Standing Medical Orders

These procedures have been developed and approved through a collaborative process involving the Region 8 Resource Hospitals:

Central DuPage, Edward, Good Samaritan, Loyola

THEY SHALL BE UTILIZED:
★ as written orders of a physician for treatment to be administered by authorized members of the Region 8 EMS Systems, as circumstances allow, for the treatment of the ill or injured patient.
★ as the prehospital standing medical orders to be initiated by System EMTs or Pre-Hospital RNs until such time that online medical control is established. In the event that online medical control communications cannot be established, EMS providers shall continue to provide treatment to the degree authorized by the EMS Medical Directors in these protocols.
★ in disaster situations as the standing medical orders for patient treatment, given that usual and customary forms of communication are not possible, in accordance with area-wide disaster plans.
★ as the standard operating procedures to be used by ECRNs when directing prehospital care.

System members are authorized to carry out these procedures to the extent necessitated by patient condition. Medical Control contact should be established as soon as practicable, without endangering the patient. In some circumstances, early contact with Medical Control can be beneficial to minimizing the time to definitive care, and these SMOs are designated as Time Sensitive by the clock graphic ☑

It is recognized that hospice patients, patients with valid DNR/POLST orders, patients who have not responded to ALS procedures, or patients involved in a mass casualty incident (MCI) present unique circumstances that may, in the medical opinion of the Medical Control Physician, justify deviation from these procedures, including bypassing the closest destination.

Standing Orders that are not labeled either ADULT or PEDIATRIC have elements applying to all age groups. Unless otherwise noted, PEDIATRIC patients are ≤ 15 years.

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   Epinephrine 1 mg / 10 mL
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   Lidocaine
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   Narcan
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   Sodium Bicarbonate
   Tetracaine drops
   Toradol
   Versed
   Zofran

DEFIBRILLATION & CARDIOVERSION ENERGIES
EMERGING INFECTIOUS DISEASE GUIDANCE

CHANGELOG
The Standing Medical Orders 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. Signs
   - GCS
   - Pulse - rate, quality, regularity
   - Blood Pressure - auscultated or palpated
   - Respiration - rate, pattern, depth
   - Skin - color, temperature, moisture, turgor
   - Pupils – size, equality, reactivity
   - Lung Sounds

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
     o pertinent (+) and (-) findings
   - Interpretation of ECG and vital signs
   - Blood glucose for patients with altered mental status
   - Body temperature when appropriate
   - Cincinnati and/or Fast NIHSS Prehospital Stroke Scale when appropriate
GENERAL PATIENT ASSESSMENT

Effective: 4/1/2019

BLS / ALS
1. Assess and secure scene safety
2. Use situationally-appropriate personal protective equipment (PPE) and procedures on all patients
   - Consider EMERGING INFECTIOUS DISEASE GUIDANCE, for all patients with complaint and symptom profiles that are similar to those diseases

ADULT
3. Adult Initial Assessment
   - Airway – establish and maintain an airway. Consider SPINE MOTION RESTRICTION as indicated.
   - Breathing – assess; assist or provide ventilations as indicated; assess lung sounds
   - Circulation – check pulse and control hemorrhage
   - Disability – neurologic
     A – Alert
     V – responds to Verbal stimuli
     P – responds to Painful stimuli
     U – Unresponsive
   - Expose and examine as indicated
   - Identify priority transports

4. Focused History and Physical Exam
   - SAMPLE history
     ♦ Signs & Symptoms, Systematic head-to-toe assessment including Glasgow Coma Scale (GCS)
     ♦ Allergies
     ♦ Medications
     ♦ Pertinent Medical History
     ♦ Last oral intake, Last Menstrual Period
     ♦ Events leading to present condition
   - Initial set of vital signs
   - Rate pain 0-10 scale

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

6. Ongoing Assessment
   - Reassess ABCDs
CONSIDERATION FOR PATIENTS WITH SPECIAL HEALTHCARE NEEDS

Effective: 4/1/2019
Reviewed:
Revised:

- 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
  - 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, so familiarity with respiratory emergency interventions, adjuncts, and treatment is important and appropriate.
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 adequacy by suctioning and/or insertion of an oropharyngeal or nasopharyngeal airway as needed
4. Evaluate oxygen saturation and consider need for supplemental oxygen, especially for patients with dyspnea, suspected hypoxemia or altered mental status

   **Target SpO2 94-98% (92% if hx of COPD)**

<table>
<thead>
<tr>
<th>Respiratory Assessment / Findings</th>
<th>Oxygen Administration</th>
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<tbody>
<tr>
<td>Adequate rate/depth, minimal distress, mild hypoxia, baseline SpO2 92-94% (88-91% COPD)</td>
<td>Low FiO2</td>
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<tr>
<td>Adequate rate/depth, moderate/severe distress, SpO2 &lt; 92% (&lt; 88% COPD)</td>
<td>High FiO2</td>
</tr>
<tr>
<td>Inadequate rate/depth with moderate/severe distress, unstable</td>
<td>High FiO2 by BVM ventilation</td>
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</tbody>
</table>

- Hyperoxia contraindicated in uncomplicated myocardial infarction / STEMI, post-cardiac arrest, acute exacerbations of COPD, stroke, newly born / neonatal resuscitation. If supplemental oxygen is used in these patients, the goal is to relieve hypoxemia without causing hyperoxia (target SpO2 94%, not 100%).

5. Waveform capnography for spontaneously breathing patients with respiratory distress, metabolic disorders, altered mental status (if available).

ALS

- If intubated, use capnography, end tidal CO₂ monitoring.
- If unable to intubate, consider use of alternate airway/rescue device.
6. If altered mental status:
   - Place patient on side (vomiting precautions), unless contraindicated
   - Check glucose level. If glucose < 60, treat per ADULT DIABETIC / GLUCOSE EMERGENCIES
7. 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.
   **NOTE:** 12-lead ECG on all patients with cardiac-related complaints (pain, dysrhythmias), syncope and stroke.
8. 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

9. **Pain management** should be considered in the care of all patients. Ask patient to rate pain on a scale of 0-10.
10. If patient is experiencing nausea or vomiting, consider giving ZOFRAN (ondansetron) ODT 4 mg tab or 4 mg slow IV x 1 dose only (if available).
11. Attempt to contact Medical Control as soon as possible prior to transport. Relay assessment and treatment information, including patient response to treatment.

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<tr>
<th>Some patients with time-sensitive illness or injury will benefit from limiting scene time AND early notification of Medical Control to mobilize hospital response teams. Contact Medical Control at the initial point of contact, as soon as a clinical impression has been formed from assessment findings.</th>
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<tr>
<td>These patients include, but are not limited to, <strong>STEMI findings in suspected coronary artery chest pain</strong>, <strong>abnormal Stroke Scale in stroke</strong>, <strong>cardiac arrest in pregnancy</strong>, and meeting <strong>trauma center bypass criteria in adult and pediatric trauma</strong>.</td>
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12. Interpretation of ECG and vital signs q 15 minutes and after each ALS intervention; q 5 minutes if unstable.

13. 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, unless patient meets Level 1 Trauma criteria.**

14. 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 enroute to the hospital. The patient’s condition or behavior which necessitated abbreviated scene time should be thoroughly documented.
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<tbody>
<tr>
<td>1.</td>
<td>Name and vehicle number of provider</td>
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<td>2.</td>
<td>Patient age and gender</td>
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<td>3.</td>
<td>Chief complaint/mechanism of injury</td>
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<td>4.</td>
<td>SMO being followed</td>
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<td>5.</td>
<td>Any deviation from SMO or unusual circumstances</td>
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<td>6.</td>
<td>ETA</td>
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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 ensuring 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.
• This SMO 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 SMOs.

• The decision to deviate from Standing Medical Orders must be documented thoroughly.

• This Standing Medical Order 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 Standing Medical Orders must be based on the medical judgment of the EMS provider treating the patient.
WITHHOLDING OR WITHDRAWING OF RESUSCITATIVE EFFORTS

Effective: 4/1/2019

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 SMO 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. Thoroughly document 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. POLST/DNR requests can only be honored by EMS providers if a **written POLST/DNR Order**, signed by the patient’s Attending Practitioner, is presented.
9. Healthcare decisions other than POLST/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. POLST/DNR requests can only be honored by EMS providers if a **written POLST/DNR Order**, signed by the patient’s Attending Practitioner, is presented.
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.

BLS/ALS

POLST / DNR Orders / Withholding Treatment
8. Confirm the validity of the POLST/DNR order according to System-specific policy. Call Medical Control if any item is missing. Components of a valid POLST/DNR Order:
   • Must be a written document that has not been revoked.
   • It must contain all of the following:
     ✓ **Name of patient**
     ✓ **Resuscitation Orders** (section A of the POLST form) or the equivalent language in a previous DNR form (the words “Do Not Resuscitate”, “Withhold Treatment”)
     ✓ **Three signatures** required
   I. **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
II. Signature of a Witness to Consent
III. Signature of Attending Practitioner - physician, licensed resident (second year or higher), advanced practice nurse or physician assistant

Effective date (date the practitioner signed the order)

9. If the POLST/DNR order is valid, resuscitative efforts will be withheld. Follow any and all specific orders found on the POLST/DNR order.
10. In the event the patient has a valid POLST/DNR order but IS NOT in cardiac or respiratory arrest with a decompensating condition, begin Adult Initial Medical Care SMO, if you are considering intubation contact Medical Control. If unable to contact Medical Control, follow appropriate SMO.
11. If resuscitative efforts were begun prior to the POLST/DNR form being present, efforts may be withdrawn once the validity of the order is confirmed. Contact Medical Control and 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.

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 POLST/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 SMO.

8. Provide patient care, per Adult Asystole/PEA SMO, based on the patient’s condition.
9. Contact Medical Control and explain the events of the call. Report treatments administered and any patient responses.
   - Confirm all of the following:
     ♦ The patient is an adult, is normothermic, and experienced an arrest unwitnessed by EMS
     ♦ The patient remains in asystole or PEA
     ♦ Confirm ADEQUATE AIRWAY and VASCULAR ACCESS
     ♦ Drug therapy, defibrillation, and CPR attempts have been carried out according to SMO
     ♦ Waveform capnography under 10 mmHg for more than 20 minutes and/or duration of pulselessness (if available)
   - 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.
Only an ED physician may make the determination to withdraw resuscitative efforts.
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, treat per appropriate SMO.
11. If unable to establish communications with Medical Control, resuscitative efforts should continue until the patient reaches the hospital.

**BLS/ALS**
**Blunt Traumatic Arrest**
1. Blunt trauma patient without vital signs upon arrival, may be considered for withholding resuscitative efforts with approval of Medical Control.
ADULT WITH SUSPECTED ACUTE CORONARY SYNDROME (ACS)

STABLE: alert, oriented, normotensive

BLS/ALS
1. **Adult Initial Medical Care SMO**
   - Inquire about the patient's medication use. If any of the following have been taken in the past 48 hours withhold **NITROGLYCERIN (NTG)**.
     - sildenafil (Viagra)
     - vardenafil (Levitra, Staxyn)
     - tadalafil (Cialis, Adcirca)
     - sildenafil citrate (Revatio)
     - riociguat (Adempas).
   - Hyperoxia should be avoided
2. Give **CHEWABLE ASPIRIN 324 mg** (4 x 81 mg tablets) chewed and swallowed
   - unless contraindicated
   - may omit if patient has taken ≥ 324mg aspirin within 8 hours
   - give aspirin to achieve a total dose of 324 mg within the last 8 hours

BLS
3. If patient has physician-prescribed NITROGLYCERIN and has not taken the maximum dose, and if SBP > 140 mmHg, patient may self-administer **NITROGLYCERIN 0.4 mg SL X 1**, unless contraindicated.

ALS
3. **12-Lead ECG**. Obtain and review early, preferably with initial vital signs and **before** NTG administration.
   - If ST-segment elevation indicative of acute myocardial infarction (STEMI) seen, condition is considered **TIME-SENSITIVE. Contact Medical Control at the initial point of contact, as soon as a clinical impression has been formed from assessment findings.** Communicate ECG to Medical Control ASAP; transmit ECG (if System mandated) and/or relay ST-segment findings and machine interpretation.
   - Maintain continuous ECG monitoring
4. If systolic BP > 140 mmHg and symptomatic: **NITROGLYCERIN 0.4 mg SL**; may **repeat NITROGLYCERIN x 1 in 5 minutes** if systolic BP > 140 mmHg and IV established (NOTE: Initial NTG may be given prior to IV start)
5. If patient has pain and systolic BP > 100 mmHg, treat per **ADULT PAIN CONTROL SMO**

UNSTABLE: altered mental status and/or signs of hypoperfusion

BLS
1. **Adult Initial Medical Care SMO**
2. Initiate **Expeditious Transport**. Notify Medical Control enroute.

ALS
3. If pulse < 60 BPM, treat per **ADULT BRADYDYSRHYTHMIA SMO**
4. If pulse ≥ 60 BPM, treat per **CARDIOGENIC SHOCK SMO**
5. Treat dysrhythmias per appropriate SMO
**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.

**Note:**
- 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.
ADULT BRADYDYSRHYTHMIAS

Effective: 4/1/2019
Reviewed: 
Revised: 

ALS
STABLE: alert, oriented, normotensive
1. Adult Initial Medical Care SMO
   • Anticipate the need for transcutaneous pacing (TCP)
2. Transport

UNSTABLE: altered mental status and/or signs of hypoperfusion (SBP < 90 mmHg)
1. Adult Initial Medical Care SMO
2. ATROPINE 0.5 mg rapid IV/IO
   • 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. If SBP > 100 mm Hg consider sedation with VERSED (midazolam) 2 mg IV/IO (4 mg if IN).
4. If patient remains symptomatic (whether or not HR > 60), give DOPAMINE 5 – 10 mcg/kg/min IVPB.

Notes:
- If patient is symptomatic, do not delay pacing while awaiting IV access or atropine to take effect
- Use ATROPINE with EXTREME CAUTION in cardiac ischemia or STEMI / infarction, to avoid worsening ischemia or infarction (especially in advanced heart blocks)
- Do not give lidocaine to patients in AV blocks or IVR
ADULT SUPRAVENTRICULAR TACHYCARDIA
(NARROW COMPLEX TACHYCARDIA RATE > 150 BPM)

Effective: 4/1/2019
Reviewed: 
Revised: 

ALS
1. Search for potentially reversible causes:

<table>
<thead>
<tr>
<th>Possible Cause</th>
<th>Field Treatment</th>
</tr>
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<tbody>
<tr>
<td>Cardiogenic Shock</td>
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<td>Pleural decompression of affected side</td>
</tr>
</tbody>
</table>

STABLE: alert, oriented, normotensive
2. Adult Initial Medical Care SMO - start IV in proximal vein
3. Valsalva maneuver while preparing medication
4. If no response, ADENOCARD 6 mg rapid IV with 10 mL NS flush
5. If no response, ADENOCARD 12 mg rapid IV with 10 mL NS flush
6. If no response, ADENOCARD 12 mg rapid IV with 10 mL NS flush

UNSTABLE: HR > 150 BPM with altered mental status and/or signs of hypoperfusion (SBP < 90 mmHg)
2. Adult Initial Medical Care SMO
3. If SBP > 100 mmHg consider sedation with VERSED (midazolam) 2 mg IV/IO (4 mg if IN) unless it would cause a delay in cardioversion.
4. SYNCHRONIZED CARDIOVERSION at 100 J
5. If no response, repeat SYNCHRONIZED CARDIOVERSION at recommended energy. Check rhythm and pulse between shocks.
6. If no response, consider CARDIOGENIC SHOCK SMO, or contact Medical Control

Notes:
- ADENOCARD should not be given to irregular rapid rhythms
- Follow ADENOCARD doses with rapid 10 mL NS flush

For defibrillation / cardioversion energy settings, please refer to DEFIBRILLATION & CARDIOVERSION ENERGIES
ADULT VENTRICULAR TACHYCARDIA WITH PULSE (WIDE COMPLEX TACHYCARDIA)

Effective: 4/1/2019

ALS

STABLE: alert, oriented, normotensive

1. **Adult Initial Medical Care SMO**, with HIGH FiO₂
2. Give **AMIODARONE 150 mg IV/IO over 10 min.**
3. If no response, call Medical Control to consider **ADENOCARD** (adenosine).

UNSTABLE: altered mental status and/or signs of hypoperfusion (SBP < 90 mmHg), heart rate > 150 BPM

1. **Initial Medical Care with HIGH FiO₂ or VENTILATION**
2. If SBP > 100 mmHg consider sedation with **VERSED** (midazolam) 2 mg IV/IO (4 mg IN) **unless it would cause a delay in cardioversion.**
3. **SYNCHRONIZED CARDIOVERSION** at 100 J
4. Give **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 SMO
5. If VT persists, repeat **SYNCHRONIZED CARDIOVERSION** at recommended energy. Check rhythm and pulse between shocks.

Note:
- If VT becomes pulseless or deteriorates to ventricular fibrillation (VF), defibrillate immediately per **VENTRICULAR FIBRILLATION / PULSELESS VENTRICULAR TACHYCARDIA SMO**

For defibrillation / cardioversion energy settings, please refer to **DEFIBRILLATION & CARDIOVERSION ENERGIES**
ADULT VENTRICULAR FIBRILLATION (VF)
ADULT PULSELESS VENTRICULAR TACHYCARDIA (pVT)

Effective: 4/1/2019
Reviewed: Revised:

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. High Quality Continuous CPR until defibrillator available
   • While patient is pulseless, CPR should be continuous except for pausing for ventilation (unless 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 SMO
6. If pulseless, resume CPR. Maintain adequate ventilation, if needed place advanced airway. Establish IV/IO ACCESS.
7. EPINEPHRINE 1:10,000 1 mg IV/IO. After 2 minutes of CPR, DEFIBRILLATE at maximum energy.
8. AMIODARONE 300 mg IV. After 2 minutes of CPR, DEFIBRILLATE at maximum energy.
9. EPINEPHRINE 1:10,000 1 mg IV/IO. After 2 minutes of CPR, DEFIBRILLATE at maximum energy.
10. AMIODARONE 150 mg IV as repeat dose. After 2 minutes of CPR, DEFIBRILLATE at maximum energy.
11. Repeat EPINEPHRINE / CPR / DEFIBRILLATION sequence q 2-3 minutes as long as pulseless rhythm persists. After 4th EPINEPHRINE give SODIUM BICARBONATE 50 mEq IV/IO.
12. If VF converts to a supraventricular rhythm with a pulse and has not received > 300 mg of AMIODARONE, begin an AMIODARONE infusion of 150 mg/100 mL over 10 minutes.

Note:
• Flush all IV/IO push meds with 20 mL IV fluid
• For AMIODARONE shortages, LIDOCAINE is the alternate. 1 mg/kg IV/IO (100 mg max single dose), rebolus at 0.5 mg/kg IV/IO (50 mg max single dose), up to 3 mg/kg (300 mg) max total dose.
• If using LIDOCAINE and patient experiences ROSC, bolus LIDOCAINE 1 mg/kg IV/IO (100 mg max single dose); after ten minutes rebolus 0.5 mg/kg (50 mg max single dose). May repeat rebolus q 10 min as needed.

For defibrillation / cardioversion energy settings, please refer to DEFIBRILLATION & CARDIOVERSION ENERGIES.
ADULT ASYSTOLE / PULSELESS ELECTRICAL ACTIVITY

Effective: 4/1/2019
Reviewed: 
Revised:

ALS

1. **High Quality Continuous CPR** until defibrillator available for rhythm check
   - While patient is pulseless, CPR should be continuous except for pausing for ventilation (unless intubated), or rhythm check. Rhythm checks should be less than 10 seconds and pulse checks only if an organized rhythm is observed
   - Search for potentially reversible causes:

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</tr>
</tbody>
</table>

2. **Give EPINEPHRINE 1:10,000 1 mg IV/IO**
   - Repeat EPINEPHRINE q 3-5 minutes while pulseless
   - After 4\textsuperscript{th} EPINEPHRINE give SODIUM BICARBONATE 50 mEq, IV/IO unless contraindicated.

3. If return of spontaneous circulation (ROSC) occurs, refer to appropriate SMO

4. If patient remains in persistent asystole, consider withdrawal of resuscitation per WITHDRAWING OF RESUSCITATIVE EFFORTS SMO

Notes:
- Flush all IV/IO push meds with 20 mL IV fluid
- If ETCO2 has a sudden rise and reading is above 30 mmHg, PEA is *unlikely* and ROSC may have occurred.
**ADULT PULMONARY EDEMA**  
*(DUE TO HEART FAILURE)*

**BLS/ALS**

**STABLE:** alert, oriented, normotensive or hypertensive

1. **Adult Initial Medical Care SMO**
   - Place patient in High Fowler’s position, if systolic BP > 100 mmHg
   - Consider need and method of delivery of supplemental oxygen

**ALS**

2. If systolic BP > 140 mmHg, give **NITROGLYCERIN 0.4 mg SL**
3. **CPAP per System-specific procedure** unless contraindicated. Max PEEP of 10 cmH20. If patient becomes unstable (SBP < 100 mmHg) lower PEEP. If patient continues to worsen, remove CPAP. If GCS ≤ 10 or deteriorating GCS remove CPAP.
   
