are known to have an increased mortality/morbidity, if not treated at a Trauma Center. They should, therefore, be classified as trauma patients. These patients require transport to the nearest Trauma Center.

The decision to triage to the nearest trauma center or directly to a Level I trauma center remains with Medical Control, as does aeromedical evacuation.

Conditions that are marked with a star (★) and in **bold letters** in the following criteria should be **considered** for direct bypass to a Level I Trauma Center. If the transport time to a Level I is greater than 25 minutes, the patient should go to a Level II Trauma Center.

Patients being bypassed to a Trauma Center need to have an adequate airway (i.e. respirations 12-35 per minute, intubated, cricothyroidotomy). If an airway cannot be established, the patient should be taken to the closest comprehensive Emergency Department.

EMS providers should notify Medical Control ASAP if the need for Level I bypass or specialty services exists. Once approved, the transporting unit should call the receiving hospital directly for notification.

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**REGION 8 TRAUMA CENTER SYSTEM
FIELD TRIAGE GUIDELINES**

I. Physiologic Factors

- A. Adult Trauma Score of 9 or less
- B. Airway difficulties requiring intubation or other interventions at the scene.
- C. Trauma with altered respiratory rate (< 12 or > 35 per minute)
- D. Any multiple trauma patient with signs of hypoperfusion

II. Anatomic Factors

- ★ A. Head, face, and eye
 - ★ 1. **HEAD INJURY WITH PERSISTENT UNCONSCIOUSNESS OR FOCAL SIGNS (i.e. SEIZURES, POSTURING, UNABLE TO RESPOND TO SIMPLE COMMANDS)**
 - ★ 2. **PENETRATING INJURY TO THE NECK**
 - 3. Head injury with loss of consciousness or Glasgow Coma Scale score of ≤ 10
 - 4. Traumatic and chemical eye injuries
 - 5. Maxillofacial trauma
- ★ B. Chest
 - 1. **GUNSHOT WOUND OR OTHER PENETRATING INJURY TO THE CHEST**
 - 2. Blunt chest trauma (significant pain and/or obvious external signs).
 - 3. Flail chest and unstable chest wall
- ★ C. Abdomen
 - ★ 1. **GUNSHOT WOUND TO THE ABDOMEN**
 - ★ 2. **OTHER PENETRATING INJURY TO THE ABDOMEN, GROIN OR BUTTOCKS**
 - 3. Blunt abdominal trauma (significant pain and/or obvious external signs)
- ★ D. Spinal Cord
 - 1. **SPINAL CORD INJURY WITH PARALYSIS, PARESTHESIA OF EXTREMITIES AND/OR SENSORY LOSS**
 - 2. Any suspected spinal cord injury in the absence of neurological deficit
- ★ E. Extremities.
 - ★ 1. **EXTREMITY TRAUMA: MANGLED, CRUSHED, OR DEGLOVED WITH NEUROVASCULAR COMPROMISE**
 - ★ 2. **TRAUMATIC AMPUTATION PROXIMAL TO THE WRIST OR ANKLE**
 - 3. Limb paralysis and/or sensory deficit proximal to the wrist
 - 4. Multiple orthopedic injuries (> 1 long bone fracture)

III. Deceleration Injury

- A. High energy dissipation / rapid deceleration with blunt chest or abdominal injury
- B. Falls ≥ 20 feet with the adult patient
- C. Falls ≥ 3 times the height of a pediatric patient

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**REGION 8 TRAUMA CENTER SYSTEM
FIELD TRIAGE GUIDELINES**

IV. Motor Vehicle Crashes

- A. Extrication time \geq 20 minutes
- B. Vehicle passenger space invaded by \geq 12 inches
- C. Ejection
- D. Fatality at the scene within the same motor vehicle
- E. Rollover \geq 180° spin
- F. Child \leq 15 years struck by car
- G. Child \leq 8 years old involved in any MVC without age-appropriate restraint (under age 4 or **< 40 pounds** requires a car seat)
- H. Motorcycle crash $>$ 20 MPH with separation of rider from bike

V. Major Burns

- A. 10% total body surface area of 2nd and 3rd degree burns
- B. Any burn patient with obvious head, neck, or airway involvement

VI. Pediatric Trauma with one or more of the following:

- ★ A. **HEAD TRAUMA WITH PERSISTENT ALTERED LEVEL OF CONSCIOUSNESS**
- ★ B. **OBVIOUS CHEST OR ABDOMINAL TRAUMA, EITHER PENETRATING OR BLUNT**
- C. Pediatric Trauma Score of \leq 8
- D. Child \leq 15 years old, struck by motor vehicle
- E. Child involved in an MVC not appropriately restrained
 - Rear-facing seat from birth to 2 years old or up to **20 lbs**
 - Forward-facing toddler seat from 2 - 4 years or up to **65 lbs**
 - Booster seat from 4 - 8 years or up to 4' 9" tall
 - Safety belts from 8 - 15 years or at least 4'9" tall

VII. Pregnant Trauma Patients

- A. The pregnant patient \geq 20 weeks gestation
- B. Pregnant patient who meets any other trauma criteria

VIII. Blunt and Penetrating Traumatic Arrests are at the discretion of Medical Control

- A. Blunt traumatic arrest patients: **may consider** withholding resuscitative efforts. Refer to **Withholding or Withdrawing Resuscitative Efforts SOP**, p. 10

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MULTIPLE VICTIM INCIDENT (MVI)

A multiple patient incident exists when:

- responding EMS providers can mitigate life-threats using standard operating procedures, **and**
- the responding EMS agency is able to acquire adequate numbers of responders and ambulances to provide normal levels of care and transportation, **and**
- the hospitals that can be reached within the normally accepted transport time can provide adequate patient stabilization until definitive care can be provided. This may require receiving hospitals to activate their internal disaster plans, even though it is not necessary to implement the mass casualty response in the field.

Practical application:

- No triage tags necessary (but may be used)
- Ambulance transport as usual
- Medical Control radio contact by each transporting ambulance as usual
- Patient Care Reports to be completed as usual

1. First EMS Unit on scene:

- One responder begins scene size-up and calls for additional resources
- Other responder(s) begin(s) primary triage using the START or JumpSTART triage process
- Initial contact with Medical Control at the closest hospital and report the nature of the incident and potential number of victims per System-specific policy.

2. Scene command decision:

- Begin transport of 2 of the most critical (red) patients to each of the nearest hospitals (adhering to trauma triage criteria for Level I and II transports) to help clear the scene.
- Transporting EMS providers shall contact the receiving hospital for on-line Medical Control.

3. Remaining patient disposition:

- **Joint decision with Medical Control:** When the number of ill or injured persons exceeds the transport of 2 (of the most critical) patients to each of the nearest hospitals, contact the closest Resource or Associate Hospital to coordinate remaining patient distribution. Inform them about the nature of the incident, the number of patients and their acuity levels.
 - ◆ The hospital will assess receiving hospital status and relay receiving availability to scene.
 - ◆ Make all attempts to evenly distribute remaining patients to local hospitals; do not overburden one facility.
 - ◆ While it is preferable to keep families together, it is not always in the best interest of patient care to do so.
 - ◆ The hospitals will consider time of day, hospital resources available, patient acuity and trauma triage criteria in determining patient destinations.
 - ◆ Follow System-specific policy regarding contact of EMS Medical Director and/or EMS System Coordinator.

4. Complete a patient care report on each patient transported.

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MASS CASUALTY INCIDENTS / DISASTERS (MCI)

Mass Casualty Incidents in Region VIII are governed by MABAS Divisions and County or System Mass Casualty Plans. Roles will vary. It is recommended that at least the following are designated for EMS purposes: Triage, Treatment and Transportation Groups.

A mass casualty incident exists when the:

- number of patients and the nature of their injuries make the normal level of stabilization and care unachievable; **and/or**
- resources that can be brought to the field within primary and secondary response times are insufficient to manage the scene under normal operating procedures; **and/or**
- stabilization capabilities of area hospitals are insufficient to handle all the patients.

Practical application:

- Triage tags are to be used on all patients
- May transport more than one patient in each ambulance
- No radio reports to hospitals; treat per SOPs
- No individual run reports necessary

1. First EMS unit on scene establishes temporary scene command:

- One responder begins scene size up and calls for additional resources
- Other responder(s) begin(s) primary triage using START or JumpSTART and SMART Tag™ systems

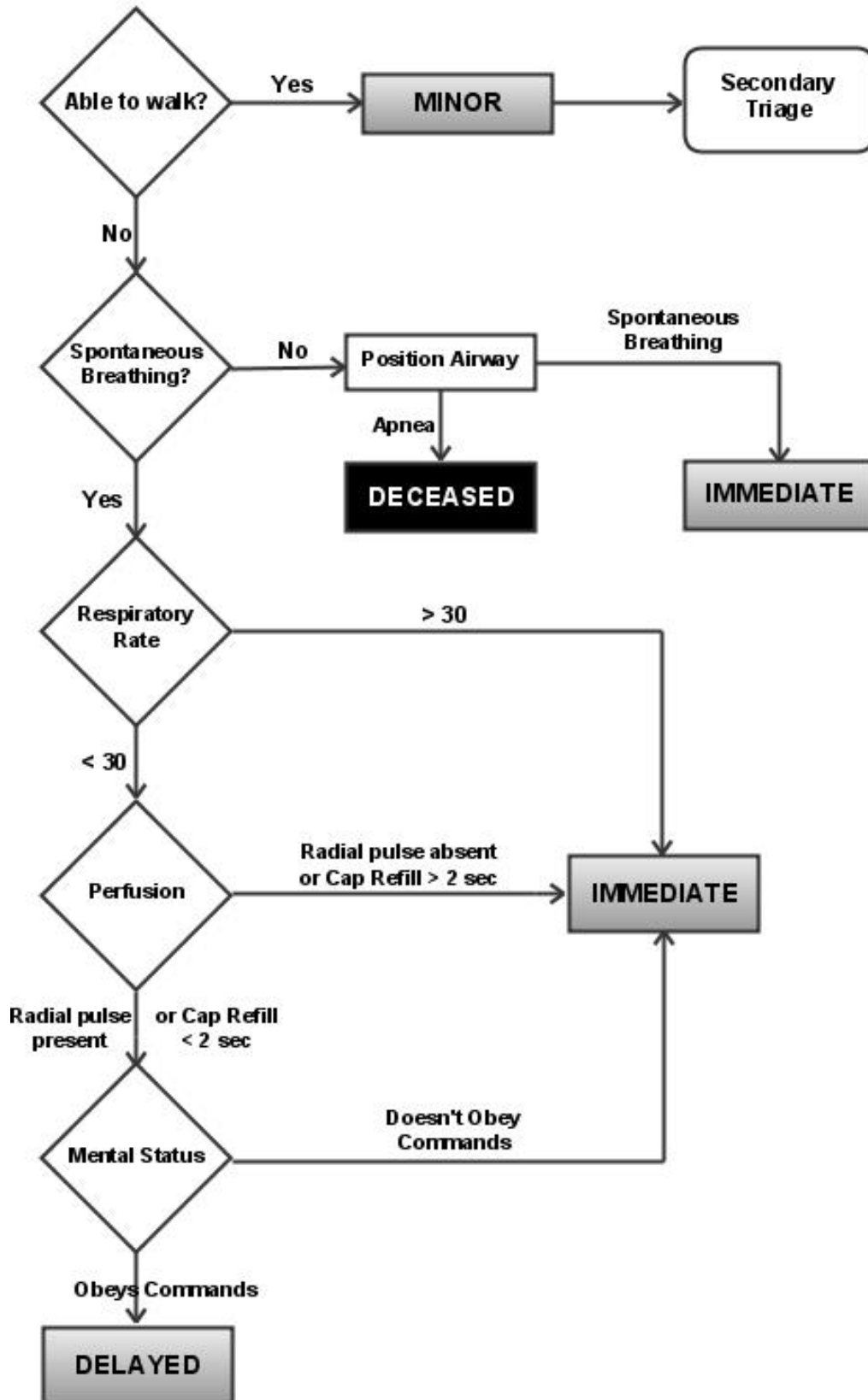
2. Scene command / Joint decisions with Medical Control:

- Call Resource Hospital from scene.
 - ◆ Relay nature of incident; number of victims; general acuity; age groups, special needs and estimated time of arrival.
 - ◆ Maintain communications with hospital once established.
 - ◆ Keep line open for updates.
- Transport 2 of the most critical (red) patients to each of the nearest hospitals to help clear the scene.
- Resource Hospital shall assess receiving hospital status and relay receiving availability to scene.
- Transportation officer should determine hospital destinations based on time of day, hospital resources available, and patient acuity.
 - ◆ Make all attempts to evenly distribute remaining patients to area hospitals; do not overburden one facility.
 - ◆ This may mean transports of longer than 25 minutes depending on patient volume.
 - ◆ Preferable, but not necessary, to keep families together.
 - ◆ Trauma triage criteria to Level I and Level II trauma centers no longer apply.

3. Depending on the nature and magnitude of an incident, the EMS Medical Director or State Medical Director may suspend all EMS operations as usual and direct that all care be conducted by SOP and/or using personnel and resources as available.

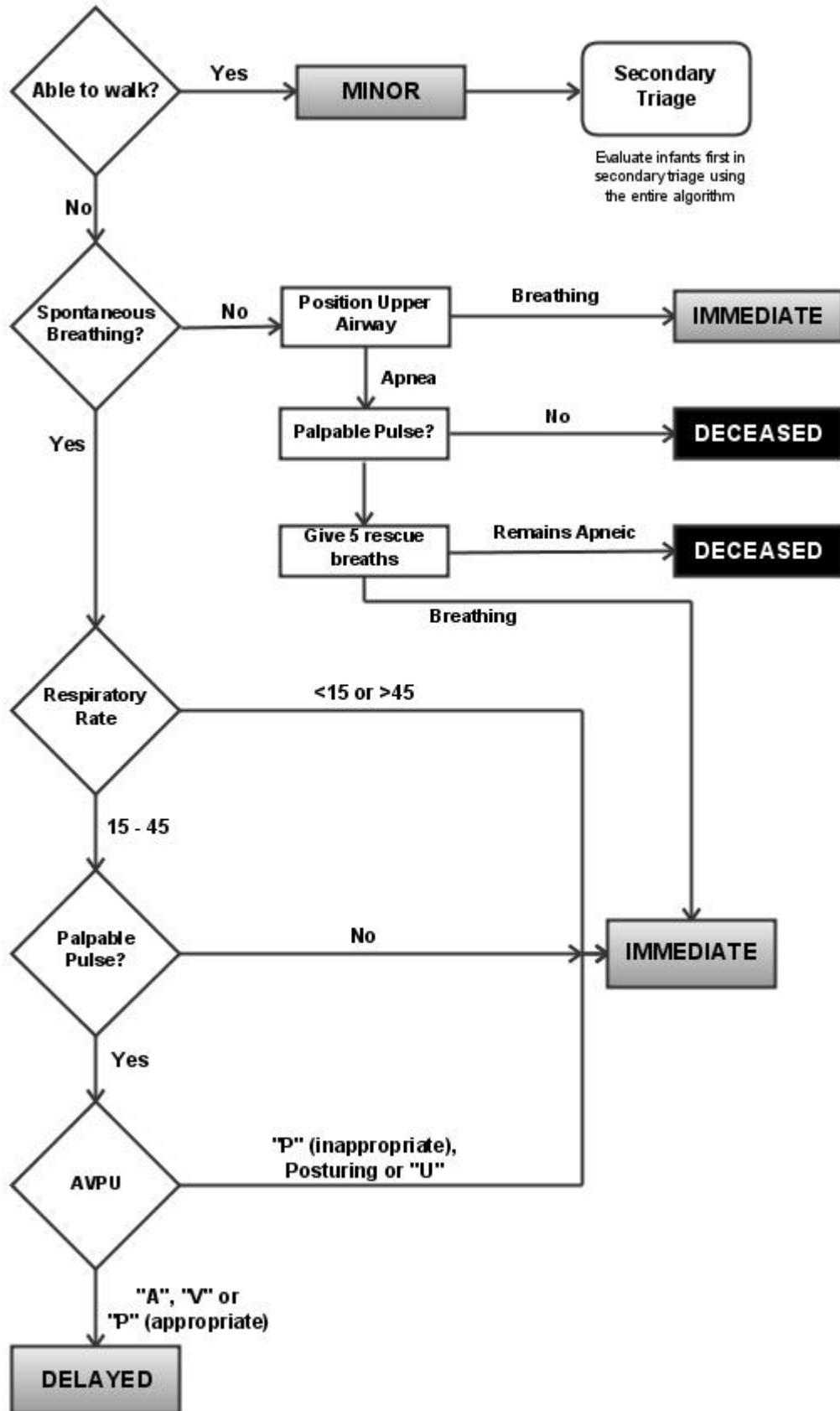
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START Triage Algorithm



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JumpSTART Triage Algorithm



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SPECIALTY TRANSPORT

BLS/ALS

GENERAL CONSIDERATION

1. In appropriate situations, EMS providers may request from Medical Control the dispatch of specialty transportation services (helicopter or hospital-based ground units) to the scene of a prehospital emergency in accordance with the following criteria:
 - The patient meets trauma center criteria and transport time by the specialized unit to the desired center is less than a EMS providers transport time

OR

 - Benefits to the patient due to the increased level of expertise of the specialized unit staff outweigh increased transport times
2. If EMS providers conclude that specialty transport services are necessary, the provider agency may contact the specialty service and place the unit on standby prior to contacting Medical Control.
 - A prolonged extrication alone is not sufficient reason to call a specialty transport service. Serious injuries must accompany prolonged extrication.
 - At no time shall a patient be transported from the scene via specialty service without authorization from Medical Control.
3. Assess the need for specialty transport services based upon:
 - Patient history.
 - The course of events (mechanism of injury, extrication times, etc.).
 - The patient's condition as assessed at the scene.
 - Current local traffic patterns.
 - Weather conditions.
4. Follow SOPs in providing care until the arrival of the specialty transport unit.
5. Medical Control will establish a prioritized listing of specialty transport services available in their geographic area.