   **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

4. If systolic BP ≥ 140 mmHg, repeat **NITROGLYCERIN 0.4 mg SL**; may repeat q five minutes if systolic BP ≥ 140 mmHg

**UNSTABLE:** altered mental status or signs of hypoperfusion

1. **Adult Initial Medical Care SMO**, HIGH FiO2 or VENTILATION
2. Determine pulse rate
   - If Pulse < 60 BPM: treat per **BRADYDYSRHYTHMIAS SMO**
   - If Pulse ≥ 60 BPM: treat per **CARDIOGENIC SHOCK SMO**

**Note:**
- Oral medications for erectile dysfunction (Viagra, Levitra, Cialis, Adcirca, Staxyn, sildenafil, tadalafil, vardenafil) or pulmonary hypertension (Revatio, Adempas, sildenafil, riociguat) may potentiate the effect of nitrates
- **Consult Medical Control** prior to administering NTG in these situations.
**Adult Cardiogenic Shock**

**Effective:** 4/1/2019

**ALS**

1. **Adult Initial Medical Care SMO, with HIGH FiO₂ or VENTILATION**
2. 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
3. Treat underlying dysrhythmias per appropriate SMO
4. If pulse > 60 BPM, begin **DOPAMINE DRIP** at 5 mcg/kg/min and increase q 3 min to achieve systolic BP ≥ 90 mmHg to a maximum of 20 mcg/kg/min

<table>
<thead>
<tr>
<th>Body Weight</th>
<th>Dopamine mcg / kg / min</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lbs</td>
<td>Kg</td>
</tr>
<tr>
<td></td>
<td>mctts / min</td>
</tr>
<tr>
<td>80</td>
<td>36</td>
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<tr>
<td>100</td>
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<tr>
<td>280</td>
<td>127</td>
</tr>
<tr>
<td>300</td>
<td>136</td>
</tr>
</tbody>
</table>

**Calculation Chart**

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

**Note:**

- If pulse rate < 60, treat per **SYMPTOMATIC BRADYDYSRHYTHMIA SMO**
ADULT LEFT VENTRICULAR ASSIST DEVICE (LVAD)

BLS/ALS

1. **Adult Initial Medical Care SMO**
2. Assess patient condition
   - Check for pulses, if pulses absent the NIBP may be *inaccurate*.
   - Check the percutaneous lead for damage or signs of infection at insertion site, ensure site is covered with sterile materials.
   - Check for any and all audible and visual alarms on control module.
     - Patient should have a device reference guide available, if none can be found contact Medical Control.
   - If patient unable to communicate with crew, attempt to utilize family member or care giver for history and device assistance.
3. If patient is stable contact the patients LVAD coordinator if not already done.
4. Assess LVAD equipment
   - Wires and connectors are undamaged
   - No warning lights or audible alarm from control module
   - Check battery levels
   - Check the patients “VAD” bag for extra equipment
   - If the patient has the display screen attached, record the findings and convey them to Medical Control and patients LVAD coordinator.
     - Normal flows: 4-8 L/min (RPM x Power)
     - Normal RPM: 8,000-10,000 average
     - Normal power: < 10 watts
5. If alarm sounds, check control unit and treat cause per reference guide if available.

ALS

6. If pump fails a red “broken heart” symbol (HeartMate LVAS) will illuminate and audible alarm will sound. If indicated
   - Replace all batteries *(1 at a time)*
   - If still no change after replacing batteries, switch to back up control unit if available.
   - If no unit display is attached, attach pump to display monitor
   - If cardiac arrest occurs after these steps, initiate CPR and follow appropriate SMO.
7. If the patient experiences arrhythmias follow the appropriate SMO *(defib pads should be placed anterior/posterior)*
8. If cardiac arrest occurs attempt to treat underlying arrhythmias per appropriate SMO with electrical and drug therapy PRIOR to CPR (CPR may be immediately started if cardiac arrest occurs if patient is unresponsive with fatal arrhythmia in the presence of a total LVAD failure or cut/severed drive line).

**Note:**
- Bring any and all additional LVAD equipment with the Pt. to the ED
- Do NOT restart device if off for more than 5 minutes
ADULT AIRWAY OBSTRUCTION

BLS/ALS
1. Adult Initial Medical Care SMO
2. Determine responsiveness and ability to speak
3. Position patient to open airway:
   • If unconscious: use head tilt/chin lift
   • If suspected cervical spine injury: use modified jaw thrust
4. Assess breathlessness/degree of airway impairment
5. Monitor for:
   • Cardiac dysrhythmias and/or arrest
   • ETCO₂ waveform changes (if available)

CONSCIOUS
ABLE TO SPEAK:
• Do not interfere with patient’s own attempts to clear airway

CANNOT SPEAK:
6. 5 abdominal thrusts with patient standing or sitting
   OR
   5 chest thrusts if patient in 2nd – 3rd trimester of pregnancy or morbidly obese
   • Repeat if no response
7. If successful: complete Adult Initial Medical Care SMO, and transport
8. 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 Adult Initial Medical Care SMO, and transport.
6. Attempt to ventilate. If obstructed:
   • Attempt to clear away in the presence of visible airway obstruction unless contraindicated
   • Consider suction
   • If still obstructed and unconscious, repeat above steps until airway is clear

ALS
7. Visualize airway with laryngoscope and attempt to clear using Magill forceps and/or suction
8. Still obstructed: Attempt forced ventilation
9. Still obstructed: Attempt INTUBATION. If able to place ET tube but unable to achieve chest rise, consider advancing the ET tube to push foreign body into right main stem bronchus, then pull tube back and attempt ventilation
10. Still obstructed: Perform CRICOTHYROIDOTOMY with HIGH FiO₂ VENTILATION and transport
ALS

- This SMO is to be used for patients > 15 years of age. **If < 15 years of age, see PEDIATRIC DRUG ASSISTED INTUBATION SMO**

- The following are situations which may require the use of this SMO to facilitate intubation:
  - Glasgow Coma Scale score of ≤ 8
  - Imminent respiratory arrest or 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

1. Adult Initial Medical Care SMO
2. Prepare patient and equipment for procedure:
   - Position patient in sniffing position unless cervical spine injury suspected
   - **HIGH FiO₂ VENTILATION prior to and in-between steps of this procedure as able**
3. Give sedation. Choose only 1 medication to use for sedation based on patient condition:

<table>
<thead>
<tr>
<th>KETAMINE</th>
<th>ETOMIDATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do NOT use for STEMI’s</td>
<td>Do NOT use for septic pts</td>
</tr>
<tr>
<td>Do NOT use for HTN (SBP &gt; 160)</td>
<td>Do NOT use for renal failure pts</td>
</tr>
</tbody>
</table>

   - **Initial Dose:**
     - 2 mg/kg SLOW IV/IO, max dose 500 mg
     - 0.6 mg/kg IV/IO SLOW (over 30-60 seconds) up to 40 mg

   - **Repeat Dose:**
     - 1 mg/kg SLOW IV/IO, max dose 250 mg
     - None

4. If gag reflex present, give **BENZOCAINE SPRAY 1 - 2 second spray, 30 second interval x 2.**
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
   - Waveform capnography, end tidal CO₂ detector and/or esophageal detection device per System-specific procedure
7. Secure ET tube and reassess placement
8. Continuous waveform ETCO2 monitoring (if available)

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

**UNSUCCESSFUL DAI ATTEMPT**
10. If unsuccessful, continue **HIGH FiO₂ VENTILATION**, contact Medical Control, and be prepared for alternative airway/rescue device use or CRICOTHYROIDOTOMY per System-specific procedure.

**NOTE:**
- **Versed (midazolam) is to be given for sedation after successful placement of ET. In this SMO, it is not given as an additional sedative to achieve intubation.**
ADULT ACUTE ASTHMA
COPD WITH WHEEZING
REACTIVE (LOWER) AIRWAY DISEASE

BLS/ALS
1. Adult Initial Medical Care SMO

BLS
2. If patient has prescribed inhaler, determine 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 SMO**

ALS
2. **ALBUTEROL 2.5 mg (3 mL) via nebulizer**
3. Partial response: repeat **ALBUTEROL** immediately
4. If no response to ALBUTEROL or patient in severe respiratory distress:
   - **CPAP** per System-specific procedure with in-line **ALBUTEROL 2.5 mg (3 mL)** unless contraindicated. Max PEEP of 10 cmH20. If patient becomes unstable (SBP < 100 mmHg) lower PEEP. If patient continues to worsen, remove CPAP. If GCS ≤ 10 or deteriorating GCS remove CPAP
   - If age ≤ 50 and patient has no history of cardiac disease, consider **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)**

Note:
- If intubated, respiratory rate may need to be **decreased** to achieve a target ETCO2 value of 35-45 mmHg
ADULT PARTIAL (UPPER) AIRWAY OBSTRUCTION / EPIGLOTTITIS

ALS/BLS
1. Adult Initial Medical Care SMO
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) 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
ADULT ALLERGIC REACTION / ANAPHYLAXIS

Effective: 4/1/2019
Reviewed:
Revised:

BLS/ALS
1. **Adult Initial Medical Care SMO**
2. Apply ice/cold pack to site

**ALS**

**Allergic reaction with systemic signs**, i.e. wheezing, diffuse hives, or prior history of systemic reaction, without signs of hypoperfusion
3. Give **BENADRYL (diphenhydramine) 50 mg IM or slow IV/IO**. Max dose 50 mg.
4. Give **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**
5. If wheezing, consider **ALBUTEROL 2.5 mg (3 mL) via nebulizer**

BLS/ALS

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

**BLS**

3. At the direction of Medical Control, give one dose **EPINEPHRINE 0.3 mg (0.3 mL) 1:1000 IM** via auto-injector device per system specific protocol.
4. If wheezing, consider **ALBUTEROL 2.5 mg (3 mL) via nebulizer**

**ALS**

3. If signs of hypoperfusion, **IV/IO FLUID BOLUS in 200 mL increments**
4. Give **EPINEPHRINE 1:10,000 0.1 mg slow IV/IO q 3 minutes up to 0.5 mg or EPINEPHRINE 1:1000 0.3 mg IM**. May repeat **EPINEPHRINE q 3 minutes**
5. Give **BENADRYL (diphenhydramine) 50 mg slow IV/IO**
   - If no IV, give **BENADRYL (diphenhydramine) 50 mg IM**
   - No repeat dose
6. If wheezing, consider **ALBUTEROL 2.5 mg (3 mL) via nebulizer**
7. **DOPAMINE** per **CARDIOGENIC SHOCK SMO**, for refractory hypotension

**Note**
- **EPINEPHRINE** may be given IM if IV/IO access delayed.
ADULT DIABETIC / GLUCOSE EMERGENCIES

BLS/ALS
1. **Adult Initial Medical Care SMO**
   - Check medication history and last oral intake
   - Vomiting and seizure precautions
2. Check 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. **DEXTROSE 10% 12.5 g (125 mL) IV.** May repeat x 1 if no improvement, or blood glucose remains < 60
     OR
     During critical drug shortages of dextrose 10%, give **DEXTROSE 50% 25 g (50 mL) IV.** If partial or no improvement, repeat **DEXTROSE 50% 25 g (50 mL) IV** after 5 minutes
5. If unable to start IV, give **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
1. **Adult Initial Medical Care SMO**
2. Remove excess clothing if hyperthermia present
3. Consider sepsis if the patient has a known or suspected infection and meets two or more of the following criteria:
   - Temperature of ≥ 100.4°F or ≤ 96.8°F
   - ETCO2 ≤ 25 mmHg with square waveform
   - Shock index of > 1 (HR ÷ SBP)
   - HR > 90 bpm
4. Check and record blood glucose level, if available, If < 60, treat per [ADULT DIABETIC / GLUCOSE EMERGENCIES](#)

### ALS
5. Establish **LARGE BORE VASCULAR ACCESS IV/IO x 2**
6. If SBP < 120 mmHg give **FLUID BOLUS** with pressure bag and give at least 1 L NS prior to ED arrival (attempt total recommended dose of 30 mL/kg to be continued in the ED if not completed in the field)
   - Check lung sounds q 200 mL for pulmonary edema, if pulmonary edema occurs, STOP bolus, place IV at TKO rate and treat per [PULMONARY EDEMA SMO](#) with the exception of NITROGLYCERIN if organ dysfunction is present.
7. Inform Medical Control of SEPSIS ALERT prior to arrival

### NOTE:
- **ETOMIDATE** (amidate) should be avoided in sepsis patients due to adrenal insufficiency
- Organ dysfunction is characterized by a SBP < 100 mmHg or a MAP of < 65
- If hyperthermia is present warm fluids should be avoided
- Document amount of fluid given during care and transport
ADULT SYNCOPE / NEAR SYNCOPE
Non-traumatic loss of consciousness

Effective: 4/1/2019

BLS/ALS
1. **Adult Initial Medical Care SMO**
2. Check and record blood glucose level. If < 60, treat per [ADULT DIABETIC / GLUCOSE EMERGENCIES](#).
3. Anticipate underlying etiologies and treat according to appropriate SMO:
   - Metabolic - [ADULT DIABETIC / GLUCOSE EMERGENCIES](#), or [TOXICOLOGIC EMERGENCIES SMO](#)
   - Cardiac - Appropriate Cardiac SMO,
   - Hypovolemic - Fluid resuscitation
   - CNS Disorder - See appropriate Medical or Trauma SMO
   - Vasovagal - [Adult Initial Medical Care SMO](#)

If indicated by decreasing sensorium and pinpoint pupils, depressed respirations, and possible history of opioid/synthetic opioid ingestion:
4. Consider [ADULT SUSPECTED OPIOID OVERDOSE SMO](#)

**BLS**
5. Expeditious transport. Contact Medical Control enroute

**ALS**

STABLE: alert, oriented, normotensive

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

UNSTABLE: altered mental status or signs of hypoperfusion

If lungs clear, with hypoperfusion:
5. **IV FLUID BOLUS** in 200 mL increments
ADULT SEIZURES / STATUS EPILEPTICUS
Non-traumatic origin

BLS/ALS
1. Adult Initial Medical Care SMO
   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. Check and record blood glucose level, if available. If < 60 treat per ADULT DIABETIC / GLUCOSE EMERGENCIES

ALS
If actively seizing:

3. Give VERSED (midazolam) 2 mg slow IV increments q 2 minutes up to 10 mg total as necessary.
4. If unable to start IV:
   - Give VERSED (midazolam) 10 mg in 2 mL IN
   Or
   - Give VERSED (midazolam) IM
     o < 70 kg = 2.5 mg IM
     o ≥ 70 kg = 5 mg IM

Note:
If suspected that seizure is secondary to opioid overdose, see ADULT SUSPECTED OPIOID OVERDOSE SMO
ADULT STROKE
Non-traumatic origin

BLS/ALS
1. **Adult Initial Medical Care SMO**
   - Limit scene time
   - Contact Medical Control at the initial point of contact, as soon as a clinical impression has been formed from assessment findings.
   - **SPINE MOTION RESTRICTION** for unconscious patient with suspected trauma
   - Ascertain and record time when last at baseline / Last Known Well
   - Check and record blood glucose level. If < 60, treat per **ADULT DIABETIC / GLUCOSE EMERGENCIES**

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. Assess and record neurological status using GCS and note any changes.
5. Assess patient using the **Cincinnati Prehospital Stroke Scale (CPSS)** or **FAST NIH** per system specific procedures and document new findings:
   - New Facial Droop (have patient show teeth or smile)
   - New Arm Drift (patient closes eyes and hold both arms out)
   - 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
1. **INTUBATE** if GCS score ≤ 8
2. Establish IV, limit IV attempts to 2
3. If seizure activity, refer to **ADULT SEIZURES / STATUS EPILEPTICUS**
4. Call Medical Control early and communicate time when patient was last at baseline/Last Known Well (if known)
5. 12-lead ECG
6. Transport to the closest Primary or Comprehensive Stroke Center for continuation of stroke care
ADULT ACUTE ABDOMINAL PAIN

BLS/ALS
1. Adult Initial Medical Care SMO

ALS
2. Consider pain management if SBP > 100 mmHg per ADULT PAIN CONTROL SMO:
3. If patient is experiencing nausea or vomiting, consider giving 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. Give IV FLUID BOLUS of 200 mL, repeat as necessary. Titrate infusion rate based on clinical presentation.
5. If suspected ruptured abdominal aortic aneurysm (mottling distal to mass / pain) or ectopic pregnancy, early aggressive fluid resuscitation should be considered to maintain a SBP of 90 mmHg.
6. If signs and symptoms of shock present, establish second IV.
**ADULT SUSPECTED OPIOID OVERDOSE**

**Effective:** 4/1/2019

**BLS/ALS**
1. **Adult Initial Medical Care SMO**
2. If breathing is adequate, place on side and monitor V/S.

**BLS**
3. Protect airway, **HIGH FiO₂** or **VENTILATION**
4. If breathing is **NOT** adequate, or patient is apneic **NARCAN (naloxone) 2 mg IN q 30 seconds up to 12 mg IN until adequate respirations return.** If needed contact Medical Control for additional doses.

**ALS**
3. Protect airway, **HIGH FiO₂** or **VENTILATION**
4. If breathing is **NOT** adequate, or patient is snagainc:

<table>
<thead>
<tr>
<th>Inadequate Respirations</th>
<th>Apneic</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>NARCAN (naloxone) 1 mg IV/IO (2 mg IN) q 1-2 minutes up to 6 mg IV/IO (12 mg IN) until adequate respirations return.</strong> If needed contact Medical Control for additional doses.</td>
<td><strong>NARCAN (naloxone) 2 mg IV/IO/IN q 1-2 minutes up to 12 mg IV/IO/IN until adequate respirations return.</strong> If patient remains apneic 12 mg <strong>consider placement of advanced airway per ADULT ASSISTED INTUBATION – KETAMINE SMO.</strong> If needed contact Medical Control for additional doses.</td>
</tr>
</tbody>
</table>

**NOTE:**
- Inadequate respirations defined as **ETCO2 < 30 or > 50 or rate < 10**
- Additional PPE should be considered on suspected overdose calls when white powder is noted, or the presence of FENTANYL or CARFENTANIL is suspected.
**ADULT PAIN CONTROL**

**BLS/ALS**

1. Adult Initial Medical Care SMO  
2. If minor pain  
   - consider ice packs as needed / appropriate  
   - consider **NITROUS OXIDE** per System-specific policy

**ALS**

3. If pain is moderate to severe, and SBP ≥ 100 mmHg, consider one of the below. Once a medication is chosen, continue with that medication unless approved by Medical Control:

<table>
<thead>
<tr>
<th>FENTANYL (Preferred)</th>
<th>KETAMINE</th>
<th>MORPHINE</th>
<th>TORADOL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>15-65 Years of Age</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Initial Dose: 1 mcg/kg IV/IO/IN up to 100 mcg</td>
<td>Initial Dose: 0.1 mg/kg IV/IO up to 30 mg</td>
<td>Initial Dose: 2 mg IV/IO</td>
<td>Initial Dose: 15 mg IM or SLOW IV/IO</td>
</tr>
<tr>
<td>Repeat Dose: 0.5 mcg/kg IV/IO/IN up to 50 mcg</td>
<td>Repeat Dose: 0.05 mg/kg IV/IO up to 15 mg</td>
<td>Repeat Dose: 2 mg q 5 min up to 10 mg</td>
<td>Repeat Dose: NONE</td>
</tr>
<tr>
<td><strong>&gt; 65 Years of Age</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Initial Dose: 0.5 mcg/kg IV/IO/IN up to 50 mcg</td>
<td>NONE</td>
<td>Initial Dose: 2 mg IV/IO</td>
<td>NONE</td>
</tr>
<tr>
<td>Repeat Dose: 0.25 mcg/kg IV/IO/IN up to 25 mcg</td>
<td>Repeat Dose: 2 mg q 5 min up to 10 mg</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. Follow appropriate SMOs as necessary.
**BLS/ALS**

**STABLE:** alert, oriented, normotensive

1. **Adult Initial Medical Care SMO**
   - HazMat precautions

For **known or suspected OPIOID OVERDOSE** with GCS score ≤ 8:

2. Protect airway, HIGH FiO₂ or VENTILATION, follow **ADULT SUSPECTED OPIOID OVERDOSE SMO**

**ALS**

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

1. **Adult Initial Medical Care SMO**
   - HazMat precautions

2. GCS score ≤ 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 **ADULT SUSPECTED OPIOID OVERDOSE SMO**

**CYCLIC ANTIDEPRESSANT / SODIUM CHANNEL BLOCKER OVERDOSE**

Hypoperfusion associated with wide QRS complex (possible cyclic ingestion)

4. Give **NORMAL SALINE 1 L IV bolus**

5. Give **SODIUM BICARBONATE 8.4% 1 mEq/kg IV/IO, max single dose of 50 mEq**

**BETA-BLOCKER / CALCIUM CHANNEL BLOCKER OVERDOSE**

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

4. Give **GLUCAGON 1 mg slow IV**. May repeat x 1.

5. If no response consider transcutaneous pacing (TCP).

**MUSCARINIC POISONING** - excessive body secretions

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

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

**CYANIDE POISONING**

**Signs of Cyanide Poisoning**
- Altered Mental Status
- Confusion, Disoriented
- Tachypnea/Hyperpnea (early)

**Symptoms of Cyanide Poisoning**
- Headache
- Confusion
- Bradypnea/Apnea (late)
- Seizures or Coma
- Mydriasis (dilated pupils)
- Hypertension (early) / Hypotension (late)
- Cardiovascular collapse
- Vomiting
- Dyspnea
- Chest Tightness
- Nausea

4. **Adult Initial Medical Care SMO**, considerations:
   - Consider NIPPV / CPAP, per System-specific procedure
   - Consider **ADVANCED AIRWAY** if the patient has GCS ≤ 8, inhalation burns, bradypnea or tachypnea, hoarse voice and/or impending airway closure.
   - Consider **12-LEAD ECG**

5. If signs and symptoms consistent with cyanide poisoning and **if available, give hydroxocobalamin (Cyanokit®)**.

6. If hypotensive or pulseless, **NORMAL SALINE 1 L IV bolus**. If pulseless, refer to appropriate cardiac arrest SMO.

**CARBON MONOXIDE POISONING**

**BLS/ALS**

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

**ALS (with SPCO monitoring capabilities)**

5. Assess CO levels
   - 0-3% Normal range
   - 3-12%, with **NO** symptoms, observe and reassess V/S and CO readings q 5-10 minutes
   - 3-12% **WITH** symptoms, treat with 100% O2 via NRB mask and transport to the closest appropriate facility
   - >12%
     - GCS of ≥ 9, treat with 100% O2 via NRB
     - GCS ≤ 8 **ADULT DRUG ASSISTED INTUBATION – KETAMINE SMO**, contact Medical Control for consideration of bypass to facility with a hyperbaric chamber

6. Any patient presenting with symptoms of CO poisoning should be transported to closest appropriate facility. Additionally, patients with the following should be transported with or without symptoms of CO poisoning:
   - Adults with CO of ≥ 25%
   - Pediatric patients with CO of ≥ 15%
   - Pregnant patients with a CO of ≥ 15%
   - Any patient with advanced airway or acute mental status change and a CO of ≥ 15%

**SUSPECTED CLUB DRUG OVERDOSE**

4. Contact Medical Control for suspected use of club drugs
<table>
<thead>
<tr>
<th>Drugs Commonly Seen in Overdose / Poisoning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effective: 4/1/2019</td>
</tr>
<tr>
<td>Reviewed:</td>
</tr>
<tr>
<td>Revised:</td>
</tr>
</tbody>
</table>

**Opioids**
Morphine, Demerol (meperidine), heroin, methadone, codeine, Duragesic (fentanyl), Vicodin/Lortab (APAP and hydrocodone), hydrocodone, Dilaudid (hydromorphone), Percocet (oxycodone and APAP), OxyContin (oxycodone)

**Sodium Channel Blockers**
Benadryl (diphenhydramine), Dilantin (phenytoin)

**Cyclic Antidepressants**
Elavil (amitriptyline), Norpramin (desipramine), Tofranil (imipramine), Pamelor (nortriptyline), Sinequan (doxepine)

**Benzodiazepines**
Halcion (triazolam), Ativan (lorazepam), Restoril (temazepam), Versed (midazolam), Valium (diazepam), Xanax (alprazolam), Librium (chlordiazepoxide), Klonopin (conlazepam), Dalmane (flurazepam), Rohypnol (flunitrazepam), Ambien (zolipdem)

**Beta Blockers:**
Inderal (propranolol), Corgard (nadolol), Lopressor (metoprolol), Tenormin (atenolol), timolol

**Calcium Channel Blockers:**
Cardizem (diltiazem), Procardia (nifedipine), Calan/Adalat/Isoptin (verapamil), Norvasc (amlodipine)

**Club Drugs**
GHB (Liquid G, Liquid Ecstasy), ketamine (Special K, Vitamin K, Super K), MDMA (Ecstasy, XTC, ADAM, E), Foxy Methoxy, AMT, Coricidin (Triple-C)

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**Poison Control Center 1-800-222-1222**
**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. **Adult Initial Medical Care SMO**
   - Consider need for **ADVANCED AIRWAY** if patient has GCS ≤ 8, inhalation burns, bradypnea / tachypnea, hoarse voice and/or signs of impending airway closure
   - Consider 12-lead ECG
2. If signs and symptoms consistent with cyanide poisoning, give **HYDROXOCOBALAMIN (CYANOKIT® packaged as 2.5 g in 100 mL, concentration of 25 mg/mL)**
   - Adult - 5 g over 15 min (15 mL/min)
   - Pediatric - 70 mg/kg over 15 min, not to exceed 5 g
3. Contact Medical Control, transport and monitor patient

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

### Signs of Cyanide Poisoning
- Altered Mental Status
- Confused, Disoriented
- Tachypnea / Hypernea (early)
- Bradypnea / Apnea (late)
- Seizures / Coma
- Mydriasis (dilated pupils)
- Hypertension (early)
- Hypotension (late)
- Cardiovascular Collapse
- Vomiting

### Symptoms of Cyanide Poisoning
- Headache
- Confusion
- Dyspnea
- Chest Tightness
- Nausea

<table>
<thead>
<tr>
<th>Wt kg</th>
<th>Dose</th>
<th>Units</th>
<th>Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>140</td>
<td>mg</td>
<td>5.6 mL</td>
</tr>
<tr>
<td>3</td>
<td>210</td>
<td>mg</td>
<td>8.4 mL</td>
</tr>
<tr>
<td>4</td>
<td>280</td>
<td>mg</td>
<td>11.2 mL</td>
</tr>
<tr>
<td>5</td>
<td>350</td>
<td>mg</td>
<td>14 mL</td>
</tr>
<tr>
<td>10</td>
<td>700</td>
<td>mg</td>
<td>28 mL</td>
</tr>
<tr>
<td>15</td>
<td>1.1</td>
<td>g</td>
<td>42 mL</td>
</tr>
<tr>
<td>20</td>
<td>1.4</td>
<td>g</td>
<td>56 mL</td>
</tr>
<tr>
<td>25</td>
<td>1.8</td>
<td>g</td>
<td>70 mL</td>
</tr>
<tr>
<td>30</td>
<td>2.1</td>
<td>g</td>
<td>84 mL</td>
</tr>
<tr>
<td>35</td>
<td>2.5</td>
<td>g</td>
<td>98 mL</td>
</tr>
<tr>
<td>40</td>
<td>2.8</td>
<td>g</td>
<td>112 mL</td>
</tr>
<tr>
<td>45</td>
<td>3.2</td>
<td>g</td>
<td>126 mL</td>
</tr>
<tr>
<td>50</td>
<td>3.5</td>
<td>g</td>
<td>140 mL</td>
</tr>
</tbody>
</table>

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**SNAKEBITE / ENVENOMATION**

**BLS/ALS**

Scene Size-Up
- Assess scene and personal safety
- Use standard precautions on all patients
1. **Adult Initial Medical Care SMO**
   - Confirm adequate 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

**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.**
  - Notify Medical Control if antivenin is available at the scene.
    - Request that Medical Control contact toxicologist / Poison Control 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**
- Observe for respiratory compromise. Provide intervention, if necessary, per appropriate SMO.
- Evaluate cardiac rhythm. Treat dysrhythmias per appropriate SMO.
- Establish **TWO LARGE BORE IVS OF NORMAL SALINE** in unaffected extremity.
- Use direct pressure to control hemorrhage if present. Avoid elevation of extremities.
- 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.
Purpose:
To provide Illinois EMS agencies with guidelines on the appropriate use of nerve agent kits (Mark 1 / DuoDote). Kits contains antidotes to be used in instances of exposure to nerve agents (Sarin, Soman, Tabun, VX) or to muscarinic agents (lorsban, Cygon, Delnav malathion, Supracide parathion, Carbopenthion).

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 / DuoDote auto-injectors. When appropriate conditions warrant, contact Medical Control. Other organized response teams not governed by the EMS Act may use the Mark 1 / DuoDote 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 / DuoDote 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 / DuoDote 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 give these medications.
6. Atropine may be given IV or IM in situations where Mark 1 / DuoDote kits are not available.
7. If available, diazepam (Valium) or midazolam (Versed) may be cautiously given under Medical Control direction or by Standing Medical Orders, 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 muscarinic exposures. Continual medical monitoring and transport is mandatory.

Mnemonic for Nerve Agent exposure:
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)
<table>
<thead>
<tr>
<th>EXPOSURE</th>
<th>CLINICAL</th>
<th>TREATMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>No signs or symptoms</td>
<td>None</td>
<td>Remove to Safe Zone, decontaminate, observe and transport</td>
</tr>
<tr>
<td>Mild Exposure</td>
<td>SOB, wheezing, runny nose</td>
<td>One kit or atropine 2 mg IV/IM and 2-PAM 600 mg IM (1 gram IV)</td>
</tr>
<tr>
<td>Moderate Exposure</td>
<td>Vomiting, diarrhea, pinpoint pupils, drooling</td>
<td>1-2 kit or atropine 2-4 mg IV/IM and 2-PAM 600-1200 mg IM (1 gram IV)</td>
</tr>
<tr>
<td>Severe Exposure</td>
<td>Unconsciousness, paralysis, cyanosis, seizures</td>
<td>Three 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.</td>
</tr>
</tbody>
</table>

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.
BLS/ALS

1. FOLLOW DIRECTIONS OF THE HAZMAT COMMAND ON SCENE.

2. Patient management per appropriate SMO.

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
ADULT CHRONIC RENAL FAILURE - DIALYSIS PATIENT EMERGENCIES

Effective: 4/1/2019

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

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, and clamp 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. Adult Initial Medical Care SMO
2. If lungs clear, give IV FLUID BOLUS of 200 mL. May repeat if lungs remain clear
3. If widened QRS complex, suspect hyperkalemia and follow ADULT HYPERKALEMIA SMO
4. If unresponsive to IV fluid bolus or pulmonary edema present, treat per CARDIOGENIC SHOCK SMO

CARDIAC ARREST
1. Adult Initial Medical Care SMO
2. Treat per appropriate cardiac arrest SMO
ADULT SUSPECTED HYPERKALEMIA

Effective: 4/1/2019

BLS/ALS

STABLE: Alert, normotensive
1. **Adult Initial Medical Care SMO**
   Common complaints may include:
   - Generalized fatigue
   - Weakness
   - Paresthesia / paralysis
   - Palpitations
   Predisposing conditions may include:
   - Acute / Chronic renal failure
   - Rhabdomyolysis, burns, crush injuries
   - Potassium supplements, potassium-sparing diuretics, NSAIDs, beta-blockers, digoxin, digitalis glycosides
   - Metabolic acidosis, DKA, catabolic states

ALS

STABLE: (peaked T waves)
2. 12 lead ECG
3. SODIUM BICARBONATE 1 mEq/kg IV/IO, up to 50 mEq

UNSTABLE: altered mental status and/or hypoperfusion with a widened QRS, complete loss of P wave or sine wave
2. **ALBUTEROL 5.0 mg (6 mL) via nebulizer, may repeat x 1**
3. SODIUM BICARBONATE 50 mEq IV/IO
4. If cardiac arrest occurs treat per appropriate SMO

![sine wave pattern]
HEAT CRAMPS OR TETANY

**BLS/ALS**
1. Adult Initial Trauma Care SMO
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 **ADULT DIABETIC / GLUCOSE EMERGENCIES**

**ALS**
4. **IV FLUID BOLUS** in 200 mL increments
5. If seizures occur, refer to **ADULT SEIZURES / STATUS EPILEPTICUS**

**NOTE:**
- Warmed fluids should be avoided when giving normal saline
ADULT COLD EMERGENCIES
Frostbite and Hypothermia

Effective: 4/1/2019

BLS/ALS
1. Adult Initial Trauma Care SMO

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 in pain and systolic BP > 100 mmHg, pain control per ADULT PAIN CONTROL SMO.

MILD / MODERATE HYPOTHERMIA: conscious or altered sensorium, shivering
BLS/ALS
5. Check blood glucose level if available. If < 60, treat per ADULT DIABETIC / GLUCOSE EMERGENCIES
6. 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
5. Check pulse for 30-60 seconds. Anticipate bradycardia.

ALS
7. 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
8. Maintain adequate ventilation, if needed place advanced airway
9. Establish vascular access IV/IO
10. Transport patient in supine position, very gently to avoid precipitating VF

NOTE:
• ETCO2 readings may be low due to decreased metabolic activity.
• Warm fluid should be used if available
1. Assess SCENE AND PERSONAL SAFETY. Call law enforcement personnel to scene, if needed. Above all, **DO NOTHING TO JEOPARDIZE YOUR OWN SAFETY**.

2. **Adult Initial Medical Care SMO**, as situation warrants.
   - Determine and document if patient is a threat to self or others, or if patient is unable to care for 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 SMO:
   - 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, give **VERSED (midazolam) 2 mg increments** IV q 2 minutes up to 10 mg total as necessary.
   - May give **VERSED (midazolam) IM** if unable to start IV
     - < 70 kg = 2.5 mg IM
     - ≥ 70 kg = 5 mg IM

8. For excited delirium (patients with aggression, hyperthermia, violence), give **KETAMINE 4 mg/kg IM, max dose of 500 mg (5 mL / injection site)**
**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 ≤ 90 mmHg or lack of a radial pulse
  - Pediatric systolic SBP ≤ 70+(age in years x 2)
- 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 use **Specialty Transport / aeromedical evacuation** must be approved by Medical Control.

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.

Any patient meeting the criteria for consideration of direct bypass to a Level I Trauma Center should be considered **TIME-SENSITIVE. Contact Medical Control at the initial point of contact, as soon as a clinical impression has been formed from assessment findings.**

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 specialty services exists.

**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

IV. Motor Vehicle Crashes
A. Extrication time ≥ 20 minutes
B. Vehicle passenger space invaded by ≥ 12 inches
C. Ejection
D. Fatality at the scene within the same motor vehicle
E. Rollover ≥ 180° spin
F. Child ≤ 15 years struck by car
G. Child ≤ 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 ≤ 8
D. Child ≤ 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 ≥ 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 SMO
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
- 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 appropriate 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 appropriate hospitals (adhering to trauma triage criteria for Level I and II transports), contact the closest Resource 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.**
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 prehospital 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 BLS patient in each ambulance
- No radio reports to hospitals; treat per SMOs
- 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.
     - Communicate with Resource hospital as needed.
   - 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 may no longer apply depending on number of patients.

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 SMO and/or using personnel and resources as available.
JumpSTART Triage Algorithm

Able to walk? Yes → MINOR → Secondary Triage

No

Spontaneous Breathing? No

Position Upper Airway

Breathing

Apnea

No → DECEASED

Palpable Pulse? No

Give 5 rescue breaths

Remains Apneic → DECEASED

Breathing

<15 or >45

Respiratory Rate 15 - 45

No → IMMEDIATE

Palpable Pulse? Yes

AVPU

"A", "V" or "P" (appropriate)

"P" (inappropriate), Posturing or "U"

IMMEDIATE

DELAYED
SPECIALTY TRANSPORT

BLS/ALS

GENERAL CONSIDERATIONS

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 an 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 SMOs 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

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:
   - number of patients
   - type and extent of injuries
   - vital signs and pertinent history
- proposed landing site/scene location
- unusual circumstances, e.g. hazardous materials

Region VIII Critical Care Vehicle Service Providers

**Aeromedical**

Air Methods LifeStar  1-866-480-6030

**Ground Critical Care**

Advanced Critical Transport (ACT)  708-387-0817
Edward Ambulance  630-646-3000
Good Samaritan STT  1-800-URGENT 5

**Bariatric**

Advanced Critical Transport (ACT)  708-387-0817 (BLS only)
Edward Ambulance  630-646-3000
Loyola Medicine Transport  844-381-2620
**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:** Consider **SPINE MOTION RESTRICTION**. Position airway and suction as needed. Advanced airway procedures as indicated. If unable to secure by other means, consider **CRICOTHYROIDOTOMY**.

2. **BREATHING/VENTILATION:** Assess ventilation and oxygenation; expose chest as needed.
   - Auscultate breath sounds
   - Consider need for supplemental oxygen, especially for patients with dyspnea, suspected hypoxemia or altered mental status
     - Evaluate oxygen saturation if pulse oximetry available
     - Target SpO₂ 94-98% (92% if hx of COPD)

<table>
<thead>
<tr>
<th>Respiratory Assessment / Findings</th>
<th>Oxygen Administration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adequate rate/depth, minimal distress, mild hypoxia, baseline SpO₂ 92-94% (88-91% COPD)</td>
<td>Low FiO₂</td>
</tr>
<tr>
<td>Adequate rate/depth, moderate/severe distress, SpO₂ &lt; 92% (&lt; 88% COPD)</td>
<td>High FiO₂</td>
</tr>
<tr>
<td>Inadequate rate/depth with moderate/severe distress, unstable</td>
<td>High FiO₂ by BVM ventilation</td>
</tr>
</tbody>
</table>

- Hyperoxia contraindicated in uncomplicated myocardial infarction / STEMI, post-cardiac arrest, acute exacerbations of COPD, stroke, newly born / neonatal resuscitation. If supplemental oxygen is used in these patients, the goal is to relieve hypoxemia without causing hyperoxia (target SpO₂ 94%, not 100%).

3. **CIRCULATION:** assess cardiovascular status.
   - If no carotid pulse, follow **ADULT TRAUMATIC ARREST SMO**
   - Control all external hemorrhage
     - For severe hemorrhage, apply **TOURNIQUET** for extremity injury and/or **HEMOSTATIC GAUGE** (if available) with direct pressure; do not release tourniquet or remove dressings once applied, note time applied
   - **ALS:** Attempt **VASCULAR ACCESS**. Infusion rate as follows:
     - **Inadequate perfusion** (altered mental status or signs of hypoperfusion): Attempt vascular access (large bore IV or IO if the patient meets all other criteria) enroute. Titrate IV fluid for a SBP of 90 mmHg (unless S/S of herniation are present, then SBP target of 110 should be attempted). Use warm fluids unless hyperthermic
     - **Adequate perfusion:** Attempt IV enroute. Titrate fluid volume to patient condition.
   - **ALS:** refer to **ADULT DRUG ASSISTED INTUBATION SMO**, if needed
   - **ALS:** if tension pneumothorax, perform **PLEURAL DECOMPRESSION** of affected side

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

**ALS**
- If GCS score ≤ 8, see [ADULT HEAD INJURIES SMO](#)
- **No neurological impairment**: Reassess periodically and document changes
- **Altered Mental Status**: Seizure and vomiting precautions. Check glucose level. If glucose < 60, treat per [ADULT DIABETIC EMERGENCIES SMO](#)

**BLS/ALS**
5. Expose and examine as indicated. Consider potential injuries based on mechanism of injury.
6. Identify priority transport.
7. **SPINE MOTION RESTRICTION SMO** as indicated.
8. Assess pain score on a scale from 0-10. Treat pain per appropriate SMO.