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SPECIALTY TRANSPORT

BLS/ALS

REQUESTING SPECIALTY TRANSPORT

SPECIALTY TRANSPORT CONSIDERATIONS:

If the EMS provider feels the patient would benefit from specialty transport services, the EMS provider should:

1. Request for specialty transport to be placed on standby.
2. Contact Medical Control. Relay the following information:
 - History of event
 - Patient's vital signs and present condition
 - Reason for requesting specialty transport
 - Name and whether or not the specialty service has been placed on standby
3. Medical Control shall make the decision authorizing specialty transport and the receiving facility.
4. If the specialty unit is approved, the most common mechanism is for the EMS provider to communicate directly with the specialty provider. If Medical Control is handling the relay of information, be prepared to relay the following information:
 - a. number of patients
 - b. type and extent of injuries
 - c. vital signs and pertinent history
 - d. proposed landing site/scene location
 - e. unusual circumstances, e.g. hazardous materials

Region VIII Critical Care Vehicle Service Providers

Aeromedical
Air Methods LifeStar 1-866-480-6030

Ground
Good Samaritan STT 1-800-URGENT 5
Advanced Critical Transport (ACT) 708-387-0817

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ADULT INITIAL TRAUMA CARE

BLS/ALS

SCENE SIZE UP

- **Assess and secure scene safety.**
- Use standard precautions on all patients.
- If indicated, follow department HazMat protocols
- If a potential crime scene, make efforts to preserve integrity of possible evidence
- Anticipate potential injuries based on the mechanism of energy transfer

INITIAL ASSESSMENT:

1. **AIRWAY/C-SPINE:** Manual C-spine immobilization as indicated. Position airway and suction as needed. Advanced airway procedures as indicated. If unable to secure by other means, consider **CRICOTHYROIDOTOMY**.
2. **BREATHING/VENTILATION:** Assess ventilatory status; expose chest as needed.
 - Auscultate breath sounds.
 - Oxygen:
 - Administer supplemental **OXYGEN AT LOW FiO₂** (4-6 LPM nasal cannula).
 - If acute altered mental status, hemodynamically unstable, signs of hypoxemia, or meets Trauma Region Field Triage Criteria, **increase OXYGEN TO HIGH FiO₂** (12-15 LPM non-rebreather mask)
 - If hypoventilating or apneic, **VENTILATE WITH HIGH FiO₂** (BVM with ≥ 15 LPM oxygen supply)
 - **ALS:** refer to **Drug Assisted Intubation – Etomidate SOP**, p. 24, if needed
 - **ALS:** if **tension pneumothorax**, perform **PLEURAL DECOMPRESSION** of affected side
3. **CIRCULATION:** assess cardiovascular status.
 - If no carotid pulse, follow **Traumatic Arrest SOP**, p. 59
 - Control all external hemorrhage
 - **ALS: Obtain VASCULAR ACCESS.** Infusion rate as follows:
 - ◆ **Inadequate perfusion** (altered mental status or signs of hypoperfusion): Attempt large bore access (IV or IO if the patient meets all other criteria) enroute. Minimum fluid volume of 2 L unless contraindicated. Infusion rate based on clinical presentation.
 - ◆ **Adequate perfusion:** Attempt large bore IV enroute. Titrate fluid volume to patient condition.
 - **Monitor ECG** as appropriate
 - Place a pelvic stabilizing device for suspected pelvic instability.

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ADULT INITIAL TRAUMA CARE (Continued)

4. **DISABILITY/MINI-NEUROLOGICAL EXAM:** Assess AVPU along with Glasgow Coma Scale and evaluate neurological function

ALS

- If GCS score ≤ 8 , see **HEAD INJURIES SOP**, p. 56
- **No neurological impairment:** Reassess periodically and document changes
- **Altered Mental Status:** Seizure and vomiting precautions. Check glucose level. If glucose < 60 :
 - Administer **DEXTROSE 50% 25 gm (50 mL) IVP**

BLS/ALS

5. Expose and examine as indicated. Consider potential injuries based on mechanism of injury.
6. Identify priority transport.
7. Complete spinal immobilization as indicated.
8. Assess pain score on a scale from 0-10. Treat pain per appropriate SOP.

TRANSPORT DECISION: Once the initial assessment and resuscitative interventions are initiated, a decision must be made whether to continue with the rapid trauma survey and the need for additional interventions on scene, or to transport rapidly with interventions enroute. Document the patient condition(s) or behavior(s) that necessitated this decision.

**Transport to closest appropriate facility per Trauma Region Field Triage Guidelines,
p. 44.**

RAPID TRAUMA SURVEY (as allowed by time and patient condition)

1. Systematic head-to-toe assessment
2. SAMPLE history
3. Recheck and record vital signs and patient condition at least q 15 minutes as able, and after each ALS intervention. For unstable patients, more frequent reassessment may be needed. Note the time obtained.
4. **Revised Trauma Score**

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ADULT GLASGOW COMA SCALE		
EYE OPENING	Spontaneous	4
	To voice	3
	To pain	2
	None	1
VERBAL RESPONSE	Oriented	5
	Confused speech	4
	Inappropriate words	3
	Incomprehensible sounds	2
	None	1
MOTOR RESPONSE	Obeys commands	6
	Localizes pain	5
	Withdraws to pain	4
	Abnormal flexion to pain	3
	Abnormal extension	2
	None	1
TOTAL GLASGOW COMA SCALE SCORE: (3-15)		

ADULT REVISED TRAUMA SCORE		
Glasgow Coma Score Conversion Points	GCS 13-15	4
	GCS 9-12	3
	GCS 6-8	2
	GCS 4-5	1
	GCS 3	0
	Respiratory Rate	10-29
> 29		3
6-9		2
1-5		1
0		0
Systolic Blood Pressure		> 89
	76-89	3
	50-75	2
	1-49	1
	0	0
TOTAL REVISED TRAUMA SCORE: (0-12)		

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ADULT HEAD INJURIES

BLS/ALS

1. **Initial Trauma Care SOP**, p. 53
 - Assure adequacy of ventilation
 - Apply C-spine immobilization
 - Keep patient flat
 - Take vomiting and seizure precautions
 - Glasgow Coma Scale (GCS) score
 - Identify deficits
2. Begin expeditious transport and contact Medical Control enroute

Altered Mental Status

ALS

3. If GCS score ≤ 8 , **INTUBATE** using in-line procedure. If unable to INTUBATE, consider use of **ALTERNATE AIRWAY DEVICE**. Refer to **Drug Assisted Intubation – Etomidate SOP**, p. 24, if indicated.
4. Obtain and record blood glucose level, if available. If glucose < 60 , treat per **Diabetic/Glucose Emergencies SOP**, p. 29
5. If seizure activity, treat per **Seizures/Status Epilepticus SOP**, p. 31
6. For the combative patient, consider **VERSED** (midazolam) **2 mg increments IV q 2 minutes** up to 10 mg total as necessary.
 - May administer **VERSED** (midazolam) **IM** if unable to start IV
 - ◆ **< 70 kg = 5 mg IM**
 - ◆ **≥ 70 kg = 10 mg IM**

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ADULT SPINE INJURIES

BLS/ALS

1. **Initial Trauma Care SOP**, p. 53
 - Apply C-spine immobilization
 - Keep patient flat
 - Take vomiting and seizure precautions
 - Glasgow Coma Scale (GCS) score

ALS

If signs of hypoperfusion (consider neurogenic shock):

2. **Systolic BP < 90 mmHg**
 - **IV FLUID BOLUS** in 200 mL increments as needed up to 2 L

If patient remains hypoperfused and/or is bradycardic:

3. **Continue IV fluids and administer ATROPINE 0.5 mg IV/IO** q 3 minutes up to a total dose of 3 mg

Altered Mental Status

4. If GCS score \leq 8, **INTUBATE** using in-line procedure. If unable to INTUBATE, consider use of **Alternate Airway**. Refer to **Drug Assisted Intubation – Etomidate SOP**, p. 24, if indicated.
5. Obtain and record blood glucose level, if available. If glucose < 60, treat per **Diabetic/Glucose Emergencies SOP**, p. 29
6. If seizure activity, treat per **Seizures/Status Epilepticus SOP**, p. 31

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ADULT CHEST INJURIES

BLS/ALS

1. **Initial Trauma Care SOP**, p. 53
5. **HIGH FiO₂ or VENTILATION**
2. Begin expeditious transport to appropriate facility and contact Medical Control enroute

SUCKING CHEST WOUND/OPEN PNEUMOTHORAX

3. Apply occlusive dressing taped on three sides
4. If patient deteriorates, remove dressing temporarily to allow air to escape
5. **ALS**: Consider intubation

FLAIL CHEST

3. If respiratory distress, appropriately **VENTILATE WITH HIGH FIO₂ VIA BVM** to provide internal splinting.
4. **ALS**: Consider intubation

TENSION PNEUMOTHORAX

3. Suspect when patient presents with severe respiratory distress or difficulty ventilating, hypotension, distended neck veins, absent breath sounds on the involved side, and/or tracheal deviation.
4. **ALS**: **PLEURAL DECOMPRESSION of affected side**
5. Assess for PEA. If present, refer to **Asystole/PEA SOP**, p. 19

Note: The landmark for pleural decompression is the second intercostal space in the mid-clavicular line. The needle should be inserted above the third rib to avoid the intercostal nerve, artery, and vein.

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ADULT TRAUMATIC ARREST

BLS/ALS

1. If obviously dead, refer to **Withholding or Withdrawal of Resuscitative Efforts SOP**, p. 8.
2. If injury is incompatible with life (e.g. massive brain matter visible), contact Medical Control for possible scene pronouncement.

ALS

3. If patient experiences loss of pulses under direct paramedic observation during transport:
 - **Initial Trauma Care SOP**, p. 53
 - Consider **BILATERAL PLEURAL DECOMPRESSION**
 - Consider appropriate cardiac arrest SOP
 - Verify tube placement if intubated

Note: After spinal immobilization and airway control is established, procedures are to be performed enroute.

**Illinois Region 8 Emergency Medical Services
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ADULT OPHTHALMIC EMERGENCIES

GENERAL APPROACH

BLS/ALS

1. **Initial Trauma Care SOP**, p. 53

- Assess pain on a 0-10 scale
- Quickly obtain gross visual acuity in each eye: light perception, motion, acuity
- Discourage patient from sneezing, coughing, straining or bending at the waist
- Elevate head of cot or backboard Semi-Fowler's position unless contraindicated
- Vomiting precautions

ALS

2. If systolic BP > 100 mmHg, administer **FENTANYL 1 mcg/kg SLOW IV/IM, max first dose 100 mcg. Repeat dose 0.5 mcg/kg SLOW IV/IM in 5 min, max repeat dose 50 mcg.**
- Patients > 65 years old and if systolic BP > 100 mmHg, administer **FENTANYL 0.5 mcg/kg SLOW IV/IM, max dose 50 mcg. Repeat dose 0.25 mcg/kg SLOW IV/IM in 5 min, max repeat dose 25 mcg.**

CHEMICAL SPLASH/BURN

2. **BLS/ALS**: Immediately irrigate affected eye(s) using copious amounts of normal saline. Continue irrigation while enroute to hospital.
3. **ALS**: Instill **0.5% TETRACAINE 1 drop** in each affected eye. May repeat until pain relief achieved.
4. **ALS**: Irrigate per appropriate System-specific procedure.

SUSPECTED CORNEAL ABRASIONS

2. **ALS**: Instill **0.5% TETRACAINE 1 drop** in each affected eye. May repeat until pain relief achieved.
3. Patch affected eye(s).

PENETRATING INJURY/RUPTURED GLOBE

2. **Do not** remove impaled objects; **do not** irrigate or instill tetracaine.
3. Avoid any pressure on the injured eye(s). Cover with cup, or metal or plastic protective shield.
4. Patch unaffected eye.

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ADULT BURN INJURIES

BLS/ALS

4. **Initial Trauma Care SOP**, p. 53
5. **Unresponsive patients found at the scene of a fire, consider cyanide poisoning.** Refer to **Toxicologic Emergencies SOP**, p. 34
6. Evaluate depth of burn and estimate extent using rule of nines or palm method (patient's palm equals 1% BSA). Assess need for transport to Burn Center.

ALS

7. If systolic BP > 100 mmHg, administer **FENTANYL 1 mcg/kg SLOW IV/IO/IM/IN, max first dose 100 mcg. Repeat dose 0.5 mcg/kg SLOW IV/IO/IM/IN in 5 min, max repeat dose 50 mcg.**
 - Patients > 65 years old and if systolic BP > 100 mmHg, administer **FENTANYL 0.5 mcg/kg SLOW IV/IO/IM/IN, max dose 50 mcg. Repeat dose 0.25 mcg/kg SLOW IV/IO/IM/IN in 5 min, max repeat dose 25 mcg.**
8. Consider aggressive fluid resuscitation per Parkland Formula (4 ml x kg x % BSA burned = amount IV fluid delivered in first 24 hour period. Half of the amount to be infused over first 8 hours, other half to be infused over last 16 hours).

THERMAL BURNS

4. **If burned area ≤ 10% TBSA:**
 - Cool burned area for no longer than five minutes with water or saline, if burn occurred within 15 minutes. **Wet dressing may be applied for local pain relief.**
5. Wear gloves and mask until burn wounds are covered.
6. **DO NOT** break blisters. **If > 10% TBSA affected**, cover burn with DRY, sterile dressings.
7. Open dry sheet on stretcher before placing patient for transport. Cover patient with dry sheets and blanket to maintain body temperature.

INHALATION BURNS

4. Note presence of wheezing, hoarseness, stridor, carbonaceous (black) sputum/cough, singed nasal hair/eyebrows/eyelashes.
5. **HIGH FiO₂ or VENTILATION**

ALS

- Consider **INTUBATION** if severe respiratory distress. If intubation unsuccessful, consider **CRICOTHYROIDOTOMY**.
- If wheezing, consider **ALBUTEROL 2.5 mg (3 mL) or XOPENEX 1.25 mg (3 mL) via nebulizer.** May repeat x 1.

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ADULT BURN INJURIES (Continued)

ELECTRICAL BURNS

4. Immobilize as indicated

ALS

5. Assess ECG for dysrhythmias and treat according to appropriate SOP

6. Assess wounds, including neurovascular status

7. Cover wounds with dry sterile dressing (cooling not necessary)

CHEMICAL BURNS

4. HazMat precautions

5. If powdered chemical, brush away excess. Remove clothing, if possible.

6. Irrigate with copious amounts of sterile water or NS ASAP and while enroute.

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EMD (TASER) WEAPONS INJURIES

BLS/ALS

This SOP is to be used for patients who have been subdued by the use of any electromuscular disruption (EMD) weapon (i.e. TASER®)

- 1. Assess scene and personal safety**
- 2. Initial Trauma Care SOP, p. 53**
 - Assess for injury and/or altered mental status and treat per appropriate SOP.
 - Obtain baseline vital signs.
 - ◆ If ALS, include ECG monitoring for cardiac abnormalities
 - ◆ If ALS and patient > 35 years of age, consider 12-lead ECG.
 - Identify location of probes on the patient's body. Evaluate depth of skin penetration.
- 3. If darts are embedded in any of the following areas, stabilize in place and transport patient:**
 - lid/globe of the eye
 - face or neck
 - genitalia
 - bony prominence
 - spinal column
- 4. If darts are found to be superficially embedded in other locations, they may be removed as follows:**
 - Place one hand on the patient where the dart is embedded to stabilize the skin surrounding the puncture site.
 - Firmly grasp the probe with your other hand.
 - Remove by gently pulling the dart straight out along the same plane it entered the body.
 - Assure that the dart is intact
 - Repeat procedure with second dart, if embedded.
 - Return the darts to law enforcement officials, utilizing standard precautions.
- 5. Control minor hemorrhage and cleanse the wound area with normal saline.**
- 6. If indicated, cover wound area with a dry dressing.**
- 7. Transport decision:**
 - Transport decisions regarding patients subdued by EMD weapons should be based on patient condition.
 - If the patient has not had a tetanus immunization in the last five years, they should be advised to get one.

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ADULT MUSCULOSKELETAL INJURIES

BLS/ALS

1. **Initial Trauma Care SOP**, p. 53
2. **ALS**: Consider analgesia, if patient is hemodynamically stable
 - **NITROUS OXIDE** per System-specific policy for MILD pain
 - **For SEVERE pain**:
 - ◆ If systolic BP > 100 mmHg, administer **FENTANYL 1 mcg/kg SLOW IV/IM, max first dose 100 mcg. Repeat dose 0.5 mcg/kg SLOW IV/IM in 5 min, max repeat dose 50 mcg.**
 - ◆ Patients > 65 years old and if systolic BP > 100 mmHg, administer **FENTANYL 0.5 mcg/kg SLOW IV/IM, max first dose 50 mcg. Repeat dose 0.25 mcg/kg SLOW IV/IM in 5 min, max repeat dose 25 mcg.**
3. Immobilize and/or splint. If pulses are lost after applying a traction splint, leave splint in place. Do not release traction. Notify Medical Control of change in status.
4. Elevate extremity and or apply cold pack after splinting when appropriate.
5. **ALS**: If long bone fracture with displacement/muscle spasm, and hemodynamically stable, consider **VERSED** (midazolam) **2 mg increments IV q 2 minutes** up to 10 mg total as necessary.