**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](#)

**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.
# ADULT GLASGOW COMA SCALE

<table>
<thead>
<tr>
<th>EYE OPENING</th>
<th>Score</th>
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<tbody>
<tr>
<td>Spontaneous</td>
<td>4</td>
</tr>
<tr>
<td>To voice</td>
<td>3</td>
</tr>
<tr>
<td>To pain</td>
<td>2</td>
</tr>
<tr>
<td>None</td>
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<table>
<thead>
<tr>
<th>VERBAL RESPONSE</th>
<th>Score</th>
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<tbody>
<tr>
<td>Oriented</td>
<td>5</td>
</tr>
<tr>
<td>Confused speech</td>
<td>4</td>
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<tr>
<td>Inappropriate words</td>
<td>3</td>
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<tr>
<td>Incomprehensible sounds</td>
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<tr>
<td>None</td>
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<table>
<thead>
<tr>
<th>MOTOR RESPONSE</th>
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<tbody>
<tr>
<td>Obeys commands</td>
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<tr>
<td>Localizes pain</td>
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</tr>
<tr>
<td>Withdraws to pain</td>
<td>4</td>
</tr>
<tr>
<td>Abnormal flexion to pain</td>
<td>3</td>
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<tr>
<td>Abnormal extension</td>
<td>2</td>
</tr>
<tr>
<td>None</td>
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</table>

**TOTAL GLASGOW COMA SCALE SCORE:**

(3-15)

# REVISED TRAUMA SCORE

<table>
<thead>
<tr>
<th>Glasgow Coma Score Conversion Points</th>
<th>Score</th>
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<tbody>
<tr>
<td>GCS 13-15</td>
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<tr>
<td>GCS 9-12</td>
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<td>GCS 6-8</td>
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<td>GCS 4-5</td>
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<tr>
<td>GCS 3</td>
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<table>
<thead>
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<th>Respiratory Rate</th>
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<td>10-29</td>
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<tr>
<td>&gt; 29</td>
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<tr>
<td>6-9</td>
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<tr>
<td>1-5</td>
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<table>
<thead>
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<th>Systolic Blood Pressure</th>
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<td>76-89</td>
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<td>50-75</td>
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<tr>
<td>1-49</td>
<td>1</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
</tr>
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</table>

**TOTAL REVISED TRAUMA SCORE:**
BLS/ALS
1. **Adult Initial Trauma Care SMO**
   - Assure adequacy of ventilation
   - **ADULT SPINE MOTION RESTRICTION SMO**
   - Keep patient flat
   - Take vomiting and seizure precautions
   - Assess Glasgow Coma Scale (GCS)
   - Identify deficits
   - Check and record blood glucose level, if available. If glucose < 60, treat per **ADULT DIABETIC / GLUCOSE EMERGENCIES SMO**

2. Begin expeditious transport and contact Medical Control enroute

**Altered Mental Status**

**ALS**
3. If GCS score ≤ 8, **maintain adequate ventilation, if needed place advanced airway** using in-line procedure. Refer to **ADULT DRUG ASSISTED INTUBATION SMO**, if indicated. If unable to INTUBATE, consider use of **ALTERNATE AIRWAY DEVICE**.
4. If signs or symptoms of herniation are present (HTN, bradycardia, posturing) ventilate with a target ETCO2 of 30 mmHg. Elevate head of backboard 20-30 degrees unless unsafe to do so.
5. If seizure activity, treat per **ADULT SEIZURES / STATUS EPILEPTICUS SMO**
6. For the combative patient, consider **VERSED (midazolam) 2 mg increments IV** q 2 minutes up to 10 mg total as necessary.
   - May give **VERSED (midazolam) IM** if unable to start IV
     - < 70 kg = 2.5 mg IM
     - ≥ 70 kg = 5 mg IM
BLS/ALS
1. **Adult Initial Trauma Care SMO**
   - ADULT SPINE MOTION RESTRICTION SMO
   - Keep patient flat
   - Take vomiting and seizure precautions
   - Glasgow Coma Scale (GCS) score
   - Check and record blood glucose level, if available. If glucose < 60, treat per ADULT DIABETIC / GLUCOSE EMERGENCIES

2. Mark on patient where sensation is lost and note time.

ALS
If signs of hypoperfusion (consider neurogenic shock):
3. **Systolic BP < 90 mmHg**
   - IV FLUID BOLUS in 200 mL increments as needed up to 2 L

If hypoperfusion continues with bradycardia:
4. Continue IV fluids and give DOPAMINE IV/IO piggyback 5-20 mcg/kg/min titrated for patient condition.

Altered Mental Status
5. If GCS score ≤ 8, maintain adequate ventilation, if needed place advanced airway using in-line procedure. Refer to ADULT DRUG ASSISTED INTUBATION SMO, if indicated. If unable to INTUBATE, consider use of ALTERNATE AIRWAY DEVICE.

6. If seizure activity, treat per ADULT SEIZURES / STATUS EPILEPTICUS
1. Apply cervical collar if point spine tenderness / anatomical abnormality is noted, or any of the following exist:

- **#1 Determine if neurological deficit exists**
  - Patient fails the motor sensory exam.
  - Patient complains of *any* type of loss of motor function.
  - Patient complains of *any* type of loss of feeling.
  - Patient complains of *anything* that can be construed as neurological in nature (i.e., shooting pains, paresthesia, etc.)

- **#2 Determine if this is a high risk patient**
  - Ejection from a vehicle
  - Motorcycle crash > 20mph
  - Auto vs. Pedestrian > 20 mph
  - Rollover >180 degrees
  - Axial load to head (i.e., diving/spearing)
  - Fall from 3x the patient’s height
  - Provider judgement

- **#3 If low risk patient, determine reliability**
  - Intoxication
  - Patient <9 years of age
  - Language barrier
  - Altered mental status
  - Distracting injuries
  - Known osteo-degenerative disease
  - Patients >65 years of age

**NOTE:** If following this SMO would jeopardize crew or patient safety, follow to the best of the crews ability and document reasons why steps could not be completed.
BLS/ALS
1. **Adult Initial Trauma Care SMO**
   - 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 / chest seal per System-specific procedure
4. If patient deteriorates, remove dressing temporarily to allow air to escape
5. **ALS:** Consider intubation, *do NOT place patient on CPAP*

FLAIL CHEST
3. If respiratory distress, appropriately VENTILATE WITH HIGH FiO₂ VIA BVM to provide internal splinting.
4. **ALS:** Consider intubation, *do NOT place patient on CPAP*

TENSION PNEUMOTHORAX
3. Suspect when patient presents with severe respiratory distress or difficulty ventilating, with any of the following: hypotension, distended neck veins, absent breath sounds on the involved side, and/or tracheal deviation.
4. **ALS:** PLEURAL DECOMPRESSION of affected side, per System-specific procedure
5. Assess for PEA. If present, refer to **ADULT ASYSTOLE / PEA SMO**

PERICARDIAL TAMPONADE
3. Large bore IV access, **IV Normal Saline 200 mL NS boluses titrated for a SBP of 90 mmHg.**
4. If cardiac arrest occurs, treat per appropriate SMO
ADULT TRAUMATIC ARREST

Effective: 4/1/2019
Reviewed:
Revised:

BLS/ALS
1. If obviously dead, consider referring to Withholding or Withdrawal of Resuscitative Efforts SMO
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:
   - Adult Initial Trauma Care SMO
   - BILATERAL PLEURAL DECOMPRESSION
   - Consider appropriate cardiac arrest SMO
   - Verify tube placement if intubated

Note: After SPINE MOTION RESTRICTION SMO and airway control is established, procedures are to be performed enroute.
GENERAL APPROACH

BLS/ALS
1. **Adult Initial Trauma Care SMO**
   - Assess pain on a 0-10 scale
   - Quickly assess 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 patient is in pain and systolic BP > 100 mmHg, treat per **ADULT PAIN CONTROL SMO**

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.
ADULT BURN INJURIES

BLS/ALS
1. **Adult Initial Trauma Care SMO**
2. Unresponsive patients found at the scene of a fire, consider cyanide poisoning. Refer to **ADULT TOXICOLOGIC EMERGENCIES SMO**
3. 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.
4. Ensure burning process has stopped

ALS
5. If patient is in pain and systolic BP > 100 mmHg, treat per **ADULT PAIN CONTROL SMO**.
6. 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
7. 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.**
8. Wear gloves and mask until burn wounds are covered.
9. **DO NOT** break blisters. If > 10% TBSA affected, cover burn with DRY, sterile dressings.
10. Open dry sheet on stretcher before placing patient for transport. Cover patient with dry sheets and blanket to maintain body temperature.

INHALATION BURNS
7. Note presence of wheezing, hoarseness, stridor, carbonaceous (black) sputum / cough, singed nasal hair / eyebrows / eyelashes.
8. Monitor ETCO2 waveform (if available)
9. **HIGH FiO2 or VENTILATION**
10. Consider **INTUBATION** if severe respiratory distress. If intubation unsuccessful, consider **CRICOTHYROIDOTOMY**.
11. If wheezing, consider **ALBUTEROL 2.5 mg (3 mL) via nebulizer**. May repeat x 1.

ELECTRICAL BURNS
7. **SPINE MOTION RESTRICTION** as indicated

ALS
8. Assess ECG for dysrhythmias and treat according to appropriate SMO
9. Assess for wounds, including neurovascular status
10. Cover wounds with dry sterile dressing (cooling not necessary)

CHEMICAL BURNS
7. HazMat precautions
8. If powdered chemical, brush away access. Remove clothing, if possible.
9. Irrigate with copious amounts of sterile water or Normal Saline ASAP and while enroute.
10. Transport information from MSDS/SDS if available
EMD (TASER) WEAPONS INJURIES

This SMO 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.** Obtain baseline behavior from PD / LEO prior to EMD (i.e. TASER®) event

2. **Adult Initial Trauma Care SMO**
   - Assess for injury and/or altered mental status and treat per appropriate SMO.
   - Check and record 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 barbs 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 barbs are found to be superficially embedded in other locations, they may be removed as follows:
   - Place one hand on the patient where the barb is embedded to stabilize the skin surrounding the puncture site.
   - Firmly grasp the barb with your other hand.
   - Remove by gently pulling the barb straight out along the same plane it entered the body.
   - Assure that the barb is intact
   - Repeat procedure with second barb, if embedded.
   - Return the barbs 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 not transported to the hospital and if the patient has not had a tetanus immunization in the last five years, they should be advised to get one.
ADULT MUSCULOSKELETAL INJURIES

BLS/ALS
1. Adult Initial Trauma Care SMO
2. **ALS**: Consider analgesia, if patient SBP > 100 mmHg
   - NITROUS OXIDE per System-specific policy for MILD pain
   - For SEVERE pain treat per ADULT PAIN CONTROL SMO:
3. Splint or immobilize injuries as indicated. 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/IM/IN q 2 minutes up to 10 mg total as necessary.

AMPUTATION / DEGLOVING INJURIES
6. If amputation is incomplete, stabilize with bulky dressing.
7. If serious bleeding is present, 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.

INCAPACITATING BACK PAIN (traumatic and non-traumatic origin)

BLS/ALS
1. **Adult Initial Trauma Care SMO**
   - 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 consider SPINE MOTION RESTRICTION SMO as indicated. Check for distal vascular, motor, and sensory function.

ALS
4. Consider analgesia, if patient SBP > 100 mmHg
   - NITROUS OXIDE per System-specific policy for MILD pain
   - For SEVERE pain treat per ADULT PAIN CONTROL SMO.
5. If patient is experiencing nausea or vomiting, consider giving ZOFRAN (ondansetron) ODT 4 mg tab or 4 mg slow IV x 1 dose only.
BLS/ALS
1. **Adult Initial Trauma Care SMO**
2. Start treatment as soon as safely possible to do so (if safe start while patient is still entrapped or encased)
3. Identify any severe hemorrhage. If found on limb, place tourniquet as close to injury as possible (never on a joint). If unable to assess limb and there is a probable mechanism for crush/amputation, place tourniquet.
4. Give high flow O2 via NRB unless unsafe to do so.

ALS
5. **Establish large bore IV/IO x 2, give Normal Saline initial bolus of 10 mL/kg** (prior to extrication if possible). If pulmonary edema occurs, STOP bolus and treat per **ADULT PULMONARY EDEMA SMO**
6. For significant crush injuries or prolonged entrapped extremity, consider **SODIUM BICARBONATE 50 mEq IV/IO over 5 minutes**
7. ECG monitoring during entrapment, if possible. If signs/symptoms of hyperkalemia are noted, treat per **ADULT HYPERKALEMIA SMO**. Once removed, 12 lead ECG should be obtained and repeated as indicated.
8. Consider analgesia, if patient SBP > 100 mmHg per **ADULT PAIN CONTROL SMO**
9. After initial Normal Saline fluid bolus, give an additional **Normal Saline 1 L/hr**. If pulmonary edema occurs, STOP Normal Saline and treat per **ADULT PULMONARY EDEMA SMO**
10. If cardiac arrest occurs, treat per appropriate SMO
BLS/ALS
1. **Adult Initial Trauma Care SMO**
2. Coach patient to keep knees elevated until, during and post rescue **DO NOT ALLOW PATIENT TO STAND**.
3. Place patient in high Fowlers position, with knees to chest during transport. If patient is unresponsive place in lateral position with knees to chest. If patient needs to be placed supine, knees should be placed or held to chest.
4. Give **High FiO2 Oxygen** unless contraindicated

ALS
5. Establish IV, give **Normal Saline 1 L IV** after rescue, if pulmonary edema occurs, STOP Normal Saline bolus and treat per **ADULT PULMONARY EDEMA SMO**
6. Assess ECG, if signs and symptoms of hyperkalemia treat per **ADULT HYPERKALEMIA SMO**
7. Consider analgesia, if patient SBP > 100 mmHg per **ADULT PAIN CONTROL SMO**
8. If cardiac arrest occurs, treat per appropriate SMO
1. [Adult Initial Trauma Care SMO]
2. Remove wet clothing
3. Assess patient’s temperature
   - If NORMOTHERMIC, treat cardiac dysrhythmias per appropriate SMO
   - If HYPOTHERMIC, treat per [ADULT COLD EMERGENCIES SMO]
4. Treat any respiratory symptoms per appropriate SMO
   - Inadequate Ventilation and Respiratory Effort
     - In water, start rescue breathing / ventilations
     - When out of water, begin CPR
     - Apply AED / defibrillator and check rhythm
   - Adequate Ventilation and Respiratory Effort
     - Complete initial assessment
     - Remove wet clothing
     - Prevent further heat loss
     - Provide supplemental oxygen as indicated
     - Refer to [ADULT COLD EMERGENCIES SMO], as needed
   - Refer to appropriate adult cardiac and respiratory SMOs
5. Treat other symptoms per appropriate SMO
   - Contact Medical Control
   - Transport
   - Support ABCs
   - Observe
   - Keep warm

If Breathing resumes ----> If breathing does not resume

Keep warm
BLS/ALS
1. **Adult Initial Medical Care SMO**, or **Adult Initial Trauma Care SMO**.
2. Treat obvious injuries per appropriate SMO

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
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
   - Illinois Nursing Home Abuse Hotline
     - 1-800-252-4343
BLS/ALS
1. Adult Initial Trauma Care SMO
   • Be aware that the mother may appear stable, but the fetus may be in jeopardy
   • Reference Field Trauma Guidelines
2. Visualize externally for vaginal bleeding, leaking amniotic fluid or crowning. Assess for fetal movements and uterine contractions.
3. Raise right side of backboard with 4-6 inches of padding to place patient on left side.
4. If CPR indicated, manually displace uterus to left side. Follow appropriate Cardiac Arrest SMO
5. Notify Medical Control ASAP in order to mobilize appropriate hospital personnel.
OBSTETRICAL COMPLICATIONS - BLEEDING

BLS/ALS
1. **Adult Initial Medical Care SMO**
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
3. Note type, color and amount of bleeding and/or vaginal discharge. If tissue passes, collect and bring to the hospital with the patient.
OBSTETRICAL COMPLICATIONS – TOXEMIA / PREGNANCY INDUCED HYPERTENSION

BLS/ALS
1. **Adult Initial Medical Care SMO**
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.

**ALS**

**Pre-Eclampsia** - SBP > 160 mmHg and/or DBP > 110 mHg with any of the following:
   - Headache
   - Visual changes
   - Altered mental status
   - Abdominal pain
   - Pulmonary Edema

**Eclampsia (seizure activity) / Postpartum Eclampsia**
3. If actively seizing, give **VERSED (midazolam) 2 mg IV/IO (4 mg IN)** q 2 minutes up to 10 mg as necessary, titrated to control seizures.
PHASE I: UNCOMPLICATED LABOR

1. Assess history and determine if there is adequate time to transport
   - Gravida (number of pregnancies) and Para (number of live births).
   - Number of miscarriages, stillbirths, and multiple births.
   - Due date (expected date of confinement, “EDC”) or date of LMP (last menstrual period).
   - Onset, duration, and frequency of contractions (time from beginning of one contraction to beginning of the next).
   - Length of previous labors in hours.
   - Status of membranes, intact or ruptured. If ruptured, inspect for prolapsed cord or evidence of meconium.
   - 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. **Adult Initial Medical Care SMO**
   - If patient is hyperventilating, coach her to take slow deep breaths
   - **ALS:** If patient becomes hypotensive or lightheaded at any time, **IV FLUID BOLUS in 200 mL increments**
   - **Request additional ALS unit for second patient**

4. Position patient supine on a flat surface, if possible. Use standard precautions.


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 newly born should deliver quickly with one contraction. Firmly grasp the newly born as it emerges. Newly born will be wet and slippery.

12. Keep newly born level with vagina until cord stops pulsating and is double clamped.
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 SMO
2. Deliver head and body
3. Clamp and cut cord
4. Assess newly born risk factors:
   - Term gestation?
   - Breathing or crying?
   - Good muscle tone?
5. Provide basic care:
   - Warm and maintain normal temperature
   - Position; clear airway as needed with bulb syringe or suction, mouth before nose
   - Dry the newly born and stimulate
6. Assess condition and respirations:

<table>
<thead>
<tr>
<th>Apnea or gasping</th>
<th>Labored breathing or persistent cyanosis</th>
<th>Adequate breathing and good color</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive pressure ventilations</td>
<td>Position and clear airway</td>
<td>SpO2 monitor</td>
</tr>
<tr>
<td>SpO2 monitor</td>
<td>SpO2 monitor</td>
<td>Consider ECG monitor</td>
</tr>
<tr>
<td>ECG monitor</td>
<td>ECG monitor</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Consider need for increased FiO2</td>
<td></td>
</tr>
</tbody>
</table>

Targeted SpO2 after birth

<table>
<thead>
<tr>
<th>Time</th>
<th>Target SpO2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 min</td>
<td>60 – 65%</td>
</tr>
<tr>
<td>2 min</td>
<td>65 – 70%</td>
</tr>
<tr>
<td>3 min</td>
<td>70 – 75%</td>
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<tr>
<td>4 min</td>
<td>75 – 80%</td>
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<tr>
<td>5 min</td>
<td>80 – 85%</td>
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<tr>
<td>10 min</td>
<td>85 – 95%</td>
</tr>
</tbody>
</table>
7. Check heart rate

<table>
<thead>
<tr>
<th>HR &lt; 60</th>
<th>HR 60 – 100</th>
<th>HR &gt; 100</th>
</tr>
</thead>
<tbody>
<tr>
<td>• CPR for 30 seconds at a ratio of 3:1 with ventilations (FiO2 of 21–30%)&lt;br&gt;• consider ENDOTRACHEAL INTUBATION&lt;br&gt;• consider VASCULAR ACCESS</td>
<td>• continue ventilations for 1-2 minutes, reassess</td>
<td>• Contact Medical Control&lt;br&gt;• Support ABCs&lt;br&gt;• Provide basic care</td>
</tr>
<tr>
<td>HR remains &lt; 60</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• attempt ENDOTRACHEAL INTUBATION and VASCULAR ACCESS&lt;br&gt;• EPINEPHRINE 1:10,000 0.1 mL/kg IV/IO or 0.3 mL/kg ET&lt;br&gt;• repeat EPINEPHRINE q 3 min with continuous CPR as long as HR remains &lt; 60</td>
<td>• Continue ventilations&lt;br&gt;• Contact Medical Control&lt;br&gt;• Support ABCs&lt;br&gt;• Provide basic care</td>
<td></td>
</tr>
<tr>
<td>HR remains 60 – 100</td>
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</table>
| 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.<br>   • Massage top of uterus (fundus) until firm.<br>   • Breast-feeding may increase uterine tone. Allow newly born to nurse.