AMPUTATION / DEGLOVING INJURIES

6. If amputation is incomplete, stabilize with bulky dressing.
7. If uncontrolled bleeding continues, apply tourniquet above amputation as close as possible to the injury. Note time tourniquet applied. **DO NOT** release tourniquet once it has been applied.
8. Care of amputated parts:
 - Wrap in normal saline moistened gauze or towel. Place in plastic bag and seal. **DO NOT** immerse tissue directly in water or normal saline.
 - Place plastic bag in second container filled with ice or cold water or place on cold packs and bring with patient to the hospital.

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ADULT MUSCULOSKELETAL INJURIES (Continued)

INCAPACITATING BACK PAIN (traumatic and non-traumatic origin)

BLS/ALS

1. **Initial Trauma Care SOP**, p. 53
 - Severe pain = the patient is unable to move or be moved due to pain
2. Assess patient to differentiate musculoskeletal back pain from aortic aneurysm pain.
 - history of onset and character of pain
 - hypotension or syncope
 - pain described as “tearing” or “ripping”
 - presence or absence of femoral pulses and mottling of lower extremities
 - any negative neurological finding
3. Assess for injury and immobilize as indicated. Check for distal vascular, motor, and sensory function.

ALS

4. **If hemodynamically stable, consider analgesia:**
 - **NITROUS OXIDE** per System-specific policy
 - If systolic BP > 100 mmHg, administer **FENTANYL 1 mcg/kg SLOW IV/IM, max first dose 100 mcg. Repeat dose 0.5 mcg/kg SLOW IV/IM in 5 min, max repeat dose 50 mcg**, until patient is able to be moved to stretcher.
 - Patients > 65 years old and if systolic BP > 100 mmHg, administer **FENTANYL 0.5 mcg/kg SLOW IV/IM, max first dose 50 mcg. Repeat dose 0.25 mcg/kg SLOW IV/IM in 5 min, max repeat dose 25 mcg**, until patient is able to be moved to stretcher.
5. If patient is experiencing nausea or vomiting, consider administering **ZOFRAN** (ondansetron) **ODT 4 mg tab or 4 mg slow IV x 1 dose only**.

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ADULT NEAR DROWNING

BLS/ALS

1. **Initial Trauma Care SOP**, p. 53
2. Remove wet clothing
3. Assess patient's temperature
 - If **NORMOTHERMIC**, treat dysrhythmias per appropriate SOP, p. 13-19
 - If **HYPOTHERMIC**, treat per **Cold Emergencies SOP**, p. 42
4. Treat other symptoms per appropriate SOP

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**SUSPECTED ABUSE OR NEGLECT
DOMESTIC, SEXUAL, ELDER**

BLS/ALS

1. **Initial Medical Care SOP**, p. 4, or **Initial Trauma Care SOP**, p. 53
2. Treat obvious injuries per appropriate SOP
3. History, physical exam, scene survey. Document findings on patient care report.

SUSPECTED DOMESTIC / SEXUAL ABUSE

4. Provide information on services available to victims of suspected abuse. See Domestic Crime victim information forms.
5. Encourage victim to seek medical attention.
6. If patient is a victim of suspected abuse and age < 18 years of age, DCFS must be contacted by EMS providers.

Illinois Department of Children & Family Services Child Abuse Hotline:

- **1-800-25-ABUSE (1-800-252-2873)**

SUSPECTED ELDER ABUSE HOTLINE

4. Reporting is mandatory in a case of suspected elder abuse. EMS providers must notify one of the following:

Illinois Department on Aging, Elder Abuse Hotline:

- **1-866-800-1409**

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TRAUMA IN PREGNANCY

BLS/ALS

1. **Initial Trauma Care SOP**, p. 53
 - Be aware that the mother may appear stable, but the fetus may be in jeopardy
 - Reference **Field Trauma Guidelines**, p. 44
2. **Visualize** externally for vaginal bleeding, leaking amniotic fluid or crowning. Assess for fetal movements and uterine contractions.
3. Raise right side of backboard 20-30° to place patient on left side.
4. If CPR indicated, manually displace uterus to left side. Follow appropriate SOP.
5. Notify Medical Control ASAP in order to mobilize appropriate hospital personnel.

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OBSTETRICAL COMPLICATIONS

BLS/ALS

1. **Initial Medical Care SOP**, p. 4
2. **HIGH FiO₂ or VENTILATION**
 - **ALS:** If altered mental status or signs of hypoperfusion, **IV FLUID BOLUS IN 200 mL increments** titrated to patient response.
 - Palpate abdomen to determine uterine tone and presence of contractions.
 - Place mother on left side or raise right side of backboard 20-30°. Insert second IV line if no response to initial fluids.

BLEEDING IN PREGNANCY

2. Note type, color and amount of bleeding and/or vaginal discharge. If tissue passes, collect and bring to the hospital with the patient.

TOXEMIA IN PREGNANCY OR PREGNANCY INDUCED HYPERTENSION

2. **HANDLE PATIENT GENTLY.** Minimize CNS stimulation (avoid lights and siren). DO NOT check pupil response. Seizure precautions.
3. **ALS:** If seizure occurs:
Administer **VERSED** (midazolam) **2 mg increments IV** q 2 minutes up to 10 mg total as necessary, titrated to control seizures.

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EMERGENCY CHILDBIRTH

BLS/ALS

PHASE I: UNCOMPLICATED LABOR

1. Obtain history and determine if there is adequate time to transport
 - a. Gravida (number of pregnancies) and Para (number of live births).
 - b. Number of miscarriages, stillbirths, and multiple births.
 - c. Due date (expected date of confinement, "EDC") or date of LMP (last menstrual period).
 - d. Onset, duration, and frequency of contractions (time from beginning of one contraction to beginning of the next).
 - e. Length of previous labors in hours.
 - f. Status of membranes, intact or ruptured. If ruptured, inspect for prolapsed cord or evidence of meconium.
 - g. **HIGH RISK CONCERNS:**
 - maternal drug abuse
 - teenage pregnancy
 - history of diabetes/hypertension/cardiovascular disease/other pre-existing diseases that may compromise mother and/or fetus
 - preterm labor (< 37 weeks)
 - previous breech or C-section.

2. Inspect for bulging perineum, crowning, or whether patient is involuntarily pushing with contractions. If contractions are two minutes apart with crowning or any of the above are present, prepare for delivery. If delivery is not imminent, transport on left side. **DO NOT ATTEMPT TO RESTRAIN OR DELAY DELIVERY UNLESS PROLAPSED CORD IS NOTED.**

IF DELIVERY IS IMMINENT:

3. **Initial Medical Care SOP**, p. 4
 - a. If patient is hyperventilating, coach her to take slow deep breaths
 - b. **ALS:** If patient becomes hypotensive or lightheaded at any time:
 - **IV FLUID BOLUS in 200 mL increments**
 - **HIGH FiO₂ or VENTILATION**
4. Position patient supine on a flat surface, if possible. Use standard precautions.
5. Open OB pack. Place drapes over the patient's abdomen and beneath perineum. Prepare bulb syringe, cord clamps and Chux to receive newborn. Have newborn-sized BVM with oxygen supply ready.

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EMERGENCY CHILDBIRTH (Continued)

PHASE II: DELIVERY

6. Control rate of delivery by placing palm of one hand over occiput. Protect perineum with pressure from other hand.
7. If amniotic sac is still intact, gently twist or tear the membrane. Note presence or absence of meconium.
8. Once the head is delivered, allow it to passively turn to one side.
9. Feel around the neck for the umbilical cord (nuchal cord). If present, attempt to gently lift it over the head. If unsuccessful, double clamp and cut the cord between the clamps.
10. To facilitate delivery of the upper shoulder, gently guide to head downward. Once the upper shoulder is delivered, support and lift the head and neck slightly to deliver the lower shoulder. Allow head to deliver passively.
11. The rest of the newborn should deliver quickly with one contraction. Firmly grasp the newborn as it emerges. Newborn will be wet and slippery.
12. Keep newborn level with vagina until cord stops pulsating and is double clamped.

PHASE III: CARE OF THE NEWBORN

NOTE: The majority of newborns require no resuscitation beyond maintenance of temperature, mild stimulation, and suctioning of the airway. Transport is indicated as soon as the airway is secured and resuscitative interventions, if needed, are initiated. If the APGAR score is < 6 at 1 minute or meconium is present, begin resuscitation.

BLS / ALS

1. **Pediatric Initial Medical Care SOP**, p. 75
2. Deliver head and body
3. Clamp and cut cord
4. Assess neonatal risk factors:
 - Term gestation?
 - Clear amniotic fluid?
 - Breathing or crying?
 - Good muscle tone?
5. Provide basic care:
 - Provide warmth
 - Position; clear airway as needed with bulb syringe or large bore suction catheter
 - Dry the newborn, stimulate and reposition as needed
6. Check respirations:
 - If apneic and meconium present, clear airway and provide deep suctioning of the oropharynx. Begin positive pressure ventilation at rate of 40-60 per minute using neonatal BVM.
 - If apneic without signs of meconium, begin positive pressure ventilation at rate of 40-60 per minute using neonatal BVM.
7. Check heart rate:
 - If heart rate > 100 BPM, check color
 - If heart rate 60-100 BPM, continue ventilations for 1-2 minutes, reassess heart rate.
 - If heart rate < 60 BPM, administer chest compressions for 30 seconds at a ratio of 3:1 with ventilations, reassess heart rate.
 - If heart rate remains < 60 BPM, continue CPR.

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EMERGENCY CHILDBIRTH (Continued)

ALS

8. Consider **ENDOTRACHEAL INTUBATION**
9. If heart rate remains < 60 BPM after chest compressions, establish vascular access
 - If successful, administer **EPINEPHRINE 1:10,000 0.1 mL/kg IV/IO** q 3-5 minutes and continue CPR.
 - If unsuccessful, administer **EPINEPHRINE 1:10,000 0.5 mL/kg ET** q 3-5 minutes and continue CPR.
10. Monitor cardiac rhythm
11. Repeat **EPINEPHRINE 1:10,000 0.1 mL/kg IV/IO** or **EPHINEPHRINE 1:10,000 0.5 mL/kg ET** q 3-5 minutes and continue CPR as long as heart rate remains < 60 BPM
12. Begin transport and contact Medical Control enroute

PHASE IV: POSTPARTUM CARE

1. Placenta should deliver in 20-30 minutes. If delivered, collect in plastic bag from OB kit and transport to hospital for inspection. Do **NOT** pull on cord to facilitate delivery of the placenta. **DO NOT DELAY TRANSPORT AWAITING DELIVERY OF PLACENTA.**
 2. If perineum is torn and/or bleeding, apply direct pressure with sanitary pads, and have patient bring her legs together. Apply cold pack or ice bag to perineum (over pad) for comfort and to reduce swelling.
 3. If estimated blood loss > 500 mL:
 - **ALS: IV FLUID BOLUS in 200 mL increments** titrated to patient response.
 - Massage top of uterus (fundus) until firm.
 - Breast-feeding may increase uterine tone. Allow newborn to nurse.
- If signs of hypoperfusion despite above treatment, start second IV enroute and fluid boluses.

SPECIAL CONSIDERATIONS:

- Focus should be on newborn appearance, not the presence of meconium
- **Consider APGAR at 1 and 5 minutes, but do not interrupt resuscitation to obtain**
- Per Medical Control, consider:
 - **DEXTROSE 12.5% 2 mL/kg IV/IO**
 - **IV FLUID BOLUS of 10 mL/kg**
 - **NARCAN (naloxone) 0.1 mg/kg IV/IO/ET**

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APGAR SCORING	0	1	2	1 minute	5 minute
Appearance (skin color)	Blue or Pale	Blue Hands or Feet	Entirely Pink		
Pulse (heart rate)	Absent	< 100/min	> 100/min		
Grimace (reflex irritability)	Limp	Grimace	Cough / Sneeze or Appropriate to Stimuli		
Activity (muscle tone)	Limp	Some Flexion of Extremities	Active Movement		
Respiration	Absent	Weak Cry / Hypoventilation	Strong		
TOTALS					

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DELIVERY COMPLICATIONS

BLS/ALS

1. **Initial Medical Care SOP**, p. 4
 - **HIGH FiO₂ or VENTILATION**
 - **LOAD AND GO SITUATION** with treatment enroute
 - **Contact Medical Control enroute as soon as possible**

SHOULDER DYSTOCIA

2. Place mother supine with knees to shoulders and reattempt delivery
3. If unsuccessful, return to supine position. Provide supplemental oxygen to newborn and protect head

BREECH BIRTH

2. **NEVER ATTEMPT TO PULL THE NEWBORN FROM THE VAGINA BY THE LEGS OR TRUNK**
3. As soon as the legs are delivered, support the body wrapped in a towel.
4. After the shoulders are delivered, if face down, gently elevate the legs and trunk to facilitate delivery of the head.
5. Head should deliver in 30 seconds with the next contraction. If NOT, reach two gloved fingers into the vagina to locate the mouth, and push vaginal wall away from mouth to form an airway. Keep fingers in place and transport immediately. Alert receiving hospital ASAP.
6. Apply gentle pressure to the fundus. If head does NOT deliver in two minutes, keep your fingers in place to maintain the airway. Keep exposed part of the fetus warm and dry.
7. If the head delivers, anticipate newborn distress. Refer to **Emergency Childbirth Phase III: Care of the Newborn SOP**, p. 71

PROLAPSED CORD

2. Place mother in Trendelenburg position with knees-to-chest.
3. **DO NOT** push cord back into vagina.
4. Place gloved fingers into vagina between pubic bone and presenting part, with the cord in between two fingers to monitor cord pulsations and exert counter pressure on the presenting part.
5. Cover exposed cord with moist dressing and keep warm.
6. Maintain hand placement until relieved at Emergency Department.

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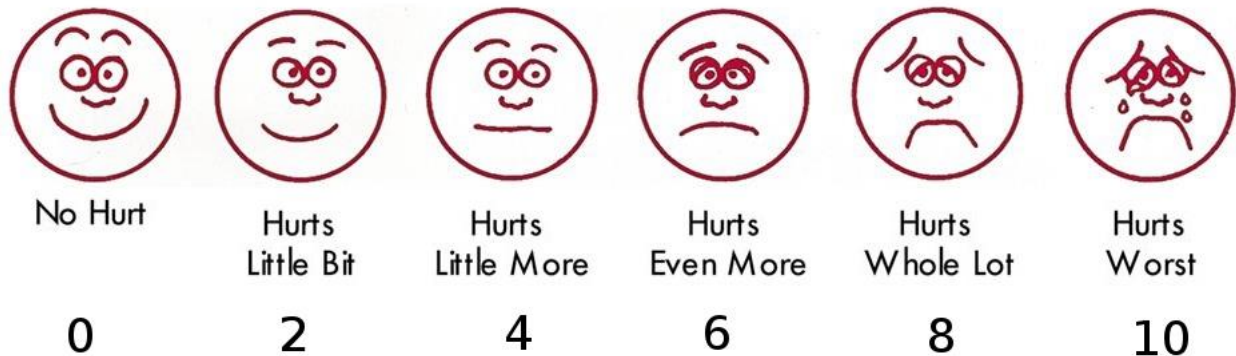
PEDIATRIC INITIAL MEDICAL CARE

In this document, pediatric patients are defined as age 15 years and younger, consistent with the Emergency Medical Services and Trauma Center Code adopted by the Illinois Department of Public Health. Other terms commonly applied to the pediatric population include: "newborn" (less than 24 hours), "neonates" (1-28 days) and "infant" (1-12 months).

BLS / ALS

1. Assess scene safety
2. Use standard precautions
3. Assess Airway, Breathing and Circulation and intervene as indicated
4. Assess Level of Consciousness
5. Administer supplemental **OXYGEN AT LOW FiO₂** (blow-by method or nasal cannula)
6. If unstable, administer **HIGH FiO₂ BY MASK** or **ASSIST WITH HIGH FiO₂ BVM**
7. Obtain blood glucose if indicated
8. Treat hypoglycemia per **Pediatric Altered Mental Status SOP**, p. 87
9. Assess ECG rhythm (if indicated and if available)
10. Assess pulse oximetry
11. **Age > 1**: If patient is experiencing nausea or vomiting, consider administering **ZOFRAN** (ondansetron):
 - > 40 kg: **ODT 4 mg tab or 4 mg slow IV** x 1 dose only
 - < 40 kg: **0.1 mg/kg slow IV** x 1 dose only (no oral dose for < 40 kg)

Wong-Baker Pain Scale



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PEDIATRIC BRADYDYSRHYTHMIAS

BLS / ALS

1. Pediatric Initial Medical Care SOP, p. 75

- Complete initial assessment. Assess for:
 - Weak, thready or absent peripheral pulses
 - Decreasing consciousness
 - Tachypnea/Respiratory difficulty
 - Central cyanosis and coolness
 - Hypotension (late sign)
- Search for and treat possible contributing factors:
 - Hypovolemia
 - Hypoxia or ventilation problems
 - Hypoglycemia
 - Hypothermia
 - Toxins (overdose)
 - Tamponade (cardiac)
 - Tension pneumothorax
 - Trauma (hypovolemia, increased intracranial pressure)

If cardiopulmonary compromise present:

2. administer **HIGH FiO₂ BY MASK or ASSIST WITH HIGH FiO₂ BVM**
3. If heart rate remains bradycardic with hypoperfusion, perform chest compressions

ALS

4. Establish **VASCULAR ACCESS IV/IO**
5. If cardiopulmonary compromise continues, administer **EPINEPHRINE 1:10,000 0.1 mL/kg (0.01 mg/kg) IV/IO. Repeat every 3-5 minutes if no response.**
6. If increased vagal tone or primary AV block, administer **ATROPINE 0.02 mg/kg IV/IO.**
 - **May repeat x 1 after 3-5 minutes**
 - Minimum dose: 0.1 mg
 - Maximum single dose 0.5 mg
7. If cardiopulmonary compromise continues:
 - Contact Medical Control for consideration of **TRANSCUTANEOUS PACING (TCP)**
 - Consider sedation with **VERSED (midazolam) 0.05 mg/kg IV/IO**, but don't delay pacing
 - Refer to **Pediatric Pulseless Arrest SOP, p. 80**
8. Contact Medical Control
9. Transport
 - Support ABCs
 - Keep warm
 - Observe

Special Considerations:

- Hypoglycemia has been known to cause bradycardia in infants and children
- Refer to **Pediatric Cold Emergencies SOP, p. 96**

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**PEDIATRIC TACHYCARDIA
(> 180 BPM for age 1-15, > 220 BPM for < 1 year)**

BLS / ALS

1. **Pediatric Initial Medical Care SOP**, p. 75
2. Complete initial assessment
 - Assess for cardiopulmonary compromise:
 - Weak, thready or absent peripheral pulses
 - Decreasing consciousness
 - Tachypnea/Respiratory difficulty
 - Central cyanosis and coolness
 - Hypotension (late sign)
 - Bradycardia and/or no palpable pulse (ominous sign)
 - Consider possible treatable causes and treat (see below)

Wide QRS (> 0.08 sec) – Possible VT
Stable

BLS / ALS

3. Contact Medical Control
4. Transport
 - Support ABCs
 - Keep warm

Unstable

BLS

3. Contact Medical Control
4. Transport
 - Support ABCs
 - Keep warm

ALS

3. Establish vascular access IV/IO
4. **SYNCHRONIZED CARDIOVERSION** at **1 J/kg**
 - Consider sedation with **VERSED** (midazolam) **0.05 mg/kg IV/IO**, but don't delay cardioversion
5. If no conversion, administer **SYNCHRONIZED CARDIOVERSION** at **2 J/kg**
6. If no conversion, consider **ADENOCARD** (adenosine) **0.1 mg/kg rapid IV/IO push** ▲
7. Begin transport and contact Medical Control

Narrow QRS (≤ 0.08 sec) – Possible SVT
Stable

BLS / ALS

3. Contact Medical Control
4. Transport
 - Support ABCs
 - Keep warm

Unstable

BLS

3. Contact Medical Control
4. Transport
 - Support ABCs
 - Keep warm

ALS

3. Establish vascular access IV/IO
4. If probable SVT, give **ADENOCARD** (adenosine) **0.1 mg/kg rapid IV/IO push** (max dose 6 mg) ▲
5. If no conversion, repeat **ADENOCARD** (adenosine) at **0.2 mg/kg rapid IV/IO push** (max dose 12 mg) ▲
6. If **ADENOCARD** (adenosine) unsuccessful and patient remains unstable:
 - Begin transport, and contact Medical Control
 - **SYNCHRONIZED CARDIOVERSION 1 J/kg** while enroute
 - If no response, may repeat **SYNCHRONIZED CARDIOVERSION 2 J/kg**

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**PEDIATRIC TACHYCARDIA
(> 180 BPM for age 1-15, > 220 BPM for < 1 year) (Continued)**

- Consider sedation with **VERSED** (midazolam) **0.05 mg/kg IV/IO**, but don't delay cardioversion

Special Considerations:

- Search for and treat possible contributing factors / treatable causes per appropriate SOP:
 - Hypovolemia
 - Hypoxia or ventilation problems
 - Hypoglycemia
 - Hypothermia
 - Toxins (overdose)
 - Tamponade (cardiac)
 - Tension pneumothorax
 - Trauma (hypovolemia, increased intracranial pressure)

Differential diagnosis of narrow complex rhythms in pediatrics:

Probable Supraventricular Tachycardia

- Vague, nonspecific history
- P waves absent/abnormal
- HR not variable
- History of abrupt rate changes
- <1 year: rate usually > 220 BPM
- 1-15 years: rate usually > 180 BPM

Probable Sinus Tachycardia

- History consistent with known cause
- P waves present/normal
- Variable R-R; constant P-R
- < 1 year: rate usually < 220 BPM
- 1-15 years: rate usually < 180 BPM

▲ Follow all Adenocard (adenosine) administrations by an immediate rapid normal saline flush of ≥ 5 mL

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**PEDIATRIC AED
for age > 1 year**

BLS

1. Pediatric Initial Medical Care SOP, p. 75

- Establish unresponsiveness.
- Open the airway (head tilt–chin lift or jaw thrust if suspected C-spine injury) and check breathing. If no breathing or only gasping:
- Check pulse for a maximum of 10 seconds. If pulseless, start chest compressions (rate of at least 100 per minute) at a ratio of 15:2 (compressions:breaths).
- Give 2 breaths (over 1 second each) that cause the chest to rise (if chest does not rise, reposition, reattempt). Allow for adequate exhalation time.

2. Attach and use AED as soon as available. Minimize interruptions in chest compressions before and after shock; resume CPR beginning with compressions immediately after each shock.

- Attach pads to bare dry skin in proper position. (NOTE: It is always desirable to utilize an AED with pediatric capabilities and pads. If unavailable, use of any AED is appropriate.)
- For 1-8 years of age:
 - If PEDS pads available: Apply as pictured on each of the AED electrodes with proper contact and no overlap of pads. If overlap of pads, use anterior (front) and posterior (back) placement with cervical spine precautions if neck/back injury suspected.
 - If ADULT pads only: Apply anterior (front) and posterior (back) with C-spine precautions if neck/back injury suspected.

3. Press analyze button (if present) and stand clear of patient.

- If shock advised:
 - Ensure that all are “clear” of patient and press **SHOCK** button
 - Resume CPR immediately beginning with compressions
 - Every 2 minutes, analyze / shock as indicated / resume CPR
- If no shock advised:
 - Check airway, breathing and other signs of circulation; resume CPR if indicated.
 - Contact Medical Control
 - Transport
 - Support ABCs
 - Keep Warm

Special Considerations:

- If injury or neck/back trauma suspected, maintain C-spine immobilization
- Remove patient from hazardous environment or standing water prior to use of AED

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PEDIATRIC PULSELESS ARREST

BLS / ALS

1. **Pediatric Initial Medical Care SOP**, p. 75
2. Initiate CPR
3. Check cardiac rhythm
 - If BLS, go to **Pediatric AED SOP**, p. 79

SHOCKABLE RHYTHM

ALS:

4. **Shock x 1 at 2 J/kg and immediately resume CPR for 2 minutes**
5. Recheck rhythm.
 - If organized electrical rhythm, check pulse. If no pulse or heart rate < 60 BPM, resume CPR.
 - If shockable rhythm, resume CPR while defibrillator charging. When defibrillator ready, **SHOCK X 1 at 4 J/kg** and resume CPR for 2 minutes.
6. Establish **VASCULAR ACCESS IV/IO**, consider **INTUBATION/ADVANCED AIRWAY INSERTION**.
7. Administer **EPINEPHRINE 1:10,000 0.1 mL/kg (0.01 mg/kg) IV/IO ♥** while continuing CPR
 - Repeat every 3 to 5 minutes
8. Repeat cycle of 2 minute CPR and rhythm recheck. **DEFIBRILLATE at 4 J/kg** when indicated by shockable rhythm.
9. Transport

NON-SHOCKABLE RHYTHM

ALS:

4. Resume CPR immediately for 2 minutes
5. Recheck rhythm.
 - If organized electrical rhythm, check pulse. If no pulse or heart rate < 60 BPM, resume CPR.
 - If shockable rhythm occurs at any time, switch to that treatment column
6. Establish **VASCULAR ACCESS IV/IO**, consider **INTUBATION/ADVANCED AIRWAY INSERTION**.
7. Administer **EPINEPHRINE 1:10,000 0.1 mL/kg (0.01 mg/kg) IV/IO ♥** while continuing CPR
 - Repeat every 3 to 5 minutes
8. Re-verify rhythm every 2 minutes. If organized electrical rhythm or rhythm change, check pulse.
9. Transport

Special Considerations:

- Search for and treat possible contributing factors:
 - Hypovolemia
 - Hypoxia or ventilation problems
 - Hypoglycemia
 - Hypothermia
 - Toxins (overdose)
 - Tamponade (cardiac)
 - Tension pneumothorax
 - Trauma (hypovolemia, increased intracranial pressure)
- If advanced airway is placed, give continuous chest compressions without pause for breaths. After 2 minutes of CPR, recheck rhythm. If organized and non-shockable rhythm, check pulse.
- Defibrillation energy should not exceed adult energy.
- ♥ If no vascular access, may consider **EPINEPHRINE 1:1000 0.1 mL/kg (0.1 mg/kg) ET** diluted with 2 mL normal saline.

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PEDIATRIC DRUG ASSISTED INTUBATION – VERSED

ALS

1. Pediatric Initial Medical Care SOP, p. 75

- The following are situations which may require the use of this SOP to facilitate intubation:
 - ◆ Pediatric Glasgow Coma Scale (PCGS) score \leq 8
 - ◆ Imminent respiratory arrest or Imminent tracheal/laryngeal closure from any cause

ALWAYS HAVE CRICOTHYROIDOTOMY EQUIPMENT AVAILABLE

2. Prepare patient and equipment for procedure

- Position patient in sniffing position unless contraindicated (i.e. C-spine injury)
- Have suction with Yankauer or other rigid tip ready
- Prepare all intubation and cricothyroidotomy equipment per System-specific procedure
- **HIGH FiO₂ VENTILATION prior to and in-between steps of this procedure as able**

3. Administer VERSED (midazolam) 0.05 mg/kg slow IV/IO q 2 minutes to a maximum of 0.2 mg/kg (max total dose not to exceed 10 mg). If no IV, give VERSED (midazolam) 0.2 mg/kg IM x 1.

4. BENZOCAINE spray to posterior pharynx (0.5-1 second spray x 2, 30 seconds apart)

5. Attempt oral or oral in-line intubation via System-specific procedure

6. After passing of tube, verify placement:

- Adequate chest expansion bilaterally and symmetrically
- Positive bilateral breath sounds
- Negative epigastric sounds
- End tidal CO₂ detector/esophageal detection device per System-specific procedure

7. Secure ET tube and reassess placement

POST INTUBATION SEDATION

8. Administer VERSED (midazolam) 0.05 mg/kg slow IV/IO q 2 minutes to a maximum of 0.2 mg/kg as necessary.

If unsuccessful, continue HIGH FiO₂ VENTILATION, contact Medical Control, and be prepared for CRICOIDTHYROIDOTOMY per System-specific procedure.

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PEDIATRIC RESPIRATORY ARREST

BLS / ALS

1. **Pediatric Initial Medical Care SOP**, p. 75
2. Perform airway maneuver, maintaining in-line C-spine stabilization
 - Modified jaw thrust or chin lift/head tilt
 - Suction
 - Oropharyngeal airway
3. **C-spine immobilization** as indicated
4. If foreign body suspected, implement procedures for foreign body obstruction
5. If not breathing **ASSIST WITH HIGH FiO₂ BVM**
 - Secure airway as appropriate
6. Chest rise inadequate
 - Reposition airway

BLS

7. Cardiopulmonary compromise
 - Refer to **Pediatric Shock SOP**, p. 90, **Pediatric AED SOP**, p. 79, or **Pediatric Pulseless Arrest SOP**, p. 80, as appropriate
 - If heart rate < 60 BPM, go to **Pediatric Bradydysrhythmias SOP**, p. 76

ALS

7. Cardiopulmonary compromise
 - Establish **VASCULAR ACCESS IV/IO** at rate of 20 mL/hr
 - Refer to **Pediatric Shock SOP**, p. 90 or **Pediatric Pulseless Arrest SOP**, p. 80
 - If heart rate < 60 BPM, go to **Pediatric Bradydysrhythmias SOP**, p. 76
8. Consider **INTUBATION/ADVANCED AIRWAY INSERTION**
9. Consider **AGE-APPROPRIATE CRICOTHYROIDOTOMY**

SPECIAL CONSIDERATIONS:

- Respiratory arrest may be a presenting sign of a toxic ingestion, metabolic disorder or anaphylaxis
- Consider **NARCAN** (naloxone) or **GLUCOSE** as indicated

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PEDIATRIC RESPIRATORY DISTRESS

BLS / ALS

1. **Pediatric Initial Medical Care SOP**, p. 75
2. Complete initial assessment.
 - Assess for signs of:

Complete Airway Obstruction

- suspected foreign body
- obstruction or epiglottitis
- anaphylaxis

Partial Airway Obstruction

- suspected foreign body
- obstruction or epiglottitis
- anaphylaxis
- stridor
- history of choking episode
- drooling
- hoarseness
- retractions
- tripod position

Reactive Airway Disease

- wheezing
- grunting
- retractions
- tachypnea
- diminished respirations
- decreased breath sounds
- tachycardia / bradycardia
- decreasing consciousness

- Refer to **Pediatric Respiratory Distress with a Tracheostomy Tube SOP**, p. 85, as indicated

Complete Airway Obstruction

BLS / ALS

3. If foreign body suspected, open mouth and remove foreign body if visible
4. Reposition airway
5. Consider back slaps, chest/abdominal thrusts (age dependent)

ALS

6. Direct laryngoscopy, foreign body removal with Magill forceps if indicated
7. Secure airway as appropriate
8. Consider **AGE-APPROPRIATE CRICOTHYROIDOTOMY**

Partial (Upper) Airway Obstruction

3. Avoid any agitation
4. Position of comfort
5. Consider alternate oxygen methods, i.e. blow by oxygen
6. If wheezing, consider:
 - **BLS**: assist patient with prescribed beta-agonist MDI if available
 - **ALS**: administer **ALBUTEROL (2.5 mg)** or **XOPENEX (1.25 mg)** via nebulizer
7. If cyanosis or other signs of respiratory insufficiency:
 - **ALS**: administer **EPINEPHRINE 1:1000 3 mg (3 mL)** via nebulizer
8. **DO NOT** attempt intubation, invasive glottic visualization, or venous access

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PEDIATRIC RESPIRATORY DISTRES (Continued)

Reactive (Lower) Airway Disease

3. Position of comfort

- **BLS**: assist patient with prescribed beta-agonist MDI if available
- **ALS**: administer **ALBUTEROL** (2.5 mg) or **XOPENEX** (1.25 mg) via nebulizer

4. Reassess. If no response to ALBUTEROL or XOPENEX or patient in severe respiratory distress:

EPINEPHRINE 1:1000 IM

≤ 10 kg	=	0.1 mg (0.1 mL)
11-20 kg	=	0.2 mg (0.2 mL)
≥ 20 kg	=	0.3 mg (0.3 mL)

Special Considerations

- If stable croup is suspected, consider **NORMAL SALINE 6 mL nebulizer** by mask or aim mist (blow by) at child's face
- If assisting patient with a beta-agonist MDI, it should be administered through a holding chamber or spacer device, if available. Beta-agonist MDI inhalers include, among others, albuterol (Proventil®, Ventolin®) and levalbuterol (Xopenex®).

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PEDIATRIC RESPIRATORY DISTRESS WITH A TRACHEOSTOMY TUBE

BLS / ALS

1. **Pediatric Initial Medical Care SOP**, p. 75
2. **ADMINISTER HIGH FiO₂** per tracheostomy collar
 - Suction and reassess airway patency.
 - If still obstructed, repeat suction, after removing inner cannula if present
 - Still obstructed, have caregiver change trach tube, or insert appropriately sized ET tube into stoma
 - Reassess patency
3. **If patent: HIGH FiO₂ BY MASK or ASSIST WITH HIGH FiO₂ BVM**
 - Perform frequent reassessment for obstruction:
 - Retractions
 - Grunting/wheezing/stridor
 - Tachypnea
 - Decreasing consciousness
 - Apnea
 - Cyanosis
4. **Continued Obstruction:**
 - **VENTILATE** with **HIGH FiO₂** using bag valve to trach tube
 - If unable to ventilate to trach tube, ventilate with BVM to mouth (cover stoma)
 - If no chest rise, ventilate with BVM (infant mask) to stoma
 - Must have rise and fall of chest with each ventilation

BLS

5. Refer to **Pediatric Respiratory Arrest SOP**, p. 82, or **Pediatric Pulseless Arrest SOP**, p. 80, as indicated.
6. Contact Medical Control and consider ALS backup if available

ALS

5. If wheezing, consider **ALBUTEROL 2.5 mg (3 mL)** or **XOPENEX 1.25 mg (3 mL)** via nebulizer
6. Refer to **Pediatric Respiratory Arrest SOP**, p. 82, or **Pediatric Pulseless Arrest SOP**, p. 80, as indicated.

For Transport BLS/ALS:

- Support ABCs
- Observe
- Keep warm
- Transport in position of comfort
- Consider allowing caregiver to remain with child regardless of child's level of responsiveness

Special Considerations

- If chest rise inadequate:
 - Reposition the airway
 - If using mask to stoma, consider inadequate volume delivered. Compress bag further and/or depress pop-off valve.