4. If signs of hypoperfusion despite above treatment, start second IV enroute and fluid boluses.

**Special Considerations:**
- Focus should be on newborns 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 10% 5 mL/kg IV/IO
  ♦ IV FLUID BOLUS of 10 mL/kg
  ♦ NARCAN (naloxone) 0.1 mg/kg IV/IN/IO

### APGAR SCORING

<table>
<thead>
<tr>
<th>Appearance (skin color)</th>
<th>Pulse (heart rate)</th>
<th>Grimace (reflex irritability)</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blue or Pale</td>
<td>Absent</td>
<td>Limp</td>
<td>Limp</td>
</tr>
<tr>
<td>Blue Hands or Feet</td>
<td>&lt; 100 /min</td>
<td>Grimace</td>
<td>Some Flexion of</td>
</tr>
<tr>
<td>Entirely Pink</td>
<td>&gt; 100 /min</td>
<td>Cough / Sneeze or Appropriate to Stimuli</td>
<td>Active Movement</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>APGAR SCORING</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>1 min</th>
<th>5 min</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance (skin color)</td>
<td>Blue or Pale</td>
<td>Blue Hands or Feet</td>
<td>Entirely Pink</td>
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<td>&lt; 100 /min</td>
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<tr>
<td>Grimace (reflex irritability)</td>
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<td>Grimace</td>
<td>Cough / Sneeze or Appropriate to Stimuli</td>
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<tr>
<td>Activity</td>
<td>Limp</td>
<td>Some Flexion of</td>
<td>Active Movement</td>
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<tr>
<td>Respiration</td>
<td>Absent</td>
<td>Weak Cry / Hypo-ventilation</td>
<td>Strong</td>
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</table>
DELIVERY COMPLICATIONS

BLS/ALS
1. **Adult Initial Medical Care SMO**
   - 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 newly born and protect head

BREECH BIRTH
2. **NEVER ATTEMPT TO PULL THE NEWLY BORN 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 newly born distress. Refer to [EMERGENCY CHILDBIRTH - PHASE III: CARE OF THE NEWLY BORN](#)

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.
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: "newly born" (less than 24 hours), "neonate" (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. Consider need for supplemental oxygen
   - If no distress, consider supplemental OXYGEN AT LOW FiO₂ (blow-by method or nasal cannula)
   - If unstable or in distress, give HIGH FiO₂ BY MASK or ASSIST WITH HIGH FiO₂ BVM
   - Consider nasal cannula waveform capnography for spontaneously breathing patients with respiratory distress and/or metabolic disorders
6. Check blood glucose if indicated
   - Treat hypoglycemia per PEDIATRIC ALTERED MENTAL STATUS SMO
7. Assess ECG rhythm (if indicated and if available)
8. Assess pulse oximetry
9. Assess ETCO₂ value and waveform (if available)
10. If age > 1 year and patient is experiencing nausea or vomiting, consider giving ZOFRAN (ondansetron):
    - ≥ 40 kg: ODT 4 mg tab or 4 mg slow IV x 1 dose only
    - < 40 kg: 2 mg slow IV x 1 dose only (no oral dose for < 40 kg)
**BLS / ALS**

1. **Pediatric Initial Medical Care SMO**
   - 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 potentially reversible causes:
     - Hypovolemia
     - Hypoxia or ventilation problems
     - Hypoglycemia
     - Hypothermia
     - Hyperkalemia
     - Toxins (overdose)
     - Tamponade (pericardial)
     - Tension pneumothorax
     - Trauma

   If cardiopulmonary compromise present:

2. Give **HIGH FiO\textsubscript{2} BY MASK or SUPPORT WITH BVM VENTILATIONS**

3. If heart rate remains < 60 with hypoperfusion despite adequate ventilation, **perform CPR**

**ALS**

4. Establish **VASCULAR ACCESS IV/IO**

5. If cardiopulmonary compromise continues, give **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, give **ATROPINE 0.02 mg/kg IV/IO.** Minimum dose 0.1 mg. Maximum single dose 0.5 mg.
   - May **repeat ATROPINE x 1** after 3-5 minutes

7. If hypotension / hypoperfusion continues, give **IV FLUID BOLUS of 20 mL/kg x 1**
   - May **REPEAT IV FLUID BOLUS x 2** to a total of 60 mL/kg as indicated

8. Contact Medical Control

9. Transport
   - Support ABCs
   - Keep warm
   - Observe

**Special Considerations:**
- Hypoglycemia has been known to cause bradycardia in infants and children
- Hypothermia can cause bradycardia in infants and children. Refer to **PEDIATRIC COLD EMERGENCIES SMO**
- Monitor IO fluid volumes carefully when using a pressure infuse
PEDIATRIC TACHYCARDIA
(> 180 BPM for age 1-15, > 220 BPM for < 1 year)

Effective: 4/1/2019
Reviewed:
Revised:

1. **Pediatric Initial Medical Care SMO**
   - 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 potentially reversible causes:
     - Hypovolemia
     - Hypoxia or ventilation problems
     - Hypoglycemia
     - Hypothermia
     - Toxins (overdose)
     - Tamponade (pericardial)
     - Tension pneumothorax

2. Place on cardiac monitor and/or pads
3. Contact Medical Control
4. Transport
   - Support ABCs
   - Keep warm

**Stable**

**BLS / ALS**
2. Place on cardiac monitor and/or pads
3. Contact Medical Control
4. Transport
   - Support ABCs
   - Keep warm

**Narrow QRS (≤ 0.08 sec) – Possible SVT**

**Unstable**

**BLS**
2. Contact Medical Control
3. Transport
   - Support ABCs
   - Keep warm

**ALS**
2. Establish VASCULAR ACCESS IV/IO
3. Attempt vagal maneuver
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
   - Consider sedation with VERSED (midazolam) 0.1 mg/kg slow IV/IO or 0.2 mg/kg IN (maximum dose 6 mg < 5 years, 10 mg ≥ 5 years), but do not delay cardioversion

**Wide QRS (> 0.08 sec) – Possible VT**

**Unstable**

**ALS**
2. Establish VASCULAR ACCESS IV/IO
3. SYNCHRONIZED CARDIOVERSION at 1 J/kg
Consider sedation with **VERSED (midazolam) 0.1 mg/kg slow IV/IO or 0.2 mg/kg IN (maximum dose 6 mg < 5 years, 10 mg ≥ 5 years)**, but don’t delay cardioversion.

4. If no conversion, give **SYNCHRONIZED CARDIOVERSION at 2 J/kg**

5. If no conversion, consider **ADENOCARD (adenosine) 0.1 mg/kg rapid IV/IO push ▲**

6. Begin transport and contact Medical Control

**Differential diagnosis of narrow complex rhythms in pediatrics**

<table>
<thead>
<tr>
<th>Probable Supraventricular Tachycardia</th>
<th>Probable Sinus Tachycardia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vague, nonspecific history</td>
<td>History consistent with known cause</td>
</tr>
<tr>
<td>P waves absent/abnormal</td>
<td>P waves present/normal</td>
</tr>
<tr>
<td>HR not variable</td>
<td>Variable R-R; constant P-R</td>
</tr>
<tr>
<td>History of abrupt rate changes</td>
<td>&lt; 1 year: rate usually &lt; 220 BPM</td>
</tr>
<tr>
<td>&lt;1 year: rate usually &gt; 220 BPM</td>
<td>1-15 years: rate usually &lt; 180 BPM</td>
</tr>
<tr>
<td>1-15 years: rate usually &gt; 180 BPM</td>
<td></td>
</tr>
</tbody>
</table>

▲ Follow all Adenocard (adenosine) administrations by an immediate rapid **NORMAL SALINE** flush of ≥ 5 mL
BLS
1. **Pediatric Initial Medical Care SMO**
   - Establish unresponsiveness.
   - If unresponsive, check pulse for a maximum of 10 seconds. If pulseless, start chest compressions (rate of 100 - 120 per minute) at the appropriate ratio
     - Single rescuer – 30 compressions: 2 ventilations
     - Two rescuers – 15 compressions: 2 ventilations
     - Give 2 ventilations (over 1 second each) that cause the chest to rise (if chest does not rise, reposition, reattempt). Allow for adequate exhalation time.
     - **CPR emphasis is to provide continuous high quality CPR with no delays and minimal interruptions**

2. Attach AED and analyze rhythm as soon as available.
   - 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 and pad is appropriate.)
   - If PEDS pads available: Apply to anterior chest with proper contact without overlap of pads. If overlap of pads (or within one inch of each other), use anterior / posterior pad placement with **SPINE MOTION RESTRICTION** if neck/back injury suspected.
   - If only ADULT pads available: Consider whether the size of the pediatric patient would allow anterior / anterior pad placement as above. Otherwise apply anterior / posterior with **SPINE MOTION RESTRICTION** if neck/back injury suspected.

3. Press analyze button (if present) and stand clear of patient.
   - If shock advised:
     - Continue CPR until ready for **SHOCK**
     - 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.

4. Contact Medical Control
5. Transport
   - Support ABCs
   - Observe
   - Keep warm

**Special Considerations:**
- If injury or neck/back trauma suspected, consider **SPINE MOTION RESTRICTION**
- Remove patient from hazardous environment or standing water prior to use of AED
- If AED In place, EMS personnel should let AED complete rhythm analysis prior to switching from AED to manual defibrillator (switch during CPR interval)
**PEDIATRIC PULSELESS ARREST**
*(If BLS, go to PEDIATRIC AED SMO)*

**Effective:** 4/1/2019  
**Reviewed:**  
**Revised:**

**ALS**

1. **Pediatric Initial Medical Care SMO**
2. Initiate CPR at rate of 100-120 compressions per minute
   - No Advanced Airway – 15:2 compression/ventilation ration
   - Advanced Airway – continuous chest compressions with 1 breath every 6 seconds (10 breaths/min)
3. Check cardiac rhythm
   - If Shockable (VF, VT), SHOCK x 1 at 2 J/kg and immediately resume CPR for 2 min
   - If NOT Shockable, immediately resume CPR for 2 min
4. Briefly recheck rhythm and pulse every 2 min while patient remains unresponsive.
   - If Shockable (VF, VT), SHOCK x 1 at 4 J/kg and immediately resume CPR for 2 min
   - If NOT Shockable, immediately resume CPR for 2 min
   - Establish **VASCULAR ACCESS IV/IO**, Maintain adequate ventilation, consider need for Advanced Airway.
5. Give **EPINEPHRINE 1:10,000 0.1 mL/kg (0.01 mg/kg) IV/IO** ♥ while continuing CPR
   - Repeat every 3 to 5 minutes while pulseless
6. If rhythm shockable, give **AMIODARONE 5 mg/kg IV/IO** while continuing CPR
   - Repeat every 3 to 5 min while in shockable pulseless arrest, up to 3 doses total
7. Repeat cycle of 2 minute CPR and rhythm recheck. **DEFIBRILLATE at 4 J/kg** when indicated by shockable rhythm.
8. Transport

**Special Considerations:**

- Search for and treat potentially reversible causes:
  - Hypovolemia
  - Hypoxia or ventilation problems
  - Hypoglycemia
  - Hypothermia
  - Hyperkalemia
  - Toxins (overdose)
  - Tamponade (cardiac)
  - Tension pneumothorax
  - Trauma (hypovolemia, increased intracranial pressure)

- 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**. Maximum dose 2.5 mg ET. Flush with 5 mL of **NORMAL SALINE** and follow with 5 ventilations.

**NOTE:**

If no Amiodarone available, give **LIDOCAINE 1 mg/kg**. Repeat **LIDOCAINE 0.5 mg/kg** every 3-5 min up to 3 mg/kg while in shockable pulseless arrest.
### PEDIATRIC DRUG ASSISTED INTUBATION

**Effective:** 4/1/2019

1. **This SMO is to be used for patients < 15 years of age.** If ≥ 15 years of age, see ADULT DRUG ASSISTED INTUBATION SMO
2. The following are situations which may require the use of this SMO to facilitate intubation:
   - Pediatric Glasgow Coma Scale (PCGS) score ≤ 8
   - Imminent respiratory arrest or imminent tracheal / laryngeal closure from any cause
3. Prepare patient and equipment for procedure:
   - Position patient in sniffing position unless cervical spine injury suspected
   - **HIGH FiO₂ VENTILATION prior to and in-between steps of this procedure as able**
4. Give sedation. Choose only 1 medication to use for sedation based on patient condition:

<table>
<thead>
<tr>
<th><strong>KETAMINE</strong></th>
<th><strong>VERSED</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Initial Dose:</strong></td>
<td>For use if KETAMINE unavailable</td>
</tr>
<tr>
<td>2 mg/kg SLOW IV/IO, max dose 500 mg</td>
<td>0.1 mg/kg SLOW IV/IO up to max of 10 mg</td>
</tr>
<tr>
<td><strong>Repeat Dose:</strong></td>
<td></td>
</tr>
<tr>
<td>1 mg/kg SLOW IV/IO, max dose 250 mg</td>
<td>Contact Medical Control</td>
</tr>
</tbody>
</table>

5. If gag reflex present, give BENZOCAINE SPRAY 0.5 - 1 second spray, 30 second interval x 2.
6. Attempt oral or oral in-line intubation via System-specific procedure
7. After passing of tube, verify placement:
   - Adequate chest expansion bilaterally and symmetrically
   - Positive bilateral breath sounds
   - Negative epigastric sounds
   - Waveform capnography, end tidal CO₂ detector and/or esophageal detection device per System-specific procedure
8. Secure ET tube and reassess placement
9. Continuous waveform ETCO2 monitoring (if available)

### POST INTUBATION SEDATION

10. Give VERSED (midazolam) 0.1 mg/kg slow IV/IO or 0.2 mg/kg IN q 2 minutes to a maximum total dose 6 mg < 5 years, 10 mg ≥ 5 years, including initial sedation

   If unsuccessful, continue HIGH FiO₂ VENTILATION, contact Medical Control, and be prepared for alternative airway/rescue device use or CRICOTHYROIDOTOMY per System-specific procedure.
**BLS / ALS**

1. **Pediatric Initial Medical Care SMO**
2. Perform appropriate airway maneuver
   - Modified jaw thrust or chin lift/head tilt
   - Suction
   - Oropharyngeal airway
3. Consider **SPINE MOTION RESTRICTION** as indicated.
4. If foreign body suspected:
   - Open mouth and remove foreign body if visible
   - Reposition airway
   - Consider back slaps / abdominal thrusts (age-dependent)
5. If not breathing **ASSIST WITH HIGH FiO₂ BVM**
   - Consider airway insertion
6. Chest rise inadequate
   - Reposition airway
   - Consider airway insertion

**BLS**

7. Cardiopulmonary compromise
   - Refer to **PEDIATRIC SHOCK SMO, PEDIATRIC AED SMO**, or **PEDIATRIC PULSELESS ARREST SMO**, as appropriate
   - If heart rate < 60 BPM, go to **PEDIATRIC BRADYDYSRHYTHMIAS SMO**

**ALS**

7. Cardiopulmonary compromise
   - Establish **VASCULAR ACCESS IV/IO** at rate of 20 mL/hr
   - Refer to **PEDIATRIC SHOCK SMO**, or **PEDIATRIC PULSELESS ARREST SMO**
   - If heart rate < 60 BPM, go to **PEDIATRIC BRADYDYSRHYTHMIAS SMO**
8. **Maintain adequate ventilation, if needed place advanced airway**. If intubation needed see **PEDIATRIC DRUG ASSISTED INTUBATION SMO**
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 **DEXTROSE** as indicated
**PE**

**DIATRIC RESPIRATORY DISTRESS**

**BLS / ALS**

1. **Pediatric Initial Medical Care SMO**
2. Complete primary and secondary assessment.
   - Assess for signs of:
     
     | Complete Airway Obstruction | Partial Airway Obstruction | Reactive Airway Disease |
     |------------------------------|-----------------------------|-------------------------|
     | suspected foreign body       | suspected foreign body      | wheezing                |
     | obstruction or epiglottitis  | obstruction or epiglottitis | grunting               |
     | anaphylaxis                  | anaphylaxis                 | retraction             |
     |                              | stridor                     | tachypnea              |
     |                              | history of choking episode  | diminished respirations|
     |                              | drooling                    | decreased breath sounds|
     |                              | hoarseness                  | tachycardia / bradycardia|
     |                              | retractions                 | decreasing consciousness|
     |                              | tripod position             |                         |

   - Refer to **PEDIATRIC RESPIRATORY DISTRESS WITH A TRACHEOSTOMY SMO**, 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**: give **ALBUTEROL (2.5 mg) via nebulizer**
7. If cyanosis or other signs of respiratory insufficiency:
   - **ALS**: give **EPINEPHRINE 1:1000 3 mg (3 mL) via nebulizer**
8. DO NOT attempt intubation, invasive glottic visualization, or venous access

**Reactive (Lower) Airway Disease**

3. Position of comfort
   - **BLS**: assist patient with prescribed beta-agonist MDI if available
   - **ALS**: give **ALBUTEROL (2.5 mg) via nebulizer**
4. Reassess. If no response to ALBUTEROL or patient in severe respiratory distress:
   - **EPINEPHRINE 1:1000 IM**
     - < 30 kg = 0.15 mg (0.15 mL)
     - ≥ 30 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®).
**BLS / ALS**

1. **Pediatric Initial Medical Care SMO**
2. **GIVE HIGH FiO₂ per tracheostomy collar**
   - Suction and reassess airway adequacy
   - 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 airway adequacy

3. **If adequate airway:** 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
     - Chest must rise and fall with each ventilation

**BLS**

5. Refer to PEDIATRIC RESPIRATORY ARREST SMO, or PEDIATRIC PULSELESS ARREST SMO, as indicated.
6. Contact Medical Control and consider ALS backup if available.

**ALS**

5. If wheezing, consider ALBUTEROL 2.5 mg (3 mL) via nebulizer
6. Refer to PEDIATRIC RESPIRATORY ARREST SMO, or PEDIATRIC PULSELESS ARREST SMO, 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.
PEDIATRIC RESPIRATORY DISTRESS WITH A VENTILATOR

Effective: 4/1/2019

BLS / ALS
1. Pediatric Initial Medical Care SMO
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
   • Observe
   • Keep warm

Unable to Ventilate
4. Go to PEDIATRIC RESPIRATORY DISTRESS WITH A TRACHEOSTOMY TUBE SMO, 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
BLS / ALS
1. Pediatric Initial Medical Care SMO
2. Apply ice/cold pack to bite or injection site

ALS
Localized allergic reaction without systemic symptoms – urticarial, hives or edema NOT involving mouth, lips or airway
3. Give 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. Give EPINEPHRINE 1:1000 IM
   - < 30 kg = 0.15 mg (0.15 mL)
   - ≥ 30 kg = 0.3 mg (0.3 mL)
5. If wheezing, consider ALBUTEROL 2.5 mg (3 mL) via nebulizer
6. Give BENADRYL (diphenhydramine) 1 mg/kg IM or slow IV/IO. Max dose 50 mg
7. May REPEAT EPINEPHRINE q 15 min as symptoms persist

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

BLS
3. BLS: consider the administration of one dose EPINEPHRINE auto-injector (EpiPen®) or EpiSafe Kit®
   - < 30 kg = 0.15 mg (0.15 mL)
   - ≥ 30 kg = 0.3 mg (0.3 mL)
4. BLS: consider assisting with patient prescribed Beta-agonist inhaler (albuterol, Proventil, etc.) if available

ALS
3. IV FLUID BOLUS of 20 mL/kg
   - May REPEAT IV FLUID BOLUS x 2 to a total of 60 mL/kg if patient condition indicates
4. Give EPINEPHRINE 1:10,000 0.1 mL/kg (0.01 mg/kg) IV/IO
   - May repeat q 5 minutes
   - If no vascular access, give EPINEPHRINE 1:1000 0.01 mL/kg (0.01 mg/kg) IM.
5. Give BENADRYL (diphenhydramine) 1 mg/kg slow IV/IO. Max dose 50 mg. If no vascular access, give IM.
6. If wheezing, consider ALBUTEROL 2.5 mg (3 mL) via nebulizer
   - If severe or continued wheezing, repeat ALBUTEROL to provide continuous treatments
BLS/ALS
1. **Pediatric Initial Medical Care SMO**
   - **SPINE MOTION RESTRICTION** as indicated
   - Consider other causes of altered mental status and treat per appropriate SMO
   - Assess respiratory effort
2. Check and record blood glucose level

ALS
3. Establish **VASCULAR ACCESS IV/IO**
4. If blood glucose ≤ 60, give:
   - **DEXTROSE 10% 5 mL/kg (0.5g/kg, max 25g) slow IV**. May repeat x 1 after 5 minutes if patient remains hypoglycemic and symptomatic.
   - **OR**
   - **GLUCAGON**
     - > 8 years: 1 mg IM
     - ≤ 8 years: 0.5 mg IM
5. Reassess respiratory effort. If inadequate, give **NARCAN (naloxone):**
   - ≤ 20 kg 0.1 mg/kg IV/IN/IO/IM up to a maximum of 2 mg
   - > 20 kg 2 mg IV/IN/IO/IM
6. If no response to **NARCAN** (naloxone), secure the airway as appropriate

**Special Considerations:**
Consider causes:
- **A** Alcohol, Abuse
- **E** Epilepsy, Electrolytes, Encephalopathy
- **I** Insulin
- **O** Opiates, Overdose
- **U** Uremia
- **T** Trauma, Temperature
- **I** Infection, Inborn errors
- **P** Psychogenic
- **P** Poison
- **S** Shock, Seizures, Stroke, Space-occupying lesion, Subarachnoid hemorrhage, Shunt
History of any of the following:

- Apnea
- Loss of consciousness
- Color change
- Loss of muscle control
- Episode of choking or gagging
- Acute mental status change

Important information to relay to Medical Control and document:

- Parental / caregiver actions at the time of the event
- What resuscitative measures were taken
- Prior history of similar events.