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PEDIATRIC RESPIRATORY DISTRESS WITH A VENTILATOR

BLS / ALS

1. **Pediatric Initial Medical Care SOP**, p. 75
2. Open airway
3. Remove patient from ventilator and **VENTILATE** with **HIGH FiO₂** using bag valve to tracheostomy tube

Able to Ventilate

4. Contact Medical Control (if BLS, consider ALS backup)
5. Transport
 - Support ABCs
 - Keep warm

Unable to Ventilate

4. Go to **Pediatric Respiratory Distress with a Tracheostomy Tube SOP**, p. 85, for obstructed airway guidelines

Special Considerations

- Consider using parent/caregivers/home health nurses as medical resources at home and enroute
- Consider alerting Medical Control of parent/caregiver participation in care
- Consider allowing caregiver to remain with child regardless of child's level of responsiveness
- Bring ventilator to the hospital or have parents/caregivers bring the ventilator to the hospital

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PEDIATRIC ALLERGIC REACTION / ANAPHYLAXIS

BLS / ALS

1. **Pediatric Initial Medical Care SOP**, p. 75
2. Apply ice/cold pack to bite or injection site
3. BLS: consider the administration of one dose **EPINEPHRINE auto-injector** (EpiPen®)

ALS

Localized allergic reaction without systemic symptoms, without diffuse hives, without wheezing, without airway compromise

4. Administer **BENADRYL** (diphenhydramine) **1 mg/kg IM or slow IV**. Max dose 50 mg.

ALS

Allergic reaction with systemic signs: wheezing, diffuse hives, or prior history of systemic reaction, **without signs of hypoperfusion**

4. Administer **BENADRYL** (diphenhydramine) **1 mg/kg IM or slow IV/IO**. Max dose 50 mg.
5. Administer **EPINEPHRINE 1:1000 IM**
 $\leq 10 \text{ kg} = 0.1 \text{ mg (0.1 mL)}$
 $11 - 20 \text{ kg} = 0.2 \text{ mg (0.2 mL)}$
 $\geq 20 \text{ kg} = 0.3 \text{ mg (0.3 mL)}$
6. If wheezing, consider **ALBUTEROL 2.5 mg (3 mL)** or **XOPENEX 1.25 mg (3 mL)** via nebulizer

ALS

Anaphylaxis: multisystem reaction with signs of hypoperfusion: altered mental status or severe respiratory distress / wheezing / hypoxia

4. **IV FLUID BOLUS of 20 mL/kg x 1**
5. Administer **EPINEPHRINE 1:10,000 0.1 mL/kg (0.01 mg/kg) IV/IO**
 - May repeat q 3 minutes
 - If no vascular access, give **EPINEPHRINE 1:1000 0.01 mL/kg (0.01 mg/kg) IM**.
6. Administer **BENADRYL** (diphenhydramine) **1 mg/kg slow IV/IO**. Max dose 50 mg. If no vascular access, give IM.
7. If wheezing, consider **ALBUTEROL 2.5 mg (3 mL)** or **XOPENEX 1.25 mg (3 mL)** via nebulizer

**Illinois Region 8 Emergency Medical Services
Central DuPage, Edward, Good Samaritan, Loyola EMS Systems
Standard Operating Procedures**

PEDIATRIC ALTERED MENTAL STATUS

BLS/ALS

1. **Pediatric Initial Medical Care SOP**, p. 75
 - Immobilize spine as indicated
 - Consider other causes of altered mental status and treat per appropriate SOP
 - Assess respiratory effort
2. Obtain and record blood glucose level

ALS

3. Establish **VASCULAR ACCESS IV/IO**
4. If blood glucose < 60, administer:
 - **DEXTROSE**
 - > 8 years: D50% 2 mL/kg IV/IO
 - 1-8 years: D25% 2 mL/kg IV/IO
 - 1-12 months: D12.5% 4 mL/kg IV/IO
 - Neonate (1-28 days): D12.5% 2 mL/kg IV/IO
 - Newborn (<24 hours): D12.5% 2 mL/kg IV/IO
 - OR
 - **GLUCAGON**
 - > 8 years: 1 mg IM
 - ≤ 8 years: 0.5 mg IM
5. Reassess respiratory effort. If inadequate, administer:
 - **NARCAN** (naloxone) IV/IO/IM/IN
 - ≤ 20 kg or < 5 years of age: 0.1 mg/kg
 - > 20 kg or ≥ 5 years of age: 2 mg
6. If no response to **NARCAN** (naloxone), secure the airway as appropriate

Special Considerations

- **DEXTROSE**
 - > 8 years: During critical drug shortages of dextrose 50%, administer **Dextrose 10% 5 mL/kg (0.5 g/kg, max 25 g) slow IV**.
 - If patient remains hypoglycemic and symptomatic 5 minutes after initial dose, repeat **Dextrose 10% 5 mL/kg (0.5 g/kg, max 25 g) slow IV**.
- Consider causes:

A Alcohol, Abuse	T Trauma, Temperature
E Epilepsy, Electrolytes, Encephalopathy	I Infection, Inborn errors
I Insulin	P Psychogenic
O Opiates, Overdose	P Poison
U Uremia	S Shock, Seizures, Stroke, Space- occupying lesion, Subarachnoid hemorrhage, Shunt

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**PEDIATRIC SEIZURES / STATUS EPILEPTICUS
Non-traumatic origin**

BLS/ALS

1. **Pediatric Initial Medical Care SOP**, p. 75
 - Clear and protect airway. Vomiting/aspiration precautions.
 - Protect the patient from injury. Do not place anything in mouth if seizing.
 - Position patient on side unless contraindicated
2. Obtain and record blood glucose level, if available. If < 60, treat per **Pediatric Altered Mental Status SOP**, p. 88.

FEBRILE SEIZURES:

- Cool patient by removing clothing. Place towel or sheet moistened with tepid (room temperature) water over patient and fan the child. DO NOT induce shivering. DO NOT rub with alcohol or place in cold/ice water.
- Give nothing by mouth

IF ACTIVELY SEIZING:

ALS

3. Attempt venous access x 1.
 - If successful, administer **VERSED** (midazolam) **0.1 mg/kg IV**. If unsuccessful, administer **VERSED** (midazolam) **0.2 mg/kg IN** diluted to total of 2 mL x 1 dose only. Maximum initial dose 10 mg.
 - Reattempt venous access.
4. If seizures continue for > 5 minutes, administer **VERSED** (midazolam) **0.1 mg/kg slow IV/IO or IM q 2 minutes**.
5. Monitor airway status and intubate as indicated.

ALS ONLY – Use of patient prescribed medication – DIASTAT® (rectal Valium)

1. Trained paramedics may administer DIASTAT® (rectal Valium) to patients.
2. The patient should be actively seizing for > 3 minutes, or having repeated seizures without regaining consciousness, i.e. status epilepticus.
3. The identity of the patient and the name on the prescription must match.
4. The paramedic may assist and or administer DIASTAT® at the dose prescribed.
5. If any of these criteria are not met, follow **Pediatric Seizures/Status Epilepticus SOP**, p. 89.
6. Transport all patients who received this medication; if consent for transport is refused by parent/guardian/power of attorney for health care, contact Medical Control.
7. Call Medical Control for assistance with any refusals.

Note: If suspected that seizure is secondary to narcotic overdose, see **Pediatric Toxicologic Emergencies SOP**, p. 91.

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PEDIATRIC SHOCK

BLS / ALS

1. **Pediatric Initial Medical Care SOP**, p. 74
2. Supine position
3. Control bleeding as appropriate

ALS

4. Secure airway as appropriate

Obstructive Shock (Tension Pneumothorax)

5. **PLEURAL DECOMPRESSION**

Distributive Shock (Suspected Sepsis)

5. Establish **VASCULAR ACCESS IV/IO**
6. Administer **IV FLUID BOLUS of 20 mL/kg**
7. If suspected allergic reaction, refer to **Pediatric Allergic Reaction/Anaphylaxis SOP**, p. 87
8. If no response to initial fluid bolus, **repeat IV fluid bolus of 20 mL/kg**. May repeat x 2 to a maximum of 60 mL/kg.

Cardiogenic Shock (Congenital Heart Disease/Cardiac Surgery/Post-Cardiac Arrest)

5. Establish **VASCULAR ACCESS IV/IO**
6. Treat any cardiac rhythm disturbance per appropriate SOP
7. Consider **IV FLUID BOLUS of 20 mL/kg**
 - Caution: fluids may need to be restricted in cardiogenic shock

Hypovolemic Shock (Suspected Dehydration/Volume Loss/Hemorrhagic Shock)

5. Establish **VASCULAR ACCESS IV/IO**
6. Administer **IV FLUID BOLUS of 20 mL/kg**
7. If no response to initial fluid bolus, **repeat IV FLUID BOLUSES of 20 mL/kg**. May repeat x 2 to a maximum of 60 mL/kg.

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PEDIATRIC TOXICOLOGIC EMERGENCIES

BLS/ALS

STABLE: alert, normotensive

1. Pediatric Initial Medical Care SOP, p. 75

- HazMat precautions
- Do not initiate vomiting
- Contact Medical Control
- Initial interventions per Medical Control as indicated for identified exposure
- For altered level of consciousness or seizures, refer to appropriate SOP
- Support ABCs
- Keep warm
- Observe
- Bring container(s) of drug or substance to the ED
- Transport

ALS

UNSTABLE: altered mental status, airway compromise, and/or hypoperfusion

1. Pediatric Initial Medical Care SOP, p. 75

- HazMat precautions
- GCS score ≤ 8 and evidence of airway compromise: **CONSIDER INTUBATION/ADVANCED AIRWAY INSERTION.**
- Consider delaying intubation if known narcotic exposure.
- The use of Alternate Airway is contraindicated if ingestion of caustic substance.

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PEDIATRIC TOXICOLOGIC EMERGENCIES (CONTINUED)

NARCOTIC OVERDOSE OR unknown etiology with respiratory compromise

2. Protect airway and increase FiO₂ by mask or assist with BVM
3. Administer **NARCAN** (naloxone) **IV/IO/IM/IN**
 - ≤ 20 kg or < 5 years of age: 0.1 mg/kg
 - > 20 kg or ≥ 5 years of age: 2 mg
 - Consider **NARCAN** (naloxone) before intubation if able to maintain airway and ventilate

CYCLIC ANTIDEPRESSANT OVERDOSE

Hypoperfusion associate with wide QRS complex (possible cyclic ingestion)

2. Administer **IV FLUID BOLUS of 20 mL/kg** in increments
3. Administer **SODIUM BICARBONATE 8.4% 1 mEq/kg IV**

BETA-BLOCKER / CALCIUM CHANNEL BLOCKER OVERDOSE

Hypoperfusion associated with bradycardia (possible beta blocker or calcium channel blocker ingestion)

2. Administer **GLUCAGON 0.5 mg IV/IO**. May repeat x 1

POTENTIAL EXPOSURES

Burning overstuffed furniture	= Cyanide
Old burning buildings	= Lead fumes and carbon monoxide
Pepto-Bismol™ like products	= Aspirin
Pesticides	= Organophosphates and Carbamates
Common Plants	= Treat symptoms and bring plant/flower to ED

SMELLS

Almond	= Cyanide
Fruit	= Alcohol
Garlic	= Arsenic, parathion, DMSO
Mothballs	= Camphor
Natural gas	= Carbon monoxide
Rotten eggs	= Hydrogen sulfide
Silver polish	= Cyanide
Stove gas	= Think CO (CO and methane are odorless)
Wintergreen	= Methyl salicylate

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PEDIATRIC TOXICOLOGIC EMERGENCIES (CONTINUED)

ORGANOPHOSPHATE POISONING - excessive body secretions

- | | | |
|---|-----------|--|
| <p>D – Diarrhea
 U – Urination
 M – Miosis
 B – Bronchorrhea / Bronchospasm
 B – Bradycardia
 E – Emesis
 L – Lacrimation
 S – Salivation</p> | OR | <p>Salivation (excessive production of saliva)
 Lacrimation (excessive tearing)
 Urination (uncontrolled urine production)
 Defecation (uncontrolled bowel movement)
 Gastrointestinal distress (cramps)
 Emesis (excessive vomiting)
 Breathing Difficulty
 Arrhythmias
 Miosis (pinpoint pupils)</p> |
|---|-----------|--|

2. **ATROPINE 0.02 mg/kg (minimum 0.1 mg) rapid IV/IO q 3 minutes (no dose limit)**

CYANIDE POISONING - For known or suspected cyanide poisoning;

2. **AMYL NITRITE capsule broken and taped inside HIGH FiO₂ MASK or HIGH FiO₂ BVM** and begin transport. Replace capsules q 1 minute x 12 capsules.
OR *If available, may use HYDROXOCOBALAMIN (CYANOKIT[®]) as directed.
Note: these will not be exchanged at the hospital.
3. **INTUBATE only** if patient apneic after all 12 capsules of amyl nitrite used.
4. If hypotensive or pulseless, **IV FLUID BOLUS of 20 mL/kg**
 - If no response to initial fluid bolus, **repeat IV FLUID BOLUS of 20 mL/kg.**
May repeat x 2 to a maximum of 60 mL/kg.

CARBON MONOXIDE POISONING

- **HIGH FiO₂ BY MASK or ASSIST WITH HIGH FiO₂ BVM**
- Do not rely on pulse oximetry
- Keep patient as quiet as possible to minimize tissue oxygen demand

SUSPECTED CLUB DRUG OVERDOSE

2. Contact Medical Control for suspected use of club drugs

- | | |
|---|--|
| <u>Narcotics:</u> | Morphine, Demerol (meperidine), heroin, methadone, codeine, Duragesic (fentanyl), Vicodin/Lortab (APAP and hydrocodone), hydrocodone, Dilaudid (hydromorphone), Percocet (oxycodone and APAP), OxyContin (oxycodone) |
| <u>Cyclic Antidepressants:</u> | Elavil (amitriptyline), Norpramin (desipramine), Tofranil (imipramine), Pamelor (nortriptyline), Sinequan (doxepine) |
| <u>Benzodiazepines:</u> | Halcion (triazolam), Ativan (lorazepam), Restoril (temazepam), Versed (midazolam), Valium (diazepam), Xanax (alprazolam), Librium (chlordiazepoxide), Klonopin (clonazepam), Dalmane (flurazepam), Rohypnol (flunitrazepam), Ambien (zolpidem) |
| <u>Beta Blockers:</u> | Inderal (propranolol), Corgard (nadolol), Lopressor (metoprolol), Tenormin (atenolol), timolol |
| <u>Calcium Channel Blockers:</u> | Cardizem (diltiazem), Procardia (nifedipine), Calan/Adalat/Isoptin (verapamil), Norvasc (amlodipine) |
| <u>Club Drugs:</u> | GHB (Liquid G, Liquid Ecstasy), ketamine (Special K, Vitamin K, Super K), MDMA (Ecstasy, XTC, ADAM, E), Foxy Methoxy, AMT, Coricidin (Triple-C) |

Poison Center 1-800-222-1222

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PEDIATRIC NERVE AGENT ANTIDOTE GUIDELINE

	PATIENT AGE	ANTIDOTES (IV/IM)	
		MILD/MODERATE	SEVERE
INFANT	0-6 months (< 7 kg)	0.25mg Atropine 2 PAM [†] 15 mg/kg	0.5mg Atropine* 2 PAM [†] 25 mg/kg
INFANT	7 months-2 years (7-13 kg)	0.5mg Atropine* 2 PAM [†] 15 mg/kg	1mg Atropine* 300 mg 2 PAM [†]
CHILD	3-7yrs (14-25kg)	1mg Atropine* 300mg 2 PAM [†]	2mg Atropine 600 mg 2 PAM [†]
CHILD	8-14 yrs (26-50kg)	2mg Atropine 600 mg 2 PAM [†]	4mg Atropine 1200 mg 2 PAM [†]
ADOLESCENT	> 14 yrs (> 51 kg)	2mg Atropine 600 mg 2 PAM [†]	4mg Atropine 1200 mg 2 PAM [†]

* Appropriate dose Atropen auto injector can be used if available

[†] 2 PAM=Pralidoxime

DENOTES ONE MARK I KIT

DENOTES TWO MARK I KITS

2mg Atropine
600mg 2 PAM[†]

4mg Atropine
1200 mg 2 PAM[†]

NOTES:

For nerve agents the doses are:

- Atropine dose 0.05 mg/kg
- 2 PAM[†] dose 25 mg/kg

For children > 3 yrs with severe symptoms:

- 1 Mark I Kit will give 0.08 — 0.13 mg/kg Atropine
- 24-46 mg/kg 2 PAM[†]

2 PAM[†] solution can be prepared from the vial containing 1 gram of dessicated 2 PAM[†]. Inject 3 ml of NS or sterile water into the vial and shake well. This results in 3.3ml of 300 mg/ml.

Mild	Moderate	Severe
SOB, wheezing, runny nose	Vomiting, drooling, pinpoint pupils	Unconscious, cyanosis, seizures

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PEDIATRIC HEAT EMERGENCIES

BLS/ALS

1. Pediatric Initial Medical Care SOP, p. 75

- Complete Initial Assessment:
 - Hot, dry, flushed or ashen skin
 - Tachycardia
 - Tachypnea
 - Diaphoresis
 - Decreasing consciousness
 - Headache
 - Weak, thready or absent peripheral pulse
 - Hypotension
 - Profound weakness/fatigue
 - Vomiting
 - Muscle cramps

2. Assess scene for environmental risks to patient and rescuers

3. Place patient in cool environment and remove clothing as appropriate

Normal Level of Consciousness

4. Support ABCs

5. Give cool liquids by mouth if no nausea/vomiting

Decreased Consciousness

4. If blood glucose < 60, refer to **Pediatric Altered Mental Status SOP**, p. 88, for glucose administration guidelines

5. If seizures, refer to **Pediatric Seizures/Status Epilepticus SOP**, p. 89

6. If inadequate respiratory effort, secure airway as appropriate and support with BVM

7. **ALS**: Establish **VASCULAR ACCESS IV/IO**

8. **ALS**: Administer **IV FLUID BOLUS of 20 mL/kg**. May repeat x 2 to a total of 60 mL/kg.

9. Initiate active cooling

- Apply cool pack to head, neck, armpits, groin, behind knees and to lateral chest
- Tepid water by sponge or spray
- Manually fan body to evaporate water and facilitate cooling
- **Stop cooling if shivering occurs**

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PEDIATRIC COLD EMERGENCIES

BLS/ALS

1. Pediatric Initial Medical Care SOP, p. 75

- Complete Initial Assessment

Hypothermia Signs & Symptoms	Signs of Cardiopulmonary Compromise
<ul style="list-style-type: none"> • Pt complains of cold • Shivering • Decreased respiratory rate • Dysrhythmias • Dilated, sluggish pupils • Decreased reflexes • May mimic death 	<ul style="list-style-type: none"> • Weak, thready or absent peripheral pulse • Decreasing consciousness • Tachypnea/respiratory difficulty • Central cyanosis and coolness • Hypotension (late sign)

2. Place patient in warm environment. Remove wet clothing. Prevent further heat loss.

No Cardiopulmonary Compromise

3. Warm trunk, place heat packs to axilla and groin, taking care to avoid direct skin contact

Cardiopulmonary Compromise

3. Support ABCs; secure airway as appropriate
 4. Avoid unnecessary manipulation and rough handling
 5. Perform chest compressions if pulseless

<u>BLS</u>	<u>ALS</u>
<ul style="list-style-type: none"> • Consider AED if available • If advised, give ONE SHOCK ONLY • Resume CPR, do not re-analyze rhythm 	<ul style="list-style-type: none"> • For VF or pulseless VT consider DEFIBRILLATION at 2 J/kg • Give ONE SHOCK ONLY, then resume CPR • Do not re-analyze rhythm or give any additional shocks

6. Refer to appropriate SOP as indicated
 7. Warm trunk. Place heat packs to axilla and groin, taking care to avoid direct skin contact
 8. **ALS**: Establish **VASCULAR ACCESS IV/IO**
 9. Contact Medical Control
 10. Transport
 - Support ABCs
 - Observe
 - Keep warm

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PEDIATRIC INITIAL TRAUMA CARE (PITC)

BLS / ALS

- If a potential crime scene, make efforts to preserve integrity of potential evidence
 - Anticipate potential injuries based on the mechanism of energy transfer
1. **AIRWAY/C-SPINE: IMMOBILIZE SPINE** as indicated. Position for optimal airway and suction as needed.
 2. **BREATHING/VENTILATION:** Assess ventilatory status, expose chest as needed:
 - Auscultate breath sounds
 - Administer oxygen:
 - **SUPPLEMENTAL OXYGEN** via nasal cannula or blow-by method
 - If altered mental status, hemodynamically unstable, or meets Trauma Region Field Triage Criteria, **increase OXYGEN TO HIGH FiO₂** (increase LPM flow or use mask)
 3. Complete initial assessment, including:
 - Pediatric Trauma Score
 - Pediatric Glasgow Coma Scale (PCGS)

If inadequate ventilation, respiratory effort

- Open airway using modified jaw thrust
- Relieve upper airway obstruction as indicated
- **VENTILATE WITH HIGH FiO₂** via BVM

If unable to achieve adequate ventilation

- If PGCS score ≤ 8 , INTUBATE using in-line procedure
- **Refer to Pediatric Drug Assisted Intubation – Versed SOP**, p. 81, if indicated

If adequate ventilation, respiratory effort, or ventilations being provided as above

- Control hemorrhage
- Splint / immobilize fractures as indicated and time permits

ALS

4. Establish **VASCULAR ACCESS IV/IO**
5. Administer **IV FLUID BOLUS of 20 mL/kg**
6. Reassess perfusion. May repeat **IV FLUID BOLUS of 20 mL/kg x 2 up to total of 60 mL/kg as indicated.**
7. If unable to maintain airway with manual methods, consider intubation or age-appropriate cricothyroidotomy. **Do not delay transport to attempt invasive airway.**

If Cardiopulmonary Compromise

- Refer to **Pediatric Shock SOP**, p. 90, or **Pediatric Pulseless Arrest SOP**, p. 80

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PEDIATRIC INITIAL TRAUMA CARE (PITC)

If Seizure Activity

- Refer to **Pediatric Seizure/Status Epilepticus SOP**, p. 89

Suspected Spine Injury / Suspected Neurogenic Shock

8. If patient remains hypoperfused and remains bradycardic, consider **ATROPINE 0.02 mg/kg rapid IV/IO**. Minimum dose 0.1 mg. Repeat q 3 minutes up to 3 total doses.

Chest Injury

8. If sucking chest wound, apply occlusive dressing taped on three sides. If patient deteriorates, remove dressing temporarily to allow air to escape.
9. If suspected tension pneumothorax, **PLEURAL DECOMPRESSION** of affected side

Musculoskeletal Injuries

8. Consider analgesia, if patient hemodynamically stable:
 - Mild Pain: **NITROUS OXIDE** if available, per System-specific procedure
9. Moderate to Severe Pain: Administer **FENTANYL 1 mcg/kg SLOW IV/IO/IM, no repeat dose. Max dose 100 mcg**. Immobilize and/or splint. Monitor extremity perfusion. Elevate extremity and/or apply cold pack after splinting when appropriate.
10. If long bone fracture with displacement / spasm, and hemodynamically stable, consider administration of:
 - a. **VERSED (midazolam) 0.05 mg/kg IV/IO q 2 minutes** up to 0.2 mg/kg total, not to exceed 10 mg.
 - b. **If no IV/IO, VERSED (midazolam) 0.2 mg/kg IM x 1** in unaffected limb.

Amputation / Degloving Injuries

8. Stabilize with bulky dressing.
9. If uncontrolled bleeding continues, apply tourniquet above amputation as close as possible to the injury. Note time tourniquet applied. **DO NOT** release tourniquet once it has been applied.
10. Care of amputated parts:
 - Wrap in normal saline moistened gauze or towel. Place in plastic bag and seal. **DO NOT** immerse tissue directly in water or saline
 - Place plastic bag in second container filled with ice or cold water or place on cold packs and bring with patient to the hospital.

Signs of Cardiopulmonary Compromise

- Tachycardia
- Weak, thready or absent peripheral pulse
- Decreasing consciousness
- Tachypnea/Respiratory difficulty
- Central cyanosis and coolness
- Hypotension (late sign)
- Bradycardia and/or no palpable BP (ominous sign)

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PEDIATRIC HEAD TRAUMA

BLS / ALS

1. Pediatric Initial Trauma Care SOP, p. 97

- Maintain supine position
- Immobilize spine as indicated
- Assess Pediatric Glasgow Coma Scale (PGCS)
- **BLS**: Contact Medical Control

<u>PGCS 13-15 (Mild)</u>	<u>PGCS 9-12 (Moderate)</u>	<u>PGCS ≤ 8 (Severe)</u>
<ul style="list-style-type: none"> • Administer HIGH FiO₂ • Control hemorrhage • Reassess PGCS • Transport 	<ul style="list-style-type: none"> • Administer HIGH FiO₂ • Support ventilation with BVM as indicated • Control hemorrhage • Reassess PGCS • Transport 	<ul style="list-style-type: none"> • Administer HIGH FiO₂ • Support ventilation with BVM • <u>ALS</u>: INTUBATE orally as indicated • Control hemorrhage • Reassess PGCS • Refer to Pediatric Seizure/Status Epilepticus SOP as indicated, p. 88 • Transport

2. For the combative head injured patient, consider **VERSED** (midazolam) **0.05 mg/kg slow IV/IO**. May repeat x 1 after 5 minutes if needed. Maximum total dose 10 mg.
- If no vascular access, may administer **VERSED** (midazolam) **IM**:
 - < 70 kg = 5 mg
 - ≥ 70 kg = 10 mg

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PEDIATRIC GLASGOW COMA SCALE (PGCS)				
	> 1 Year	< 1 Year	Score	
EYE OPENING	Spontaneously	Spontaneously	4	
	To verbal command	To shout	3	
	To pain	To pain	2	
	No response	No response	1	
MOTOR RESPONSE	Obeys	Spontaneous	6	
	Localizes pain	Localizes pain	5	
	Flexion-withdrawal	Flexion-withdrawal	4	
	Flexion-abnormal (decorticate rigidity)	Flexion-abnormal (decorticate rigidity)	3	
	Extension (decerebrate rigidity)	Extension (decerebrate rigidity)	2	
	No response	No response	1	
	> 5 Years	2-5 Years	0-23 months	
VERBAL RESPONSE	Oriented	Appropriate words/phrases	Smiles/coos appropriately	5
	Disoriented/confused	Inappropriate words	Cries and is consolable	4
	Inappropriate words	Persistent cries and screams	Persistent inappropriate crying and/or screaming	3
	Incomprehensible sounds	Grunts	Grunts, agitated, and restless	2
	No response	No response	No response	1
TOTAL PEDIATRIC GLASGOW COMA SCORE:			(3-15)	

PEDIATRIC TRAUMA SCORE (PTS)			
Component	+ 2	+ 1	- 1
Size	Child/adolescent > 20 kg	Toddler 11 – 20 kg	Infant ≤ 10 kg
Airway	Normal	Maintainable	Unmaintained or Intubated
Systolic BP	> 90 mmHg	50 – 90 mmHg	< 50 mmHg
CNS	Awake	Obtunded/Lost consciousness	Coma/Unresponsive
Skeletal Injury	None	Closed Fracture	Open/Multiple Fractures
Open Wounds	None	Minor	Major/Penetrating

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PEDIATRIC BURNS (THERMAL, ELECTRICAL, CHEMICAL)

BLS / ALS

1. Assess scene safety
 - Remove patient to safety
 - Use standard precautions
2. **Pediatric Initial Trauma Care SOP**, p. 97
 - Stop the burning process
 - Complete initial assessment, assess for:
 - Stridor
 - Wheezing
 - Grunting
 - Decreased respirations or apnea
 - Retractions
 - Tachypnea
 - Decreasing consciousness
 - Assess percentage/depth of burn
 - Remove constricting jewelry and clothes

Thermal Burns

Superficial (1st degree)

3. **Cool burned area** with water or saline
 - If < 20% TBSA, apply sterile saline soaked dressings. **DO NOT OVER COOL** major burns or apply ice directly to burned areas.

Partial or Full Thickness (2nd or 3rd degree)

3. **DO NOT cool burned area**
 - Wear gloves/mask while burn areas exposed
 - **DO NOT** break blisters
 - Cover burn wound with DRY sterile dressings
 - Place patient on clean sheet on stretcher and cover patient with dry clean sheets and blanket to maintain body temperature
 - Refer to **Pediatric Shock SOP**, p. 90, as indicated

Inhalation Burns

3. Note presence of wheezing, hoarseness, stridor, carbonaceous (black) sputum/cough, singed nasal hair/eyebrows/eyelashes
 - Administer **HIGH FiO₂ BY MASK** or **ASSIST WITH HIGH FiO₂ BVM**

ALS

- Consider **ADVANCED AIRWAY** if inadequate ventilation. If **ADVANCED AIRWAY** placement unsuccessful, consider age-appropriate **CRICOTHYROIDOTOMY**.
- If wheezing, consider **ALBUTEROL 2.5 mg (3 mL)** or **XOPENEX 1.25 mg (3 mL) via nebulizer**; may repeat x 1.

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PEDIATRIC BURNS (THERMAL, ELECTRICAL, CHEMICAL) (Continued)

Electrical Burns

3. Treatment:

- Immobilize as indicated
- Identify and document all entrance and exit wounds
- Assess neurovascular status of affected part(s)
- Cover wounds with dry sterile dressings

ALS

- Monitor ECG rhythm

Chemical Burns

3. Treatment:

- Refer to System-specific HazMat policy
- If powdered chemical, brush away excess
- Remove clothing if possible
- Flush burn area with copious amounts of sterile water or normal saline ASAP and during transport
- If eye involvement:
 - Assess visual acuity
 - Remove contact lenses and irrigate with saline or sterile water continuously. **DO NOT CONTAMINATE THE UNINJURED EYE DURING IRRIGATION.**

ALS

- If pain, instill **TETRACAINE 1 drop** per eye for pain control

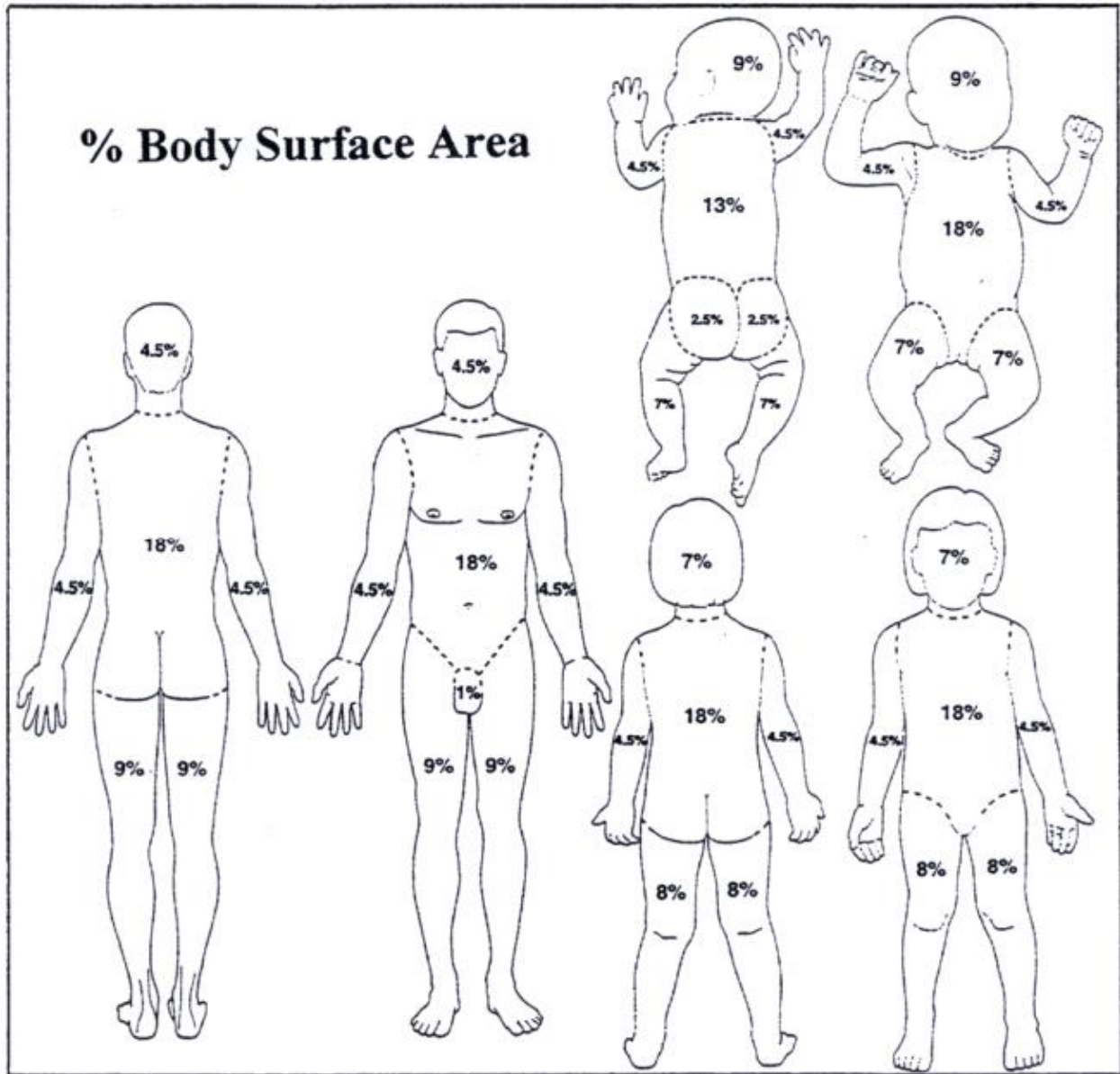
ALS

4. Assess cardiac rhythm and treat per appropriate SOP
5. Establish **VASCULAR ACCESS IV/IO**
 - Avoid involved areas/extremity
6. Contact Medical Control
7. Transport
 - Support ABCs
 - Observe
 - Keep warm

SPECIAL CONSIDERATIONS:

- Assess for potential child abuse and follow appropriate reporting mechanism.
- Keep the child warm and protect from hypothermia. Be cautious with cool dressings.
- Consider **FENTANYL 1 mcg/kg SLOW IV or IM, max dose 100 mcg. No repeat dose.**
- Consider transport to a Burn Center.

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Palm of hand (including fingers) of infant or child ~ 1% of the total body surface area

**Illinois Region 8 Emergency Medical Services
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PEDIATRIC NEAR DROWNING

BLS / ALS

1. Pediatric Initial Trauma Care SOP, p. 97

- If inadequate ventilation and respiratory effort:
 - Open airway maintaining in-line C-spine stabilization;
 - Modified jaw thrust maneuver
 - Suction
 - Relieve upper airway obstruction as indicated
 - Reassess airway patency
 - If obstructed, refer to **Pediatric Respiratory Arrest SOP**, p. 82, or **Pediatric Pulseless Arrest SOP**, p. 80

2. IMMOBILIZE SPINE as indicated

3. Complete initial assessment

4. Prevent further heat loss

- Remove wet clothing
- Warm trunk as indicated. Place heat packs to axilla and groin, taking care to avoid direct skin contact.