The typical age for such events is 2 years or less, and is most commonly seen in infants under 12 months. A BRUE is an event that is frightening to the observer and usually involves some combination of the above symptoms. It may present as a symptom of a variety of pediatric conditions including seizures, upper airway compromise, gastroesophageal reflux, metabolic problems, anemia and cardiac disease.

**BLS/ALS**

1. **Pediatric Initial Medical Care SMO**
   - Support ABC’s
   - Perform a complete secondary assessment including:
     - General appearance
     - Work of breathing
     - Circulation to skin
     - Evidence of trauma
     - Extent of interaction with the environment
     - **NOTE:** Exam may be normal by the time of patient contact with EMS
   - Treat any reversible causes identified, including blood glucose abnormalities, per appropriate SMO
   - **All BRUE patients should be transported for medical evaluation, even the well appearing child**

2. **Transport**
   - Support ABCs
   - Observe
   - Keep warm
BLS/ALS
1. **Pediatric Initial Medical Care SMO**
3. Protect the patient from injury. Do not place anything in mouth if seizing.
4. Position patient on side unless contraindicated
5. Check and record blood glucose level, if available. If < 60, treat per **PEDIATRIC ALTERED MENTAL STATUS SMO**

**IF ACTIVELY SEIZING:**

**ALS**
6. Give **VERSED (midazolam):**
   - VERSED (midazolam) 0.1 mg/kg slow IV/IO
   - OR
   - VERSED (midazolam) 0.2 mg/kg IN/IM
   - NOTE: Maximum VERSED (midazolam) dose 6 mg < 5 years, 10 mg ≥ 5 years
7. If seizures continue for > 5 minutes, repeat **VERSED (midazolam) 0.1 mg/kg slow IV/IO or 0.2 mg/kg IN/IM** q 2 minutes up to a maximum dose of 6 mg < 5 years, 10 mg ≥ 5 years unless otherwise ordered by Medical Control.
8. Monitor airway for need for airway insertion / intubation.

**FEBRILE SEIZURES:**
6. 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.
7. Give nothing by mouth

**ALS ONLY – Use of patient prescribed DIASTAT® (rectal Valium)**
6. Trained paramedics may give **DIASTAT® (rectal Valium)** to patients:
   - The patient should be actively seizing for > 3 minutes, or having repeated seizures without regaining consciousness, i.e. status epilepticus.
   - The identity of the patient and the name on the prescription must match.
   - The paramedic may assist and or give DIASTAT® at the dose prescribed.
   - If any of these criteria are not met, follow regular **PEDIATRIC SEIZURES / STATUS EPILEPTICUS SMO**
7. 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.
8. Call Medical Control for assistance with any refusals.

**Note:** If suspected that seizure is secondary to opioid overdose, see **PEDIATRIC TOXICOLOGIC OPIOID SMO**
BLS / ALS
1. Pediatric Initial Medical Care SMO
2. Supine position
3. Control bleeding as appropriate

ALS
4. Secure airway as appropriate

Obstructive Shock (Tension Pneumothorax)
5. PLEURAL DECOMPRESSSION

Distributive Shock (Suspected Sepsis)
5. Establish VASCULAR ACCESS IV/IO
6. Give IV FLUID BOLUS of 20 mL/kg
7. If suspected allergic reaction, refer to PEDIATRIC ALLERGIC REACTION / ANAPHYLAXIS SMO
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 SMO
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. Give 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.
BLS/ALS
1. **Pediatric Initial Medical Care SMO**
2. If minor pain:
   - Consider ice packs as needed / appropriate
   - Consider **NITROUS OXIDE** per System-specific procedure

ALS
3. If pain is severe, and SBP ≥ (70+ (age in years x 2)), consider one of the below. Once a medication is chosen, continue with that medication unless approved by Medical Control:

<table>
<thead>
<tr>
<th><strong>FENTANYL</strong> (Preferred)</th>
<th><strong>MORPHINE</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Initial Dose:</strong></td>
<td><strong>Initial Dose:</strong></td>
</tr>
<tr>
<td>1 mcg/kg IV/IO/IN up to 100 mcg</td>
<td>0.1 mg/kg slow IV/IO, max dose of 10 mg</td>
</tr>
<tr>
<td><strong>Repeat Dose:</strong></td>
<td><strong>Repeat Dose:</strong></td>
</tr>
<tr>
<td>Contact Medical Control</td>
<td>Contact Medical Control</td>
</tr>
</tbody>
</table>

4. If ≥ 15 years of age see **ADULT PAIN CONTROL SMO**
5. Follow appropriate SMOs as necessary.
BLS/ALS

STABLE: alert, normotensive
1. Pediatric Initial Medical Care SMO
   - HazMat precautions
   - Do not initiate vomiting

BLS
2. Contact Medical Control
3. Initial interventions per Medical Control as indicated for identified exposure
4. For altered level of consciousness or seizures, refer to appropriate SMO
5. Bring container(s) of drug or substance to the ED
6. Transport
   - Support ABCs
   - Observe
   - Keep warm

BLS / ALS

UNSTABLE: altered mental status, airway compromise, and/or hypoperfusion
1. Pediatric Initial Medical Care SMO
   - HazMat precautions
   - Do not initiate vomiting

For known or suspected OPIOID OVERDOSE or unknown etiology with respiratory compromise:
2. Protect airway, HIGH FiO₂ or VENTILATION
3. Consider NARCAN (naloxone):

<table>
<thead>
<tr>
<th>BLS 2 mg IN</th>
<th>ALS</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤ 20 kg</td>
<td>0.1 mg/kg IV/IN/IO/IM up to a max of 2 mg</td>
</tr>
<tr>
<td>&gt; 20 kg</td>
<td>2 mg IV/IN/IO/IM</td>
</tr>
</tbody>
</table>

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

CYCLIC ANTIDEPRESSANT / SODIUM CHANNEL BLOCKER OVERDOSE
Hypoperfusion associate with wide QRS complex (possible cyclic ingestion)
2. Give IV FLUID BOLUS of 20 mL/kg in increments
3. Give 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. Give GLUCAGON 0.5 mg IV/IO.
   May repeat x1

POTENTIAL EXPOSURES

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

SMELLS

<table>
<thead>
<tr>
<th>SMELL</th>
<th>CAUSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Almond</td>
<td>Cyanide</td>
</tr>
<tr>
<td>Fruit</td>
<td>Alcohol</td>
</tr>
<tr>
<td>Garlic</td>
<td>Arsenic, parathion, DMSO</td>
</tr>
<tr>
<td>Mothballs</td>
<td>Camphor</td>
</tr>
<tr>
<td>Natural gas</td>
<td>Carbon monoxide</td>
</tr>
<tr>
<td>Rotten eggs</td>
<td>Hydrogen sulfide</td>
</tr>
<tr>
<td>Silver polish</td>
<td>Cyanide</td>
</tr>
<tr>
<td>Stove gas</td>
<td>Think CO (CO and methane are odorless)</td>
</tr>
<tr>
<td>Wintergreen</td>
<td>Methyl salicylate</td>
</tr>
</tbody>
</table>

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

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;

<table>
<thead>
<tr>
<th>Signs of Cyanide Poisoning</th>
<th>Symptoms of Cyanide Poisoning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Altered Mental Status</td>
<td>Headache</td>
</tr>
<tr>
<td>Confusion, Disoriented</td>
<td>Confusion</td>
</tr>
<tr>
<td>Tachypnea / Hyperpnea</td>
<td>Dyspnea</td>
</tr>
<tr>
<td>Bradypnea / Apnea</td>
<td>Chest Tightness</td>
</tr>
<tr>
<td>Seizures or Coma</td>
<td>Nausea</td>
</tr>
<tr>
<td>Mydriasis (dilated pupils)</td>
<td></td>
</tr>
<tr>
<td>Hypertension (early)</td>
<td></td>
</tr>
<tr>
<td>Hypotension (late)</td>
<td></td>
</tr>
<tr>
<td>Cardiovascular collapse</td>
<td></td>
</tr>
<tr>
<td>Vomiting</td>
<td></td>
</tr>
</tbody>
</table>

2. **Ensure scene safety** – If necessary, mitigate any hazardous materials and/or chemicals that may impair or endanger the rescuer prior to treatment

3. If available, **give HYDROXOCOBALAMIN (CYANOKIT®) 70 mg/kg** (reconstituted solution is 25 mg/mL)

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 up to total infusion 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

---

#### Drugs Commonly Seen in Overdose / Poisoning

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

---

**Poison Control Center** 1-800-222-1222
### PEDIATRIC NERVE AGENT ANTIDOTE GUIDELINE

**Effective:** 4/1/2019  
**Reviewed:**  
**Revised:**  

<table>
<thead>
<tr>
<th>PATIENT AGE</th>
<th>MILD/MODERATE</th>
<th>SEVERE</th>
</tr>
</thead>
<tbody>
<tr>
<td>INFANT 0-6 months (&lt;7 kg)</td>
<td>0.25mg Atropine 2 PAM¹ 15 mg/kg</td>
<td>0.5mg Atropine* 2 PAM¹ 25 mg/kg</td>
</tr>
<tr>
<td>INFANT 7 months-2 years (7-13 kg)</td>
<td>0.5mg Atropine* 2 PAM¹ 15 mg/kg</td>
<td>1mg Atropine* 300 mg 2 PAM¹</td>
</tr>
<tr>
<td>CHILD 3-7 yrs (14-25kg)</td>
<td>1mg Atropine* 300mg 2 PAM¹</td>
<td>2mg Atropine 600 mg 2 PAM¹</td>
</tr>
<tr>
<td>CHILD 8-14 yrs (25-50kg)</td>
<td>2mg Atropine 600 mg 2 PAM¹</td>
<td>4mg Atropine 1200 mg 2 PAM¹</td>
</tr>
<tr>
<td>ADOLESCENT &gt; 14 yrs (&gt;51 kg)</td>
<td>2mg Atropine 600 mg 2 PAM¹</td>
<td>4mg Atropine 1200 mg 2 PAM¹</td>
</tr>
</tbody>
</table>

* Appropriate dose Atropen auto injector can be used if available  
¹ PAM=Pralidoxime

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**NOTES:**

For nerve agents the doses are:
- Atropine dose 0.05 mg/kg
- 2 PAM¹ 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 PAM¹

2 PAM¹ solution can be prepared from the vial containing 1 gram of dessicated 2 PAM¹. Inject 3 ml of NS or sterile water into the vial and shake well. This results in 3.3ml of 300 mg/ml.

<table>
<thead>
<tr>
<th>Mild</th>
<th>Moderate</th>
<th>Severe</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOB, wheezing, runny nose</td>
<td>Vomiting, drooling, pinpoint pupils</td>
<td>Unconscious, cyanosis, seizures</td>
</tr>
</tbody>
</table>
BLS/ALS

1. **Pediatric Initial Medical Care SMO**
   - Complete Secondary 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
4. Apply cool packs to axilla and groin

**Altered Mental Status**
- Check blood glucose, treat per PEDIATRIC ALTERED MENTAL STATUS SMO
- Continue cooling
  - Apply cool pack to side of neck, axilla and groin
  - Tepid water per sponge / spray
  - Manually fan body to evaporate and cool
  - **Stop active cooling if shivering occurs**

**Normal Mental Status**
- Support ABC’s
- Give cool liquids by mouth if no nausea / vomiting (age dependent)
- Observe
- Transport
BLS/ALS

1. **Pediatric Initial Medical Care SMO**
   - Complete Secondary Assessment

   **Hypothermia Signs & Symptoms**
   - Pt complains of cold
   - Shivering
   - Decreased respiratory rate
   - Dysrhythmias
   - Dilated, sluggish pupils
   - Decreased reflexes
   - May mimic death

   **Signs of Cardiopulmonary Compromise**
   - 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
4. Place heat packs to axilla and groin, taking care to avoid direct skin contact

**Cardiopulmonary Compromise**

3. Support with BVM ventilations as indicated; secure airway as appropriate
4. Avoid unnecessary manipulation and rough handling
5. If pulseless, begin CPR

<table>
<thead>
<tr>
<th>BLS</th>
<th>ALS</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Consider AED if available</td>
<td>- For VF or pulseless VT consider DEFINITION at 2 J/kg</td>
</tr>
<tr>
<td>- If advised, give <strong>ONE SHOCK ONLY</strong></td>
<td>- Give <strong>ONE SHOCK ONLY</strong>, then resume CPR</td>
</tr>
<tr>
<td>- Resume CPR, do not re-analyze rhythm</td>
<td>- Do not re-analyze rhythm or give any additional shocks</td>
</tr>
</tbody>
</table>

6. Refer to appropriate SMO 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
PEDIATRIC INITIAL TRAUMA CARE (PITC)

BLS / ALS
1. If a potential crime scene, make efforts to preserve integrity of potential evidence
2. Anticipate potential injuries based on the mechanism of energy transfer
3. AIRWAY/C-SPINE: SPINE MOTION RESTRICTION as indicated. Position for optimal airway and suction as needed.
4. BREATHING/VENTILATION: Assess ventilations and respiratory effort; expose chest as needed:
   **If inadequate ventilation, respiratory effort**
   - Open airway using modified jaw thrust
   - Relieve upper airway obstruction as indicated
   - VENTILATE WITH HIGH FiO2 via BVM
   - Consider need for advanced airway placement
   - If PGCS score ≤ 8, INTUBATE using in-line procedure
   - Refer to PEDIATRIC DRUG ASSISTED INTUBATION SOP, if indicated
   **If adequate ventilation / respiratory effort**
   - Auscultate breath sounds
   - Give 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)
5. CIRCULATION / PERFUSION:
   - Assess central and peripheral pulses, circulation to skin
   - Assess type, amount and source(s) of hemorrhage
   - Apply direct pressure, pressure dressings to control hemorrhage
   - Consider TOURNIQUET for extremity injury; do not release once applied, note time applied
6. Complete initial assessment, including:
   - Pediatric Trauma Score
   - Pediatric Glasgow Coma Scale (PCGS)
   **If adequate ventilation, respiratory effort, or ventilations being provided as above**
   - Control hemorrhage
   - Splint or immobilize injuries as indicated and time permits

ALS
7. Establish VASCULAR ACCESS IV/IO
8. Give IV FLUID BOLUS of 20 mL/kg
9. Reassess perfusion. May repeat IV FLUID BOLUS of 20 mL/kg x 2 up to total of 60 mL/kg as indicated.
10. 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 SMO, or PEDIATRIC PULSELESS ARREST SMO

If Seizure Activity
   - Refer to PEDIATRIC SEIZURE / STATUS EPILEPTICUS SMO
Suspected Spine Injury / Suspected Neurogenic Shock
11. If patient remains hypoperfused and remains bradycardic, consider ATROPINE 0.02 mg/kg rapid IV/IO. Minimum dose 0.1 mg. Maximum single dose 0.5 mg.
   • May repeat ATROPINE q 3 minutes x 2. Maximum total dose 1.5 mg.

Chest Injury
11. If sucking chest wound, apply occlusive dressing / chest seal per System-specific procedure
12. If suspected tension pneumothorax, PLEURAL DECOMPRESSION of affected side

Musculoskeletal Injuries
11. If patient hemodynamically stable, consider pain control per PEDIATRIC PAIN CONTROL SMO
   • Immobilize and/or splint. Monitor extremity perfusion. Elevate extremity and/or apply cold pack after splinting when appropriate.
12. If long bone fracture with displacement / spasm, and hemodynamically stable, consider administration of:
   • VERSED (midazolam) 0.1 mg/kg slow IV/IO or IN q 2 minutes to a maximum dose of 6 mg < 5 years, 10 mg ≥ 5 years
   • If no other route, VERSED (midazolam) 0.2 mg/kg IM x 1 in unaffected limb.

Amputation / Degloving Injuries
11. Stabilize with bulky dressing.
12. 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.
13. 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)
BLS / ALS

1. **Pediatric Initial Trauma Care SMO**
   - Maintain supine position
   - Consider **SPINE MOTION RESTRICTION** as indicated
   - Assess **Pediatric Glasgow Coma Scale (PGCS)**
   - **BLS**: Contact Medical Control

<table>
<thead>
<tr>
<th>PGCS 13-15 (Mild)</th>
<th>PGCS 9-12 (Moderate)</th>
<th>PGCS ≤ 8 (Severe)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Give HIGH $\text{FiO}_2$</td>
<td>Give HIGH $\text{FiO}_2$</td>
<td>Give HIGH $\text{FiO}_2$</td>
</tr>
<tr>
<td>Control hemorrhage</td>
<td>Support ventilation with BVM as indicated</td>
<td>Support ventilation with BVM</td>
</tr>
<tr>
<td>Reassess PGCS</td>
<td>Control hemorrhage</td>
<td>Control hemorrhage</td>
</tr>
<tr>
<td>Transport</td>
<td>Reassess PGCS</td>
<td>Reassess PGCS</td>
</tr>
<tr>
<td>Support ABCs</td>
<td>Transport</td>
<td>Transport</td>
</tr>
<tr>
<td>Observe</td>
<td>Support ABCs</td>
<td>Support ABCs</td>
</tr>
<tr>
<td>Keep warm</td>
<td>Observe</td>
<td>Observe</td>
</tr>
</tbody>
</table>

2. For the combative head injured patient, consider **VERSED (midazolam) 0.1 mg/kg slow IV/IO or 0.2 mg/kg IN/IM q 2 minutes** to a maximum dose of 6 mg < 5 years, 10 mg ≥ 5 years
### Pediatric Glasgow Coma Scale

**Effective:** 4/1/2019  
**Reviewed:**  
**Revised:**

#### PEDIATRIC GLASGOW COMA SCALE (PGCS)

<table>
<thead>
<tr>
<th></th>
<th>&gt; 1 Year</th>
<th>&lt; 1 Year</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EYE OPENING</strong></td>
<td>Spontaneously</td>
<td>Spontaneously</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>To verbal command</td>
<td>To shout</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>To pain</td>
<td>To pain</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>No response</td>
<td>No response</td>
<td>1</td>
</tr>
<tr>
<td><strong>MOTOR RESPONSE</strong></td>
<td>Obey</td>
<td>Spontaneous</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Localizes pain</td>
<td>Localizes pain</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Flexion-withdrawal</td>
<td>Flexion-withdrawal</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Flexion-abnormal (decorticate rigidity)</td>
<td>Flexion-abnormal (decorticate rigidity)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Extension (decerebrate rigidity)</td>
<td>Extension (decerebrate rigidity)</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>No response</td>
<td>No response</td>
<td>1</td>
</tr>
</tbody>
</table>

|                | > 5 Years                  | 2-5 Years                  | 0-23 months |
|                | Oriented                  | Appropriate words/phrases  | Smiles/cocoa 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

**Effective:** 4/1/2019  
**Reviewed:**  
**Revised:**

#### PEDIATRIC TRAUMA SCORE (PTS)

<table>
<thead>
<tr>
<th>Component</th>
<th>+ 2</th>
<th>+ 1</th>
<th>- 1</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Size</strong></td>
<td>Child/adolescent &gt; 20 kg</td>
<td>Toddler 11 - 20 kg</td>
<td>Infant &lt; 10 kg</td>
</tr>
<tr>
<td><strong>Airway</strong></td>
<td>Normal</td>
<td>Maintainable</td>
<td>Unmaintained or intubated</td>
</tr>
<tr>
<td><strong>Systolic BP</strong></td>
<td>&gt; 90 mmHg</td>
<td>50 - 90 mmHg</td>
<td>&lt; 50 mmHg</td>
</tr>
<tr>
<td><strong>CNS</strong></td>
<td>Awake</td>
<td>Obtunded/Lost consciousness</td>
<td>Coma/Unresponsive</td>
</tr>
<tr>
<td><strong>Skeletal Injury</strong></td>
<td>None</td>
<td>Closed Fracture</td>
<td>Open/Multiple Fractures</td>
</tr>
<tr>
<td><strong>Open Wounds</strong></td>
<td>None</td>
<td>Minor</td>
<td>Major/Penetrating</td>
</tr>
</tbody>
</table>
BLS / ALS
1. Assess scene safety
   • Remove patient to safety
   • Use standard precautions
2. **Pediatric Initial Trauma Care SMO**
   • Stop the burning process
   • Complete primary assessment, assess for:
     - Stridor
     - Wheezing
     - Grunting
     - Decreased respirations or apnea
     - Retractions
     - Carbonaceous sputum
     - Tachypnea
     - Decreasing consciousness
   • Assess percentage / depth of burn
   • Remove constricting jewelry and clothes