5. ALS: Establish VASCULAR ACCESS IV/IO

6. Refer to **Pediatric Cold Emergencies SOP, p. 96, or **Pediatric Seizure/Status Epilepticus SOP**, p. 89, as indicated**

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SUSPECTED CHILD ABUSE / NEGLECT

BLS/ALS

1. **Pediatric Initial Medical Care SOP**, p. 75, or **Pediatric Initial Trauma Care SOP**, p. 97
2. Treat obvious injuries per appropriate SOP
3. History, physical exam, scene survey as usual, and document findings on patient care report
4. **TRANSPORT**. Report your suspicions to ED staff upon arrival.
 - Transport is mandatory
 - Contact Medical Control if parent/legal guardian is refusing
5. Notify Illinois Department of Children and Family Services (DCFS):
 - **1-800-25-ABUSE** (24-hour phone line)

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Addendum Section

In order to move the science of Emergency Medical Services forward, the EMS Medical Directors have added this section to the SOPs.

Here, the Region will place protocols that are presently "System-specific." These SOPs may be used within a System in the Region, but at the present time are **not universally in effect** for all the Systems. Medical Control direction for these SOPs must come from a hospital in the System that uses these SOPs.

Examples:

- Clinical Criteria for Initial Assessment of Spine Injury
- Use of Morgan Lens in chemical Splash/Burns to the Eyes

It is our intention to distribute the System-specific SOPs to the entire Region to see, examine, evaluate and discuss so that they may be discussed within your primary System and evaluate their usefulness to the provider in the field.

We anticipate that all SOPs will be reviewed biennially. When this process takes place, the EMS Medical Directors will evaluate the Addendum Section and determine which of the System-specific SOPs will be added Region-wide.

Our intention is to utilize this section for the advancement of the Region as a whole, and to develop the finest EMS Region in the State.

Respectfully,

The Region 8 EMS Medical Directors

**Illinois Region 8 Emergency Medical Services
Central DuPage, Edward EMS Systems
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CLINICAL CRITERIA FOR INITIAL ASSESSMENT OF SPINE INJURY

This exam should only be performed if the **Mechanism Of Injury (MOI)** is uncertain or questionable. Immobilize the patient immediately if any component of the exam is positive. See algorithm.

ASSESSMENT STEPS

1. Determine MOI. If positive, immobilize. If MOI is uncertain or questionable for injury to spine, proceed to step 2.
2. While assessing patient reliability, the patient's C-spine should be immobilized manually by a second rescuer.
3. If patient found unreliable, immobilize the patient. If reliable, proceed to step 4.
4. Question the patient about pain in neck / back. If negative, palpate spine for tenderness. If positive, immobilize. If negative, proceed to step 5.
5. Perform motor and sensory exam. If there are any abnormalities, immobilize the patient. If no abnormalities, proceed to step 6.
6. Reassess the reliability of the patient and consider pre-existing conditions that place the patient at higher risk of spinal injury.
7. If the clinical exam clears the spine, document appropriately and proceed with call. If patient condition changes at any time, immobilize.

SEE TEACHING POINTS ON NEXT PAGE

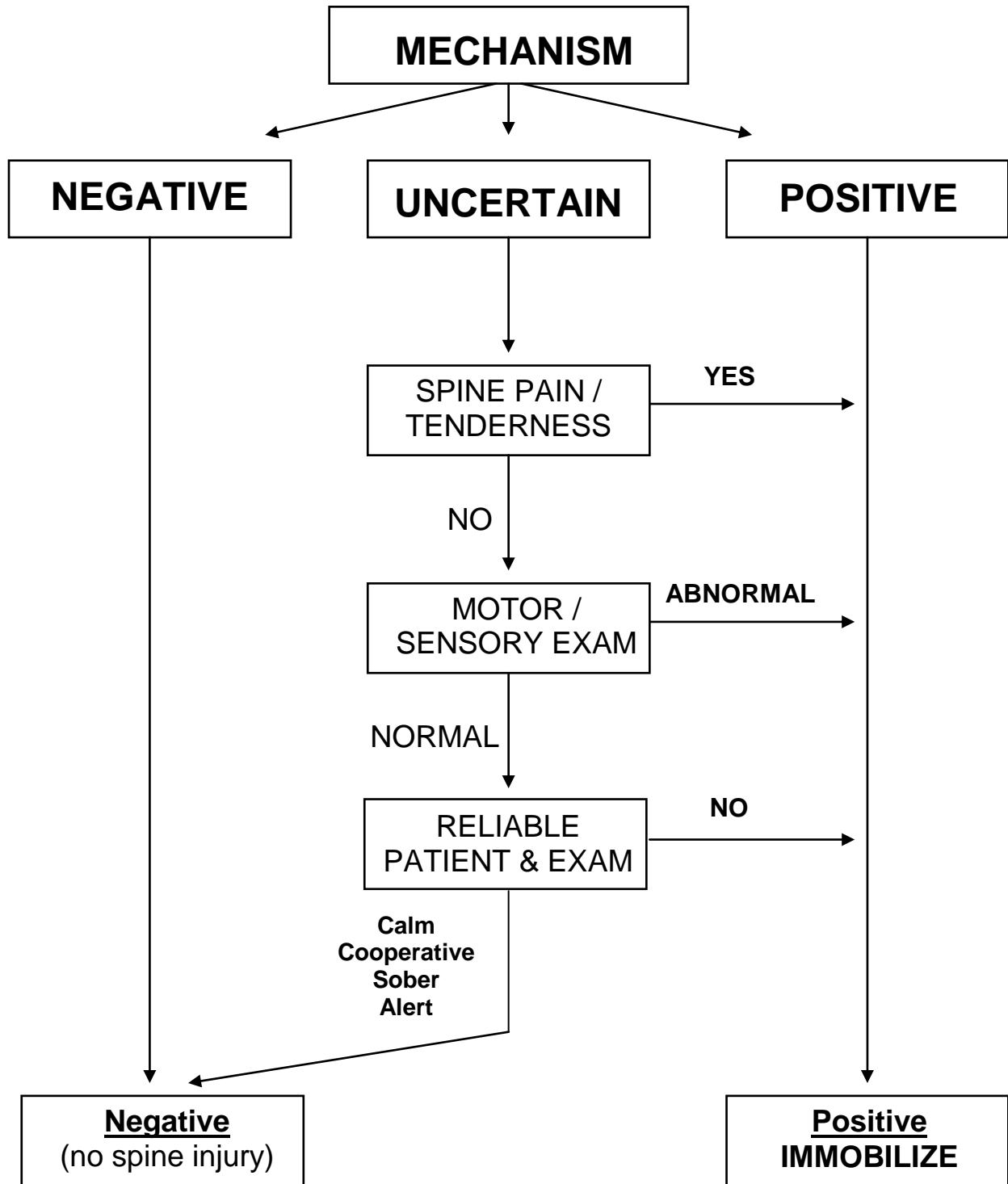
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SUMMARY OF TEACHING POINTS

- A. Initial spine injury assessment in the presence of "positive mechanism" or a "negative mechanism" is based on the mechanism of injury alone. Paramedics are encouraged to perform and document a negative exam on all trauma patients not immobilized.
- B. Clinical criteria are used for initial spinal injury assessment in the presence of an "uncertain mechanism."
- C. Most spine injuries, but not all, present with spine pain or tenderness in reliable patients.
- D. A normal neurologic examination in the field requires the testing of both motor and sensory function at both the C-spine and lumbosacral spine and both sides of the body.
- E. Assessment of the spine for pain, tenderness, motor function and sensory function by clinical criteria requires that the patient is reliable, i.e., calm, cooperative, sober and alert at the time of the assessment.
- F. An unreliable patient exam can be caused by sympathetic ASR brain injury, intoxication, abnormal mental status, distracting injuries or communication problems.
- G. The use of clinical criteria for spine injury assessment requires knowledge, judgment, common sense, and careful attention on the part of the examiner.
- H. When in doubt, treat the patient as a "positive spine injury".
- I. See algorithm "Clinical Criteria for Initial Assessment of Spine Injury".
- J. Patients with thoracic or lumbar findings on exam should be placed on a backboard and appropriately immobilized with straps.
- K. Pre-existing physical conditions - Patients with pre-existing conditions that increase risk of injury to the spine must be very carefully assessed for reliability. Conditions that raise suspicion include:
 - ◆ Rheumatoid arthritis
 - ◆ Osteoporosis
 - ◆ Down's syndrome
 - ◆ Ankylosing spondylitis
 - ◆ Known metastatic disease (cancer)
- L. Very young patients - Children ≤ 8 years are not considered reliable to participate in the exam. Children age 9 or older must be carefully assessed for reliability. The age of 9 does not denote reliability.
- M. Consider seizure patients positive for MOI and immobilize them unless bystanders can give history of negative mechanism during a seizure.

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CLINICAL CRITERIA FOR INITIAL ASSESSMENT OF SPINAL INJURY



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USE OF MORGAN LENS IN CHEMICAL SPLASH / BURNS TO THE EYES

ALS

1. Instill **0.5% TETRACAINE 1 drop** to each affected eye. May repeat until pain is relieved.
2. Insert **MORGAN LENS** into eye using 1 L Normal Saline IV solution as irrigation fluid.
3. Open IV tubing roller clamp and adjust flow to a level that is well tolerated by the patient.
4. Continue irrigation while enroute to the hospital.
5. Patch unaffected eye.

Note: If the patient has exposed eye to adhesive/glue, do not force eyelids open. Gently irrigate using manual flushing until eye can be opened without difficulty. Contact Medical Control for further instructions.

**Illinois Region 8 Emergency Medical Services
Edward EMS System
Standard Operating Procedures**

HYDROXOCOBALAMIN (CYANOKIT®) ADMINISTRATION

Scene Size-up

Scene Safety – If necessary, mitigate any hazardous materials and/or chemicals that may impair, or pose a danger to, the rescuer prior to treatment.

ALS

1. Consider advanced airway procedures if the patient has GCS \leq 8, inhalation burns, bradypnea/tachypnea, hoarse voice and/or impending airway closure.
2. Consider 12-lead ECG
3. Establish IV
4. If signs and symptoms consistent with cyanide poisoning, administer hydroxocobalamin (Cyanokit®).
 - Administer 5 g over 15 minutes (15 mL/min)
 - Pediatrics dose 70 mg/kg (reconstituted solution is 25 mg/mL)
 - If hydroxocobalamin (Cyanokit®) unavailable, refer to Region VIII SOP for Cyanide Poisoning (p. 35 – Adults, p. 92 – Pediatrics)
5. Contact Medical Control
6. Transport and monitor patient, reassess vital signs every 5 minutes

Signs of Cyanide Poisoning

- Altered Mental Status
- Confusion, Disoriented
- Tachypnea/Hyperpnea (early)
- Bradypnea/Apnea (late)
- Seizures or Coma
- Mydriasis (dilated pupils)
- Hypertension (early)/
Hypotension (late)
- Cardiovascular collapse
- Vomiting

Symptoms of Cyanide Poisoning

- Headache
- Confusion
- Dyspnea
- Chest Tightness
- Nausea

Special Considerations: Hydroxocobalamin (Cyanokit®) requires its own dedicated IV line. Do not use existing IV line for administration. Do not piggyback.

DRUG NAME	ADULT DOSE / ROUTE	PEDIATRIC DOSE / ROUTE	ACTION	INDICATIONS	CONTRA-INDICATIONS	ADVERSE REACTIONS
Adenocard (adenosine) Classification: Antiarrhythmic	Initial dose of 6 mg rapid IV (over 1-2 seconds) followed immediately by 10 mL rapid saline flush and extremity elevation. If first dose does not eliminate rhythm in 1-2 minutes, give 12 mg rapid IV followed by 10 mL rapid saline flush and extremity elevation. May repeat second dose (12 mg) once (3 doses total).	Initial dose of 0.1 mg/kg rapid IV/IO over 1-2 seconds followed immediately by ≥ 5 mL rapid saline flush and extremity elevation. Max initial dose 6 mg. If first dose does not eliminate rhythm in 1-2 minutes, give 0.2 mg/kg rapid IV/IO followed immediately by ≥ 5 mL rapid saline flush and extremity elevation. Max repeat dose 12 mg. May repeat second dose (0.2 mg/kg) once (3 doses total).	Slows conduction of electrical impulses at AV node.	Stable reentry SVT, including that associated with accessory bypass tracts (Wolff-Parkinson-White Syndrome), unresponsive to vagal maneuvers. Does not convert atrial fibrillation, atrial flutter or ventricular tachycardia.	Sick sinus syndrome, 2 nd or 3 rd degree AV block or poison- or drug-induced tachycardia. Atrial fibrillation/flutter with underlying WPW syndrome. Symptomatic bradycardia except those with functioning pacemakers.	Common reactions are generally mild and short-lived: sense of impending doom, flushing, chest pressure, throat tightness, numbness. Patients will have a brief episode of one or more transient dysrhythmias, which may include asystole, following administration. Adenosine is a respiratory stimulant; can exacerbate asthma.
Albuterol (Proventil, Ventolin) Classification: Bronchodilator, beta agonist	2.5 mg of 0.83% (3 mL) via nebulizer (6 LPM oxygen) until mist stops, usually 5-15 minutes.		Binds and stimulates beta-2 receptors, resulting in bronchial smooth muscle relaxation and bronchodilation.	Asthma, bronchitis with bronchospasm, COPD with wheezing, allergic reaction/anaphylaxis with wheezing.	Angioedema, hypersensitivity to albuterol or levalbuterol. Use in caution with lactating patients, cardiovascular disease history.	Hyperglycemia, hypokalemia, palpitations, tachydysrhythmias, anxiety, tremors, nausea/vomiting, throat irritation, dry mouth, hypertension, insomnia, headache, paradoxical bronchospasm.
Amiodarone (Cordarone) Classification: Antiarrhythmic	<u>Ventricular Tachycardia with a Pulse:</u> 150 mg IV/IO over 10 minutes <u>Pulseless Ventricular Tachycardia/ Ventricular Fibrillation:</u> 300 mg IV/IO bolus. Repeat dose of 150 mg IV/IO bolus.	NOT FOR PEDIATRIC USE	Increases the cardiac refractory period without influencing the resting membrane potential. Relaxes smooth muscles, reduces peripheral vascular resistance, and slightly increases cardiac index.	Pre- and post-defibrillation in ventricular fibrillation and unstable ventricular tachycardia, persistent stable ventricular tachycardia.	Hypokalemia, hypomagnesemia, cardiogenic shock, sinus bradycardia, 2 nd or 3 rd degree AV block.	Hypotension, bradycardia, AV block, dysrhythmias, acute respiratory distress syndrome (ARDS), malaise, ataxia, dizziness, paresthesias, nausea, vomiting. May prolong QT.

DRUG NAME	ADULT DOSE / ROUTE	PEDIATRIC DOSE / ROUTE	ACTION	INDICATIONS	CONTRA-INDICATIONS	ADVERSE REACTIONS
Amyl Nitrite Classification: Special purpose/toxicology	Break capsule, tape into bag valve mask while ventilating with 100% oxygen. Change capsule once per minute.		Causes oxidation of hemoglobin to the compound methemoglobin, which reacts with toxic cyanide ion to form cyanomethemoglobin, which can be enzymatically degraded.	Cyanide poisoning (occurs frequently in patients with smoke inhalation from residential or industrial fires).	No contraindications to emergency use. Use with caution in pregnancy, pediatrics, hypotension, known cardiac disease or alcohol ingestion.	Hypotension, headache, tachycardia, excessive methemoglobin (blue skin/mucosa), cardiovascular collapse.
Aspirin Classification: Antiplatelet agent	324 mg (4 x 81 mg chewable tablets), chewed and swallowed. NOTE: Supplement dose to ensure patient has received 324 mg within the past 8 hours.	NOT FOR PEDIATRIC USE	Given as an early potent anticoagulant. Blocks formation of thromboxane alpha-2, which causes platelets to aggregate (clump together) and form plugs that cause obstruction or constriction of small coronary arteries. Reduces overall mortality of acute MI and reduces non-fatal re-infarction.	Suspected acute coronary syndrome (ACS) or chest pain suspicious of cardiac origin.	GI bleeding/active ulcers, hemorrhagic stroke, history of bleeding or clotting disorders, known hypersensitivity. Use with caution if history of asthma. If patient is on Brilinta (ticagrelor), contact Medical Control prior to administration. Pregnancy risk Class C (use with caution), except for third trimester, risk Class D (contraindicated unless ordered by Medical Control).	Anaphylaxis, angioedema, bronchospasm, bleeding, stomach irritation, nausea and vomiting, bleeding, tinnitus.