**Thermal Burns**
3. Establish **VASCULAR ACCESS**
<table>
<thead>
<tr>
<th>Age</th>
<th>IV Fluid Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;5 y/o</td>
<td>125mL/hr</td>
</tr>
<tr>
<td>6-13 y/o</td>
<td>250mL/hr</td>
</tr>
<tr>
<td>&gt;14 y/o</td>
<td>500mL/hr</td>
</tr>
</tbody>
</table>
4. Calculate TBSA (do not include 1st degree burns in calculation)
5. Cover burn wound with DRY dressings or clean sheets
6. Check and record baseline blood glucose level and treat per **PEDIATRIC ALTERED MENTAL STATUS SMO**
7. Place patient on clean sheet on stretcher and cover patient with dry clean sheets and blanket to maintain body temperature.
8. Refer to **PEDIATRIC SHOCK SMO** as indicated.
9. Contact Medical Control
10. Transport
    • Support ABCs
    • Observe
    • Keep warm

**Inhalation Burns**
3. Consider need for **SPINE MOTION RESTRICTION**
4. Monitor cardiac rhythm and treat according to appropriate SMO
5. Assess neurovascular status of affected part
6. Establish **VASCULAR ACCESS**
<table>
<thead>
<tr>
<th>Age</th>
<th>IV Fluid Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;5 y/o</td>
<td>125mL/hr</td>
</tr>
<tr>
<td>6-13 y/o</td>
<td>250mL/hr</td>
</tr>
<tr>
<td>&gt;14 y/o</td>
<td>500mL/hr</td>
</tr>
</tbody>
</table>
7. Cover wounds with dry dressings
8. Contact Medical Control
9. Transport
   • Support ABCs
• Observe
• Keep warm

**Chemical Burns**
3. Refer to System-specific HazMat Procedure
4. If powdered chemical, brush away excess
5. Remove clothing if possible
6. Flush burn area with copious amounts of sterile water or saline ASAP and during transport

**ALS**
7. If EYE INVOLVEMENT:
   • Assess visual acuity
   • Remove contact lens and **IRRIGATE EYE WITH SALINE**
     ♦ Do not contaminate the uninjured eye with contaminated irrigation solution
8. Contact Medical Control
9. Transport
   • Support ABCs
   • Observe
   • Keep warm

**Electrical Burns**
3. **SPINE MOTION RESTRICTION** as indicated
4. Identify and document any entrance and exit wounds
5. Assess neurovascular status of affected part
6. Cover wounds with dry dressings
7. Contact Medical Control
8. 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 pain control per **PEDIATRIC PAIN CONTROL SMO**
• Consider transport to a Burn Center
Palm of hand (including fingers) of infant or child ~ 1% of the total body surface area
BLS / ALS

1. **Pediatric Initial Trauma Care SMO**
   - Consider need for **SPINE MOTION RESTRICTION**, and airway maneuvers that will not compromise that restriction

   **Inadequate Ventilation and Respiratory Effort**
   - **In water**, start rescue breathing / ventilations
   - **When out of water**, begin CPR
     - Single rescuer – 30:2
     - Two rescuers – 15:2
   - Apply AED / defibrillator and check rhythm

   **If Breathing resumes ------►**
   - Complete initial assessment
   - Remove wet clothing
   - Prevent further heat loss
   - Provide supplemental oxygen as indicated
   - Refer to **PEDIATRIC COLD EMERGENCIES SMO** as needed
   - Contact Medical Control
   - Transport
   - Support ABCs
   - Observe
   - Keep warm

   **If breathing does not resume**
   - Refer to appropriate pediatric cardiac arrest SMO (**PEDIATRIC AED** or **PEDIATRIC PULSELESS ARREST**)
BLS/ALS
1. **Pediatric Initial Medical Care SMO**, or **Pediatric Initial Trauma Care SMO**
2. Treat obvious injuries per appropriate SMO
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)
In order to move the science of Emergency Medical Services forward, the EMS Medical Directors have added this section to the SMOs.

Here, the Region will place protocols that are presently "System-specific." These SMOs 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 SMOs must come from a hospital in the System that uses these SMOs.

Examples:

- Use of Morgan Lens in Chemical Splash / Burns to the Eyes

These SMOs will be under continual review by the EMS Medical Directors, and Standing Orders will be revised or added as changing medical technology and research dictates.

Orders not agreed upon by all four Medical Directors, or protocols implemented for investigation will be added as System-specific to the Addendum section. Data from investigative protocols is shared with the EMS Medical Directors for consideration for inclusion to the regionwide Standing Orders.

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

Effective: 4/1/2019

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.
### Adenocard®
(adenosine)

**Classification:** Antiarrhythmic

| **Adult Dose / Route** | 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 tachydysrhythmia 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). |
|-----------------------|--------------------------------------------------------------------------------------------------|
| **Pediatric Dose / Route** | 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 tachy-dysrhythmia 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). |

**Action(s)**
- Antiarrhythmic
- Temporarily slows / blocks conduction thru AV node
- Interrupts AV reentry pathways
- Negative chronotrope / dromotrope
- Very short half life Onset & peak: 10-30 sec Duration: 30 sec

**Indications**
- Stable reentry SVT unresponsive to vagal maneuvers.
- Does not convert atrial fibrillation, atrial flutter or ventricular tachycardia.

**Contraindications**
- Sick sinus syndrome, 2nd or 3rd degree AV block or poison- or drug-induced tachycardia.
- Atrial fibrillation/flutter with underlying WPW syndrome.
- Symptomatic bradycardia except those with functioning pacemakers.
- Asthma (may cause bronchospasm)

**Side Effects**
- 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 admin.
- Will not terminate known atrial flutter / fibrillation, but will slow AV conduction to identify waves.
- Caution in patients with heart transplant – prolonged asystole has been reported.
### Albuterol
(Proventil®, Ventolin®)

**Classification:** Bronchodilator, beta agonist

<table>
<thead>
<tr>
<th>Adult Dose / Route</th>
<th>Asthma, bronchitis with bronchospasm, COPD with wheezing, allergic reaction / anaphylaxis with wheezing: 2.5 mg of 0.083% (3 mL) via nebulizer (6 LPM oxygen) until mist stops, usually 5-15 minutes.</th>
<th>Hyperkalemia: 5 mg of 0.083% (3 mL) via continuous nebulizer (6 LPM oxygen) until mist stops, up to 20 mg total.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pediatric Dose / Route</td>
<td>NOT FOR PEDIATRIC USE</td>
<td></td>
</tr>
</tbody>
</table>

**Action(s):**
- Selective beta-2 agonist - smooth muscle relaxant causes bronchodilation
- Helps return potassium into cells by activating the sodium potassium pump at the cell membrane

**Indications:**
- Wheezing in
  - Asthma
  - Bronchitis with bronchospasm
  - COPD
  - Epiglottitis
  - Allergic reaction / anaphylaxis
  - Inhalation burns
- Hyperkalemia (larger dose, adult only)

**Contraindications:**
- Angioedema
- Laryngomalacia
- Hypersensitivity to albuterol or levalbuterol.
- Use with caution in lactating patients, or patients with cardiovascular disease history

**Side Effects**

<table>
<thead>
<tr>
<th>CNS:</th>
<th>CV:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tremors</td>
<td>↑ HR</td>
</tr>
<tr>
<td>nervousness</td>
<td>↑ or ↓ BP</td>
</tr>
<tr>
<td>anxiety</td>
<td>palpitations</td>
</tr>
<tr>
<td>dizziness</td>
<td>dysrhythmias</td>
</tr>
<tr>
<td>HA</td>
<td>chest pain</td>
</tr>
<tr>
<td></td>
<td>angina</td>
</tr>
<tr>
<td></td>
<td>G1: N/V</td>
</tr>
<tr>
<td></td>
<td>Resp:</td>
</tr>
<tr>
<td></td>
<td>Paradoxical bronchospasm</td>
</tr>
<tr>
<td></td>
<td>hypoxia due to ventilation/perfusion mismatch</td>
</tr>
<tr>
<td></td>
<td>Metabolic: hypokalemia</td>
</tr>
</tbody>
</table>

**Notes:**
- Can be used in-line with CPAP mask in adult patients with severe respiratory distress or refractory to albuterol HHN treatment, unless CPAP is contraindicated
  - Maximum PEEP of 10 cmH₂O
  - If pt becomes unstable or worsens, reduce PEEP or remove CPAP
**Amiodarone**
(Cordarone®)

**Classification:** Antiarrhythmic

<table>
<thead>
<tr>
<th>Adult Dose / Route</th>
<th>Ventricular Tachycardia with a Pulse:</th>
<th>150 mg IV/IO over 10 minutes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Pulseless Ventricular Tachycardia/ Ventricular Fibrillation:</strong></td>
<td>300 mg IV/IO bolus. Repeat dose of 150 mg IV/IO bolus.</td>
</tr>
<tr>
<td></td>
<td>If pt in pVT/pVF converts to supraventricular rhythm and has not received &gt; 300 mg of AMIODARONE, begin an AMIODARONE infusion of 150 mg / 100 mL over 10 minutes</td>
<td></td>
</tr>
</tbody>
</table>

| Pediatric Dose / Route | Pulseless Ventricular Tachycardia/ Ventricular Fibrillation: | 5 mg/kg IV/IO bolus. May repeat 5 mg/kg IV/IO up to 2 times while pt remains in pulseless shockable rhythm. |

| Action(s) | Antiarrhythmic (delays repolarization prolonging action potential  
|           | o slows AV conduction  
|           | o prolongs AV refractory period & QT interval  
|           | o slows ventricular conduction (widens QRS)  
|           | o blocks Na, K, Ca channels & α / β receptors  
|           | Negative chronotrope & dromotrope  
|           | Vasodilates = ↓ cardiac workload and myocardial O2 consumption |

| Indications | Pre- and post-defibrillation in ventricular fibrillation and unstable ventricular tachycardia  
|            | persistent stable ventricular tachycardia  
|            | conversion of pVT/pVF into supraventricular rhythm by defibrillation. |

| Contra-indications | Hypokalemia  
|                   | hypomagnesemia  
|                   | cardiogenic shock  
|                   | sinus bradycardia  
|                   | 2nd or 3rd degree AV block  
|                   | should not be used in recognized Torsades de Pointes |

| Side Effects | Hypotension  
|             | bradycardia  
|             | AV block  
|             | dysrhythmias  
|             | acute respiratory distress syndrome (ARDS)  
|             | malaise  
|             | ataxia  
|             | dizziness  
|             | paresthesia  
|             | N / V  
|             | May prolong QT interval (there have been a small number of AMIODARONE-induced Torsades de Points or ventricular fibrillation) |
**Aspirin**

**Classification:** Salicylate, antiplatelet agent

<table>
<thead>
<tr>
<th>Adult Dose / Route</th>
<th>324 mg (4 x 81 mg chewable tablets), chewed and swallowed.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Note:</strong></td>
<td>Supplement dose to ensure patient has received 324 mg within the past 8 hours</td>
</tr>
<tr>
<td><strong>Note:</strong></td>
<td>Sips of water help dissolve tabs and move drug out of mouth &amp; esophagus where it can irritate lining.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pediatric Dose / Route</th>
<th>NOT FOR PEDIATRIC USE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Action(s)</strong></td>
<td>• Given as an early potent anticoagulant.</td>
</tr>
<tr>
<td></td>
<td>• Blocks formation of thromboxane alpha-2, which causes platelets to aggregate and form plugs that cause obstruction or constriction of small coronary arteries.</td>
</tr>
<tr>
<td></td>
<td>• Reduces overall mortality of acute MI and reduces non-fatal re-infarction.</td>
</tr>
<tr>
<td><strong>Indications</strong></td>
<td>Suspected acute coronary syndrome (ACS) or chest pain suspicious of cardiac origin</td>
</tr>
<tr>
<td><strong>Contraindications</strong></td>
<td>• GI bleeding/active ulcers</td>
</tr>
<tr>
<td></td>
<td>• hemorrhagic stroke</td>
</tr>
<tr>
<td></td>
<td>• history of bleeding or clotting disorders including recent trauma (esp. head)</td>
</tr>
<tr>
<td></td>
<td>• known hypersensitivity</td>
</tr>
<tr>
<td></td>
<td>• Pregnancy: use with caution, except for third trimester, contraindicated unless ordered by Medical Control</td>
</tr>
<tr>
<td><strong>Side Effects</strong></td>
<td>• Anaphylaxis</td>
</tr>
<tr>
<td></td>
<td>• Angioedema</td>
</tr>
<tr>
<td></td>
<td>• Bronchospasm</td>
</tr>
<tr>
<td></td>
<td>• Bleeding</td>
</tr>
<tr>
<td></td>
<td>• Stomach irritation</td>
</tr>
<tr>
<td></td>
<td>• Nausea and vomiting</td>
</tr>
<tr>
<td></td>
<td>• Tinnitus</td>
</tr>
<tr>
<td></td>
<td>• Asthma pts may have ASA sensitivity; can cause bronchospasm</td>
</tr>
</tbody>
</table>
# Atropine

**Classification:** Anticholinergic (parasympathetic blocker)

<table>
<thead>
<tr>
<th><strong>Adult Dose / Route</strong></th>
<th>Symptomatic bradycardia: 0.5 mg rapid IV/IO q 3 min up to 3 mg total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Muscarinic poisoning: 2 mg rapid IV/IO q 3 min, no max total dose</td>
</tr>
<tr>
<td></td>
<td>Nerve gas exposure antidote: 2 – 6 mg IV/IM repeated twice at hourly intervals</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Pediatric Dose / Route</strong></th>
<th>Symptomatic bradycardia: 0.02 mg/kg rapid IV/IO.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Minimum dose 0.1 mg</td>
</tr>
<tr>
<td></td>
<td>• Max single dose 0.5 mg</td>
</tr>
<tr>
<td></td>
<td>• May repeat x 1 in 3-5 minutes in bradycardia</td>
</tr>
<tr>
<td></td>
<td>• May repeat x 2 in spinal/neurogenic shock</td>
</tr>
<tr>
<td></td>
<td>Muscarinic poisoning: 0.02 mg rapid IV/IO q 3 minutes. Minimum dose 0.1 mg. No dose limit.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Action(s)</strong></th>
<th>• Indirectly ↑ HR and AV conduction</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• ↓ GI motility</td>
</tr>
<tr>
<td></td>
<td>• Dries secretions</td>
</tr>
<tr>
<td></td>
<td>• Dilates bronchioles</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Indications</strong></th>
<th>• Symptomatic bradycardia (most likely to work if QRS is narrow)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Cholinergic poisonings (organophosphates/ WMD gasses)</td>
</tr>
<tr>
<td></td>
<td>• Neurogenic shock (pediatric)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Contra-indications</strong></th>
<th>• Asymptomatic bradycardia</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Unlikely to be effective in pts w/ heart transplant</td>
</tr>
<tr>
<td></td>
<td>• Much less likely to be effective in AV blocks below His-Purkinje level</td>
</tr>
<tr>
<td></td>
<td>• 2° Mobitz II</td>
</tr>
<tr>
<td></td>
<td>• 3° (complete) w/ wide QRS</td>
</tr>
<tr>
<td></td>
<td><strong>Use with EXTREME CAUTION</strong> in cardiac ischemia or STEMI / infarction</td>
</tr>
<tr>
<td></td>
<td>• HR is correlated to myocardial O₂ demand</td>
</tr>
<tr>
<td></td>
<td>• Increasing HR can worsen ischemia/infarction</td>
</tr>
<tr>
<td></td>
<td>• Avoid in hypothermic bradycardia</td>
</tr>
<tr>
<td></td>
<td>• Relative contraindication = narrow-angle glaucoma</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Side Effects</strong></th>
<th><strong>CNS:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Sensorium changes</td>
</tr>
<tr>
<td></td>
<td>• Drowsiness</td>
</tr>
<tr>
<td></td>
<td>• Confusion</td>
</tr>
<tr>
<td></td>
<td>• HA</td>
</tr>
<tr>
<td><strong>CV:</strong></td>
<td>• ↑ HR</td>
</tr>
<tr>
<td></td>
<td>• ↑ myocardial O₂ demand</td>
</tr>
<tr>
<td><strong>Eyes:</strong></td>
<td>• Dilated (not fixed) pupils</td>
</tr>
<tr>
<td></td>
<td>• Blurred vision</td>
</tr>
<tr>
<td><strong>Skin:</strong></td>
<td>• Warm, dry, flushed</td>
</tr>
<tr>
<td></td>
<td>• Drying of secretions (mouth, nose, eyes, bronchioles)</td>
</tr>
</tbody>
</table>
| **Benadryl®**  
| (diphenhydramine)  
| **Classification:** Antihistamine (H1 blocker)  
| **Adult Dose / Route** | Lower acuity: 50 mg IM (liquid PO if injectable unavailable)  
| | Emergent: 50 mg slow IV. If no IV, give IM or PO  
| **Pediatric Dose / Route** | Lower acuity: 1 mg/kg IM or PO, max 50 mg  
| | Emergent: 1 mg/kg slow IV/IO. If no IV, give IM or PO, max 50 mg  
| **Action(s)** | • Antihistamine: H1 blocker  
| | • Does not reverse histamine; prevents more from being released  
| | • Will not act as fast as epinephrine  
| **Indications** | Allergic reactions and anaphylaxis  
| **Contra-indications** | • Acute asthma attack (thickens bronchial secretions). OK to use with hx of asthma with no current bronchoconstriction.  
| | • Caution in presence of CNS depressants like alcohol and drugs, cardiac history, known sensitivity.  
| **Side Effects** | **CNS:**  
| | • Drowsiness  
| | • Blurred vision  
| | • Dilated pupils  
| | • Hallucinations  
| | • Vertigo  
| | • Weakness  
| | • Ataxia  
| **Resp:** | • Thickened bronchial secretions  
| **CV:** | • ↑ HR  
| | • ↓ BP  
| **GI:** | • Dry mouth  
| | • N / V  
| **Note:** Peds likely to have CNS stimulation (vs sedation)
**Benzocaine spray**  
(Cetacaine®, Hurricaine®, Americaine®)  
**Classification:** Topical Anesthetic (ester type)

<table>
<thead>
<tr>
<th><strong>Adult Dose / Route</strong></th>
<th>1 - 2 second spray in posterior pharynx. May repeat x 1 in 30 seconds.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pediatric Dose / Route</strong></td>
<td>0.5 - 1 second spray in posterior pharynx. May repeat x 1 in 30 seconds.</td>
</tr>
<tr>
<td><strong>Action(s)</strong></td>
<td>Topical anesthetic for mucous membranes. Helps suppress the gag reflex for intubation.</td>
</tr>
<tr>
<td><strong>Indications</strong></td>
<td>To suppress the gag reflex prior to DAI.</td>
</tr>
</tbody>
</table>
| **Contraindications** | • Hypersensitivity to "caines"  
• Use minimum dose in pts at risk of complications due to methemoglobinemia (asthma, COPD, heart disease, smokers) |
| **Side Effects** | • Suppressed gag reflex  
• Unpleasant taste  
• Methemoglobinemia:  
  o Pale, blue/grey skin  
  o HA  
  o Lightheadedness  
  o Dyspnea  
  o Anxiety  
  o Fatigue  
  o ↑ HR |
### Dextrose
**(10%, or 25% / 50%)**

**Classification:** Antihypoglycemic, carbohydrate

<table>
<thead>
<tr>
<th>Adult Dose / Route</th>
<th>Dextrose 10% 12.5 g / 125 mL solution IV.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pediatric Dose / Route</td>
<td>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.</td>
</tr>
<tr>
<td>Action(s)</td>
<td>Increases blood glucose concentrations</td>
</tr>
</tbody>
</table>
| Indications | • Hypoglycemia: bG `60 and/or S&S hypoglycemia and bG reading unavailable  
• If heart failure or Hx of HF & lungs clear: dose as usual, slow infusion rate to 50 mL increments. followed by reassessment  
• If heart failure & crackles or wheezes: Call OLMC for orders |
| Contraindications | • bG normal or high  
• Do not give sub-q or IM  
• ✓ patency before infusing  
• Giving too forcefully can result in loss of IV line and damage to surrounding tissues.  
• If IV infiltrates / extravasates, stop infusion & inform OLMC  
• If transport refused after dextrose, assure that they eat & call PCP. |
| Side Effects | • Hyperglycemia  
• Warmth/burning from IV injection  
• Diuresis  
• Thrombophlebitis  
• Tissue necrosis if IV/IO infiltrates  
• Pulmonary edema  
• Cerebral hemorrhage / ischemia |
**Diastat®**  
(Diazepam rectal gel)