DRUG NAME	ADULT DOSE / ROUTE	PEDIATRIC DOSE / ROUTE	ACTION	INDICATIONS	CONTRA-INDICATIONS	ADVERSE REACTIONS
Atropine Classification: Anticholinergic NOTE: Nerve gas dosages not included in drug appendix.	<u>Bradycardia:</u> 0.5 mg rapid IV/IO or 1 mg ET q 3 minutes up to 3 mg total. <u>Organophosphate Poisoning:</u> 2 mg rapid IV/IO q 3 minutes. No max dose.	<u>Bradycardia:</u> 0.02 mg/kg rapid IV/IO or 0.03 mg/kg ET q 3 minutes. Max single dose of 0.5 mg ≤ 8 years, 1 mg > 8 years. Max total dose of 1 mg ≤ 8 years, 2 mg > 8 years. <u>Organophosphate Poisoning:</u> 0.02 mg/kg rapid IV/IO q 3 minutes. Minimum dose 0.1 mg. No max dose.	Competes with acetylcholine at the site of the muscarinic receptor. Receptors affected include salivary, bronchial, sweat glands, eyes, heart and GI tract (most-to-least sensitive). Increases SA and AV node conduction.	Symptomatic bradycardia, nerve agent exposure, organophosphate poisoning.	Acute myocardial infarction, myasthenia gravis, GI obstruction, closed-angle glaucoma, known sensitivity to atropine/belladonna alkaloids or sulfites. Not effective for infranodal heart blocks (2 nd degree type II or 3 rd degree).	Decreased secretions/dry mouth, intense facial flushing and hot skin temperature, blurred vision or pupil dilation and photophobia, tachycardia, restlessness. May cause paradoxical bradycardia if dose administered is too low or given too slowly.
Benadryl (diphenhydramine) Classification: Antihistamine	50 mg IM or slow IV	1 mg/kg IM or slow IV/IO. Max dose 50 mg.	Binds and blocks histamine-1 receptors.	Allergic reactions and anaphylaxis.	Acute asthma (thickens bronchial secretions). Caution in presence of CNS depressants like alcohol and drugs, cardiac history, known sensitivity.	Drowsiness/sedation, dizziness, headache, excitable state (paradoxical reaction in some children), wheezing/thickening of bronchial secretions, chest tightness, palpitations, hypotension, blurred vision, dry mouth, nausea/vomiting, diarrhea.
Benzocaine (Cetacaine, Hurricaine, Endocaine) Classification: Local (topical) anesthetic	0.5-1 second spray in posterior pharynx. May repeat x 1 in 30 seconds.		Topical anesthetic for mucous membranes.	Drug assisted intubation. Blunts the gag reflex.	Sensitivity	Suppression of gag reflex. DO NOT EXCEED dosing to avoid risk of possible methemoglobinemia.

DRUG NAME	ADULT DOSE / ROUTE	PEDIATRIC DOSE / ROUTE	ACTION	INDICATIONS	CONTRA-INDICATIONS	ADVERSE REACTIONS
<p>Dextrose</p> <p>Classification: Antihypoglycemic</p>	<p>25 g/50 mL of 50% solution IV push.</p> <p>During critical drug shortages of Dextrose 50%, administer Dextrose 10% 12.5 g/125 mL solution IV.</p>	<p><u>> 8 years old:</u> 2 mL/kg of 50% solution During critical drug shortages of Dextrose 50%, administer Dextrose 10% 5 mL/kg (0.5 g/kg, max 25 g) slow IV. Repeat Dextrose 10% 5 mL/kg (0.5 g/kg, max 25 g) slow IV.</p> <p><u>1-8 years old:</u> 2 mL/kg of 25% solution</p> <p><u>< 1 year old:</u> 4 mL/kg of 12.5% solution</p> <p><u>Newborn/Neonate:</u> 2 mL/kg of 12.5% solution</p>	<p>Increased blood glucose concentrations.</p>	<p>Hypoglycemia</p>	<p>Intracranial and intraspinal hemorrhage, hypovolemia, hypotension secondary to tachydysrhythmias, delirium tremens.</p>	<p>Hyperglycemia, warmth/burning from IV injection, diuresis, thrombophlebitis, tissue necrosis if IV/IO infiltrates.</p>
<p>Dopamine (Intropin)</p> <p>Classification: Adrenergic agonist, inotrope</p>	<p>IV/IO piggyback infusion of 5-20 mcg/kg/min</p> <p>1600 mcg/mL concentration premix infusion (400 mg/250 mL OR 800 mg/500 mL)</p>	<p>NOT FOR PEDIATRIC USE</p>	<p>Stimulate dopaminergic, beta-1 and alpha receptors in a dose-related fashion, Used in beta-1 range for positive chronotropic and inotropic effect, to raise blood pressure.</p>	<p>Symptomatic hypotension in the absence of hypovolemia, secondary to cardiogenic/neurogenic/septic shock, bradycardia refractory to atropine.</p>	<p>Known sensitivity, including sulfites. Pheochromocytoma, hypotension due to hypovolemia or tachydysrhythmia.</p>	<p>Tachydysrhythmia, palpitations, ventricular irritability, nausea and vomiting, hypertension, headache, angina, tissue necrosis if IV/IO infiltrates.</p>

DRUG NAME	ADULT DOSE / ROUTE	PEDIATRIC DOSE / ROUTE	ACTION	INDICATIONS	CONTRA-INDICATIONS	ADVERSE REACTIONS
Epinephrine (adrenalin) Classification: Adrenergic agonist, inotrope	<u>Cardiac Arrest:</u> 1 mg (10 mL) of 1:10,000 solution IV/IO <u>OR</u> 2 mg (2 mL) of 1:1000 ET (dilute to total of 10 mL with NS) Repeat q 3 minutes as long as patient is pulseless.	0.1 mL/kg (0.01 mg/kg) of 1:10,000 solution IV/IO (also for bradycardias) <u>OR</u> Consider 0.1 mL/kg (0.1 mg/kg) of 1:1000 ET (dilute with 2 mL of NS) Repeat q 3 minutes as long as patient is pulseless.	Stimulates alpha and beta receptors. Results in increased blood pressure, increased heart rate, bronchodilation.	Cardiac arrest, allergic reaction, anaphylaxis, acute asthma/COPD with wheezing, croup/epiglottitis.	None in cardiac arrest or anaphylaxis. Use with caution if not in arrest and patient has history of hypertension, angina, CAD or hyperthyroidism.	Palpitations, tachycardia, hypertension, angina, anxiety, tremors, headache.
		<u>Newborn Resuscitation:</u> 0.1 mL/kg 1:10,000 IV/IO q 3-5 min <u>OR</u> 0.5 mL/kg 1:10,000 ET q 3-5 min.				
	<u>Allergic Reaction/ Bronchospasm:</u> 0.3 mg (0.3 mL) of 1:1000 solution IM.	1:1000 (1 mg/1 mL) IM: ≤ 10 kg = 0.1 mg 11-20 kg = 0.2 mg ≥ 21 kg = 0.3 mg				
	<u>Anaphylaxis:</u> 0.5 mg (5 mL) of 1:10,000 solution IV/IO <u>OR</u> 1 mg (10 mL) 1:10,000 ET <u>OR</u> 0.5 mg (0.5 mL) 1:1000 IM. May repeat q 3 minutes.	0.1 mL/kg (0.01 mg/kg) of 1:10,000 solution IV/IO <u>OR</u> 0.01 mL/kg (0.01 mg/kg) of 1:1000 solution IM. 0.02 May repeat IV dose q 3 minutes.				
	<u>Croup/Epiglottitis:</u> 3 mg (3 mL) of 1:1000 solution via nebulizer.	3 mg (3 mL) of 1:1000 solution via nebulizer.				

DRUG NAME	ADULT DOSE / ROUTE	PEDIATRIC DOSE / ROUTE	ACTION	INDICATIONS	CONTRA-INDICATIONS	ADVERSE REACTIONS
Etomidate (Amidate) Classification: Hypnotic	<u>Intubation—Head Injury/Medical:</u> 0.6 mg/kg rapid IV/IO. Max dose 40 mg. No repeat dose.	NOT FOR PEDIATRIC USE	Non-barbiturate hypnotic without analgesic properties. Has minimal effects on cardiac or respiratory symptoms, Onset 10-20 seconds, duration 3-5 minutes.	Sedation for endotracheal intubation.	Hypersensitivity. Use in pregnancy only if potential benefit justifies potential risk to fetus.	Hypotension, respiratory depression, injection site pain, temporary involuntary muscle movements, frequent nausea and vomiting, hyper- or hypo-ventilation, short duration apnea, hiccups, laryngospasm, snoring, tachypnea, hypertension, dysrhythmias.
Fentanyl (Sublimaze) Classification: Opioid analgesic	1 mcg/kg (max 100 mcg) slow IV (over 1-2 minutes) or IM. Repeat dose of 0.5 mcg/kg (max 50 mcg) slow IV or IM. <u>> 65 years old:</u> 0.5 mcg/kg (max 50 mcg) slow IV or IM. Repeat dose of 0.25 mcg/kg (max 25 mcg) slow IV or IM.	1 mcg/kg, not to exceed adult max dose. No repeat dose.	Potent narcotic analgesic with rapid onset and short duration (30-60 minutes). Binds to opiate receptors creating analgesia and sedation.	Moderate-to-severe pain ($\geq 4/10$) management.	Known hypersensitivity to fentanyl or other opioid analgesics. Do not give to pediatrics less than 2 years of age. Hypotension. Note: Normal pediatric systolic BP = $80 + 2x$ age	Respiratory depression, hypotension, bradycardia, muscle rigidity, delirium, dizziness, headache, nausea, vomiting. Rapid infusion may cause chest wall rigidity.
Glucagon (GlucaGen) Classification: Hormone, antihypoglycemic agent	<u>Diabetic/Glucose Emergencies:</u> 1 mg IM <u>Beta/Calcium Channel Blocker Overdose:</u> 1 mg slow IV/IO, may repeat x 1	<u>Diabetic/Glucose Emergencies:</u> > 8 years: 1 mg IM ≤ 8 years: 0.5 mg IM <u>Beta/Calcium Channel Blocker Overdose:</u> 0.5 mg IV/IO, may repeat x 1	Causes a breakdown of stored glycogen into glucose. Independent of beta blockade, positive inotropic and chronotropic and improved AV conduction.	Hypoglycemic patient without venous access. Beta or calcium channel blocker overdose with symptomatic bradycardias including AV blocks (dosage required usually exceeds that available in pre-hospital setting).	Hypersensitivity to glucagon or proteins.	Nausea/vomiting, dizziness, headache.
Glucose, oral (Glucose 15) Classification: Oral antihypoglycemic agent	One tube (15 g of delivered glucose)		Carbohydrate, increases serum glucose level (onset of approximately 10 minutes).	Hypoglycemia in patients with normal mental status and intact gag reflex.	Altered mental status, no gag reflex.	Nausea, potential for aspiration in patients with impaired airway reflexes.

DRUG NAME	ADULT DOSE / ROUTE	PEDIATRIC DOSE / ROUTE	ACTION	INDICATIONS	CONTRA-INDICATIONS	ADVERSE REACTIONS
Lidocaine (Xylocaine) Classification: Antiarrhythmic (Class 1b)	1 mg/kg (max dose 100 mg) increments up to 3 mg/kg IV/IO or 2 mg/kg increments (max dose 200 mg) up to 6 mg/kg ET. IV/IO rebolus at 0.5 mg/kg increments (max dose 50 mg) or 1 mg/kg increments (max dose 100 mg) ET.	NOT FOR PEDIATRIC USE	Exerts antidysrhythmic action by suppressing automaticity in the His-Purkinje system and by elevating electrical stimulation threshold for ventricular dysrhythmias. Use to lower the threshold for electrical conversion.	Pre-and post-defibrillation in ventricular fibrillation and unstable ventricular tachycardia, persistent stable ventricular tachycardia.	AV blocks, ST-elevation in leads II, III and aVF (possible Inferior Wall MI), bleeding, thrombocytopenia, known sensitivity to lidocaine, sulfite or paraben. Use with caution if history of liver or renal disease, CHF, hypoxia or elderly.	Toxicity (signs may include anxiety, apprehension, euphoria, nervousness, disorientation, dizziness, blurred vision, other CNS changes), seizures without warning, hypotension, pain at injection site.
Narcan (naloxone) Classification: Opioid antagonist	1 mg IV/IN q 2 minutes up to total of 2 mg as needed.	≤ 20 kg or < 5 YO: 0.1 mg/kg IV/IO/IM/IN >20 kg or ≥ 5 YO: 2 mg IV/IO/IM/IN	Binds the opioid receptor and blocks the effects of narcotics.	Narcotic overdoses, reversal of administered narcotics.	None	Withdrawal symptoms, tachycardia, hypertension, seizures. Consider restraint use.
Nitroglycerine (NitroStat) Classification: Antianginal agent	0.4 mg sublingual tablet (1/150 gr) <u>OR</u> 0.4 mg SL spray	Contact Medical Control	Smooth muscle relaxant resulting in peripheral vasodilation.	Ischemic chest pain (angina, AMI), pulmonary edema.	↑ ICP, hypotension, ST-elevation in leads II, III and aVF (possible inferior wall MI), hypovolemia. Caution of history of glaucoma. Oral medications for erectile dysfunction (Viagra [®] , Levitra [®] , Cialis [®] , etc.) or pulmonary hypertension (Revatio [™]), may potentiate the effect of nitrates.	Headache, hypotension, nausea/vomiting, flushing, orthostatic hypotension/syncope.
Nitrous Oxide (Nitronox) Classification: Inhaled anesthetic	Provides 50% oxygen and 50% nitrous oxide. Self-administered by demand valve mask.		CNS depressant. Alters perception of pain. Rapid onset and short duration of effect.	Musculoskeletal injuries with mild-to-moderate pain ($\leq 4/10$).	Altered mental status, history of pulmonary disease, chest injury, alcohol or drug intoxication, face injuries, pregnant females.	Numbness, lightheadedness, drowsiness/sedation, numbness/tingling in face, slurred speech, headache, nausea/vomiting.

DRUG NAME	ADULT DOSE / ROUTE	PEDIATRIC DOSE / ROUTE	ACTION	INDICATIONS	CONTRA-INDICATIONS	ADVERSE REACTIONS
Sodium Bicarbonate 8.4% Classification: Electrolyte replacement	1 mEq/kg of 8.4% solution IV/IO. <u>Cyclic Overdoses:</u> Consider additional dose for hypotension, altered mental status, dysrhythmias.		Bicarbonate ion buffers acidosis and raises serum pH. Slows uptake of cyclic antidepressants.	Cyclic antidepressant overdose. To buffer acidosis in chronic renal failure/dialysis patients who are unstable or in cardiac arrest.	None when used as indicated.	Minimal when used as indicated.
Tetracaine Classification: Local anesthetic	1 drop of 0.5% solution in affected eye(s).		Topical anesthetic for the eye.	Non-penetrating eye trauma with pain.	Hypersensitivity to tetracaine or ester-type anesthetics, inflamed or infected tissue, ruptured globe or penetrating injury.	Transient stinging for 30 seconds after instillation. Epithelial damage if excessive or prolonged use.
Versed (midazolam) Classification: Benzodiazepine, CNS depressant	<u>Sedation and Seizures:</u> 2 mg increments IV/IO q 2 minutes, up to 10 mg total as needed. In seizures, if no IV/IO: 10 mg diluted to 2 mL via nasal atomizer. In some SOPs, may give IM if unable to establish IV/IO: < 70 kg = 5 mg IM ≥ 70 kg = 10 mg IM <u>Induction of Hypothermia for ROSC:</u> 5 mg IV/IO for shivering may repeat 2 mg q 2 minutes as needed to total of 10 mg.	<u>Seizures:</u> 0.1 mg/kg IV/IO or 0.2 mg/kg (diluted to 2 mL) IN. Max initial dose 10 mg. May repeat IV/IO 0.1 mg/kg q 2 minutes. If no IV/IO, 0.1 mg/kg IM q 2 minutes. <u>All other uses:</u> 0.05 mg/kg IV/IO increments up to 0.2 mg/kg maximum. <u>OR</u> 0.2 mg/kg IM. In some SOPs, may give IM if unable to establish IV/IO: < 70 kg = 5 mg IM ≥ 70 kg = 10 mg IM	Short acting benzodiazepine with CNS depressant, muscle relaxant, amnesic and anticonvulsant effects.	To induce sedation and amnesia prior to procedures. Anticonvulsant for seizure patients. Skeletal muscle relaxant for long bone fractures with muscle spasm. Sedative for combative or agitated psychiatric or head injured patients.	Hypersensitivity, narrow-angle glaucoma. Caution in COPD, renal failure, CHF, elderly, pregnancy, concomitant alcohol or CNS depressant medication use.	Amnesia, respiratory depression, agitation, tremors, dizziness, hypotension.

DRUG NAME	ADULT DOSE / ROUTE	PEDIATRIC DOSE / ROUTE	ACTION	INDICATIONS	CONTRA-INDICATIONS	ADVERSE REACTIONS
Xopenex (levalbuterol) Classification: Bronchodilator, beta agonist	1.25 mg (3 mL) in 3 mL via nebulizer with 6 LPM oxygen until mist stops (5-15 minutes). May repeat x 1.		Relaxes smooth muscles of the airways by acting on beta-2 receptors. Inhibits release of mediators from mast cells in airway.	Treatment or prevention of bronchospasm in patients with reversible obstructive airway disease.	Hypersensitivity of levalbuterol or racemic albuterol.	Nervousness, tremors.
Zofran (ondansetron) Classification: Antiemetic	4 mg oral disintegrating tablet (ODT) x 1 dose only or 4 mg slow IV x 1 dose only.	<u>>1 YO AND > 40 kg:</u> 4 mg oral disintegrating tablet (ODT) x 1 dose only or 4 mg slow IV x 1 dose only. <u>> 1 YO AND < 40 kg:</u> 0.1 mg/kg slow IV x 1 dose only. No oral dose for < 40 kg.	Selective serotonin 5-HT ₃ receptor antagonist.	Nausea, vomiting.	Hypersensitivity	Diarrhea, headache, lightheadedness.