**Classification:** Benzodiazepine, sedative-hypnotic, CNS depressant, anticonvulsant

<table>
<thead>
<tr>
<th>Adult Dose / Route</th>
<th>Dosing of the AcuDial™ dosing system is set according to the prescription. There are two delivery systems, capable of delivering up to 10 (5, 7.5 or 10) or 20 (12.5, 15, 17.5 or 20) mg. Compare the label dose to the dose window on the side of the device before administering.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pediatric Dose / Route</td>
<td></td>
</tr>
<tr>
<td>Action(s)</td>
<td>Suppresses seizures, precise mechanism unknown</td>
</tr>
<tr>
<td>Indications</td>
<td>If pt has Diastat prescribed and is having active seizures for &gt; 3 min, Paramedics who have been trained may assist or administer at prescribed dose per System-specific procedure</td>
</tr>
<tr>
<td>Contraindications</td>
<td>Known hypersensitivity to diazepam. Diazepam rectal gel may be used in patients with open angle glaucoma who are receiving appropriate therapy but is contraindicated in acute narrow angle glaucoma.</td>
</tr>
</tbody>
</table>
| Side Effects      | - Concomitant use of benzodiazepines and opioids may result in profound sedation, respiratory depression, coma, and death  
                    - CNS depression  
                    - Caution in renally or hepatically impaired patients  
                    - Caution in patients with compromised respiratory function (asthma, pneumonia) or neurologic damage  
                    - Caution in elderly patients (half-life of diazepam increases linearly with age, approximately 7x longer at age 95 than at 18)                                                                 |
| **Dopamine**  
<table>
<thead>
<tr>
<th><strong>(Intropin®)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Classification:</strong> Adrenergic agonist, inotrope, chronotrope</td>
</tr>
</tbody>
</table>
| **Adult Dose / Route** | IV/IO piggyback infusion of 5-20 mcg/kg/min  
1600 mcg/mL concentration premix infusion (400 mg/250 mL OR 800 mg/500 mL) |
| **Pediatric Dose / Route** | NOT FOR PEDIATRIC USE |
| **Action(s)** | • Produces positive chronotropic and inotropic effects on the myocardium, resulting in increased heart rate and cardiac contractility.  
• At higher rates of infusion (10–20 mcg/kg/min) there is some effect on alpha-adrenoceptors, with consequent vasoconstrictor effects and a rise in blood pressure.  
• The predominant effects of dopamine are dose-related, although it should be noted that actual response of an individual patient will largely depend on the clinical status of the patient at the time the drug is administered. |
| **Indications** | • Symptomatic hypotension in the absence of hypovolemia, secondary to cardiogenic / neurogenic / septic shock  
• Bradycardia refractory to atropine |
| **Contra-indications** | • Known sensitivity, including to sulfites  
• Pheochromocytoma  
• Hypotension due to hypovolemia or tachydyssrhythmia |
| **Side Effects** | • Tachydyssrhythmia  
• Palpitations  
• Ventricular irritability  
• Nausea and vomiting  
• Hypertension  
• Headache  
• Angina  
• Tissue necrosis if IV/IO infiltrates |
## Epinephrine 1 mg/mL (1:1000)

**Classification:** Catecholamine, sympathetic nervous system agonist

<table>
<thead>
<tr>
<th>Adult Dose / Route</th>
<th>Allergic Reaction / Bronchospasm: 0.3 mg (0.3 mL) of 1:1000 solution IM</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Anaphylaxis: If no IV: 0.3 mg (0.3 mL) 1:1000 IM. May repeat q 3 minutes.</td>
</tr>
<tr>
<td></td>
<td>Croup / Epiglottitis: 3 mg (3 mL) of 1:1000 via nebulizer</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pediatric Dose / Route</th>
<th>Allergic Reaction / Bronchospasm: 1:1000 (1 mg/1 mL) IM:</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤ 30 kg</td>
<td>0.15 mg (0.15 mL)</td>
</tr>
<tr>
<td>&gt; 30 kg</td>
<td>0.3 mg (0.3 mL)</td>
</tr>
<tr>
<td>Anaphylaxis:</td>
<td>If no IV: 0.01 mL/kg (0.01 mg/kg) 1:1000 IM. May repeat IV q 3 min</td>
</tr>
<tr>
<td>Croup / Epiglottitis:</td>
<td>3 mg (3 mL) of 1:1000 solution via nebulizer</td>
</tr>
</tbody>
</table>

| Cardiac arrest without vascular access: | May consider 0.1 mL/kg (0.1 mg/kg) ET. Maximum dose 2.5 mg ET. Flush with 5 mL of normal saline and follow with 5 ventilations. |

**Action(s)**
- **β-2 effects dominate:**
  - Relaxes bronchial smooth muscle (bronchodilator)
  - Constricts bronchial arterioles (α stimulation) to relieve congestion & edema
  - Inhibits histamine release & antagonizes effects on end organs
- **β-1 effects**
  - ↑ Automaticity; myocardial electrical activity
  - ↑ HR (+ chronotropic)
  - ↑ CO (+ inotropic)
  - ↑ Conduction

**Indications**
- Allergic reaction (IM)
- Anaphylaxis (IM if no IV)
- Acute asthma with wheezing (IM)
- Croup / epiglottitis (HHN)

*Note:* Epinephrine absorption is rapid and complete if administered IM in the anterolateral aspect of the thigh

**Contraindications**
- None in cardiac arrest or anaphylaxis.
- Use with caution if:
  - Hx of hypertension, angina, CAD
  - HR > 100
  - Current HTN or heart failure
  - Pt taking digitalis (causes heart to be sensitive to epi → dysrhythmias)
  - Pt taking MAO inhibitors, TCAs, levothyroxine sodium (potentiates effects resulting in severe HTN)

**Side Effects**
- Palpitations
- Tachycardia
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Hypertension</td>
<td></td>
</tr>
<tr>
<td>• Angina</td>
<td></td>
</tr>
<tr>
<td>• Anxiety</td>
<td></td>
</tr>
<tr>
<td>• Tremors</td>
<td></td>
</tr>
<tr>
<td>• Headache</td>
<td></td>
</tr>
</tbody>
</table>
**Epinephrine 0.1 mg/mL**  
(generally 1 mg / 10 mL, 1:10,000 concentration)

<table>
<thead>
<tr>
<th>Classification: Catecholamine, sympathetic nervous system agonist</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Adult Dose / Route</strong></td>
</tr>
<tr>
<td></td>
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<td></td>
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<tr>
<td></td>
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<tr>
<td></td>
</tr>
<tr>
<td><strong>Pediatric Dose / Route</strong></td>
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<tr>
<td><strong>Action(s)</strong></td>
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<td></td>
</tr>
<tr>
<td><strong>Indications</strong></td>
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<tr>
<td></td>
</tr>
<tr>
<td><strong>Contraindications</strong></td>
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<tr>
<td></td>
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<tr>
<td><strong>Side Effects</strong></td>
</tr>
<tr>
<td></td>
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<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>
- Anxiety
- Tremors
- Headache
## Etomidate
(Amidate®)

**Classification:** Sedative-hypnotic without analgesic effect

<table>
<thead>
<tr>
<th>Adult Dose / Route</th>
<th>Intubation—Head Injury / Medical: 0.6 mg/kg slow (over 30-60 seconds) IV/IO.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Max dose 40 mg.</td>
</tr>
<tr>
<td></td>
<td>• No repeat dose.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pediatric Dose / Route</th>
<th>NOT FOR PEDIATRIC USE</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Action(s)</th>
<th>Non-barbiturate hypnotic without analgesic properties</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Has minimal effects on cardiac or respiratory symptoms</td>
</tr>
<tr>
<td></td>
<td>• Onset 10-20 seconds</td>
</tr>
<tr>
<td></td>
<td>• Duration 3-5 minutes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Indications</th>
<th>Sedation for adult endotracheal intubation</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Contra-indications</th>
<th>Hypersensitivity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Use in pregnancy only if potential benefits justify potential risk to fetus</td>
</tr>
<tr>
<td></td>
<td>Sepsis / septic patients</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Side Effects</th>
<th>MS:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Myoclonus</td>
</tr>
<tr>
<td>Resp:</td>
<td>Hyper/hypo ventilation</td>
</tr>
<tr>
<td></td>
<td>Apnea</td>
</tr>
<tr>
<td></td>
<td>Laryngospasm</td>
</tr>
<tr>
<td>CV:</td>
<td>HTN or ↓ BP</td>
</tr>
<tr>
<td></td>
<td>↑ or ↓ HR</td>
</tr>
<tr>
<td>GI:</td>
<td>N/V</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Side Effects</th>
<th>Adrenal suppression (↓ cortisol levels)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Side effects more likely w/ ↓ renal function</td>
</tr>
<tr>
<td></td>
<td>Etomidate causes a mild increase in airway resistance, but may be used in patients with bronchospasm.</td>
</tr>
</tbody>
</table>
| **Fentanyl**  
<table>
<thead>
<tr>
<th>(Sublimaze®)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Classification:</strong> Synthetic opiate, analgesic</td>
</tr>
</tbody>
</table>
| **Adult Dose / Route** | 1 mcg/kg (max 100 mcg) slow IV (over 1-2 minutes) or IO/IN.  
- Repeat dose of 0.5 mcg/kg (max 50 mcg) slow IV or IM/IO.  
> 65 years old:  
0.5 mcg/kg (max 50 mcg) slow IV or IO/IN.  
- Repeat dose of 0.25 mcg/kg (max 25 mcg) slow IV or IO/IN. |
| **Pediatric Dose / Route** | 1 mcg/kg slow IV or IO/IN (max 100 mcg). No repeat dose standing order – contact Medical Control. |
| **Action(s)** |  
- Binds to opiate receptors creating analgesia and sedation.  
- Potent opioid analgesic with rapid onset (almost immediate via IV) with peak onset in 3-5 min. Usual analgesic duration is 30 - 60 min. |
| **Indications** | Moderate to severe pain (≥ 4/10) |
| **Contra-indications** |  
- 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 = 70 + 2x age.  
- Respiratory Depression  
- Myasthenia Gravis  
- Caution with COPD or respiratory depression |
| **Side Effects** | **CNS:**  
- Sedation  
- Confusion  
- Dizziness  
- Euphoria  
- Muscle rigidity  
- Myoclonic movements  
- Headache  
- N/V  
**Resp:**  
- Respiratory depression  
- Hypoventilation  
**CV:**  
- Hypotension  
- Bradycardia |
## Glucagon
(GlucaGen®)

**Classification:** Hormone, antihypoglycemic agent

<table>
<thead>
<tr>
<th>Adult Dose / Route</th>
<th>Diabetic/Glucose Emergencies:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 mg IM</td>
</tr>
</tbody>
</table>

**Beta/Calcium Channel Blocker Overdose:**
1 mg slow IV/IO, may repeat x 1

<table>
<thead>
<tr>
<th>Pediatric Dose / Route</th>
<th>Diabetic/Glucose Emergencies:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&gt; 8 years: 1 mg IM</td>
</tr>
<tr>
<td></td>
<td>≤ 8 years: 0.5 mg IM</td>
</tr>
</tbody>
</table>

**Beta/Calcium Channel Blocker Overdose:**
0.5 mg IV/IO, may repeat x 1

### Action(s)
- ↑ blood glucose by converting liver glycogen stores to glucose
- Cardiac stimulant (+ inotrope) - causes release of catecholamines & stimulates c-AMP in cells to ↑ cardiac output
- Relaxes GI smooth muscle

### Indications
- Hypoglycemia w/o IV/IO
- Symptomatic bradycardia w/ pulse if on β blockers & unresponsive to atropine & pacing

### Contra-indications
- Hypersensitivity to glucagon or proteins
- Adrenal insufficiency or tumor

### Side Effects
- Nausea / vomiting are common. Ensure airway protected before giving glucagon.
- Tachycardia
- Dyspnea

**Note:** Not as effective for hypoglycemia if no glycogen stores (peds, malnourished, uremic or liver disease)
**Glucose, oral**  
(Insta-Glucose®, Glutose 15®)

**Classification:**

<table>
<thead>
<tr>
<th>Adult Dose / Route</th>
<th>One tube (15 g of glucose)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pediatric Dose / Route</td>
<td>Carbohydrate, increases serum glucose level (onset of approximately 10 minutes).</td>
</tr>
<tr>
<td>Indications</td>
<td>Hypoglycemia in patients with normal mental status and intact gag reflex.</td>
</tr>
<tr>
<td>Contra-indications</td>
<td>Altered mental status with no gag reflex.</td>
</tr>
<tr>
<td>Side Effects</td>
<td>Nausea, potential for aspiration in patients with impaired airway reflexes.</td>
</tr>
</tbody>
</table>
**Hydroxocobalamin**  
*(Cyanokit®)*

**Classification:** Cyanide antidote

<table>
<thead>
<tr>
<th>Adult Dose / Route</th>
<th>5 g over 15 min (15 mL/min)</th>
<th>Note: Hydroxocobalamin (Cyanokit®) requires its own dedicated IV line. Do not piggyback onto existing IV line.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pediatric Dose / Route</td>
<td>70 mL/kg over 15 min, not to exceed 5 g</td>
<td>The 5 g vial of hydroxocobalamin for injection is to be reconstituted with 200 mL of diluent (not provided with Cyanokit) using the supplied sterile transfer spike. The recommended diluent is 0.9% Sodium Chloride injection (0.9% NaCl). Lactated Ringers injection and 5% Dextrose injection (D5W) have also been found to be compatible with hydroxocobalamin and may be used if 0.9% NaCl is not readily available. The line on the vial label represents 200 mL volume of diluent. Following the addition of diluent to the lyophilized powder, the vial should be repeatedly inverted or rocked, not shaken, for at least 60 seconds prior to infusion.</td>
</tr>
</tbody>
</table>

**Action(s)**
Each hydroxocobalamin molecule can bind one cyanide ion to form cyanocobalamin, which is then excreted in the urine.

**Indications**
Known or suspected cyanide poisoning

**Contra-indications**
None in the presence of known or suspected cyanide poisoning

**Side Effects**
- Use caution in the management of patients with known anaphylactic reactions to hydroxocobalamin or cyanocobalamin.
- Allergic reactions may include:
  - anaphylaxis
  - chest tightness
  - edema
  - urticarial
  - pruritus
  - dyspnea
  - rash
- Allergic reactions including angioneurotic edema have also been reported.
- Transient elevations in blood pressure were observed in a 18% of health test subjects
**Ketamine**
(Ketalar®)

**Classification:** Nonbarbiturate anesthetic

<table>
<thead>
<tr>
<th>Adult Dose / Route</th>
<th>Intubation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2 mg/kg slow IV/IO (over 30-60 seconds, max dose of 500 mg)</td>
</tr>
<tr>
<td></td>
<td>• May repeat 1 mg/kg after 60 seconds (max dose 250 mg) if insufficient sedation achieved.</td>
</tr>
</tbody>
</table>

**Pain**
≥15 years of age and < 65 years of age
0.1 mg/kg slow IV/IO (over 30-60 seconds, max dose 30 mg)
• May repeat 0.05 mg/kg (max dose 15 mg) after 5 minutes if insufficient pain control achieved.

**Excited delirium**
4 mg/kg IM, max dose of 500mg (5 mL / injection site)

<table>
<thead>
<tr>
<th>Pediatric Dose / Route</th>
<th>Intubation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2 mg/kg slow IV/IO (over 30-60 seconds) max dose of 500 mg</td>
</tr>
<tr>
<td></td>
<td>• May repeat 1 mg/kg after 60 seconds if insufficient sedation achieved with a max repeat dose of 250 mg</td>
</tr>
</tbody>
</table>

**Action(s)**
Produces anesthetic state characterized by profound analgesia with minimal cardiovascular or respiratory effects. Rapid onset (< 1 min) and short-duration (half-life ~ 10 min).

**Indications**
• Sedation for Drug Assisted Intubation in both adults and peds
• Sedation for agitated or violent behavior in excited delirium in adults
• Non-narcotic analgesic in adults < 65 years of age

**Contra-indications**
• Withhold if ↑ BP serious hazard
  o Hypertensive crisis
  o Use of methamphetamine or similar drug
  o Hyperthyroidism
  o Aortic dissection
  o Acute MI, angina, HF
  o Intracranial hemorrhage
  o Acute globe injury or glaucoma
• Caution in patients with schizophrenia, psychosis, or bipolar mania.

**Side Effects**
• Muscular tonicity with random purposeless movements
• Hiccoughing
• Transient laryngospasm
• Transient apnea or respiratory depression
• N/V
• Recovery agitation
**Lidocaine 2%**
*(Xylocaine®)*

**Classification:** Antiarrhythmic  
*NOTE: Amiodarone is the preferred antiarrhythmic agent in Region VIII.*

| Adult Dose / Route | 1 mg/kg IV/IO (100 mg max initial dose).  
|                   | - Rebolus at 0.5 mg/kg IV/IO (50 mg max individual doses) q 3-5 min as long as arrest VT/VF arrest persists, up to 3 mg/kg (300 mg) total.  
|                   |   If using Lidocaine and pt experiences ROSC, bolus at 1 mg/kg IV/IO (100 mg max initial dose)  
|                   | - After ten minutes rebolus 0.5 mg/kg (50 mg max single dose)  
|                   | - May repeat rebolus 0.5 mg/kg (50 mg max single dose) q 10 min as needed  

| Pediatric Dose / Route | Pulseless Ventricular Tachycardia/ Ventricular Fibrillation:  
|                       | 1 mg/kg IV/IO loading dose.  
|                       | - Repeat 0.5 mg/kg every 3-5 min up to 3 mg/kg total while in shockable pulseless arrest.  

**Action(s)**
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.

**Indications**
Post-defibrillation in ventricular fibrillation and unstable ventricular tachycardia, persistent stable ventricular tachycardia

**Contra-indications**
- 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.

**Side Effects**
- Toxicity  
  - Anxiety  
  - Apprehension  
  - Euphoria  
  - Nervousness  
  - Disorientation  
  - Dizziness  
  - Blurred vision  
- Seizures without warning  
- Hypotension  
- Pain at injection site
**Morphine Sulfate**

**Classification:** Opioid Analgesic

<table>
<thead>
<tr>
<th>Adult Dose / Route</th>
<th>2 mg slow IV/IO up to total of 10 mg.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pediatric Dose / Route</td>
<td>0.1 mg/kg slow IV/IO, max dose 10 mg. No repeat dose standing order – contact Medical Control.</td>
</tr>
</tbody>
</table>

**Action(s)**
- Narcotic analgesic which blocks the sensation of pain
- Vasodilator

**Indications**
- Moderate to severe pain
- Pulmonary edema
- Ischemic chest pain

**Contra-indications**
- Hypersensitivity to opiates
- undiagnosed head injury or acute abdominal pain
- hypotension or volume depletion

**Side Effects**
- Lightheadedness
- Dizziness
- Sedation
- N/V
- Respiratory depression
- Use with caution in patients with chronic respiratory compromise.
**Narcan®**  
*(Naloxone)*

**Classification:** Opioid antagonist

<table>
<thead>
<tr>
<th><strong>Adult Dose / Route</strong></th>
<th><strong>BLS</strong></th>
<th><strong>ALS</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2 mg IN q 30 seconds until adequate respirations return</td>
<td><strong>Inadequate Resp.</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 mg IV/IO (2 mg IN) q 30 seconds up to 6 mg IV/IO (12mg IN) until adequate respirations return</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Apneic</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 mg IV/IO/IN q 30 seconds, up to 12 mg until adequate respirations return.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Pediatric Dose / Route</strong></th>
<th><strong>BLS</strong></th>
<th><strong>ALS</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2 mg IN</td>
<td></td>
</tr>
<tr>
<td>≤ 20 kg or &lt; 5 YO:</td>
<td>0.1 mg/kg IV/IO/IM/IN up to a max of 2 mg</td>
<td></td>
</tr>
<tr>
<td>&gt;20 kg or ≥ 5 YO:</td>
<td>2 mg IV/IO/IM/IN</td>
<td></td>
</tr>
</tbody>
</table>

**Action(s)**  
Binds to the opioid receptor and blocks the effects of opioids.

**Indications**  
Opioid overdoses, reversal of administered opioids.

**Contraindications**  
None in suspected or confirmed opioid overdose. Use with caution in patients with known opioid abuse, in whom sudden reversal of opioid effects may produce seizures or other untoward reactions.

**Side Effects**
- Withdrawal symptoms
- Tachycardia
- Hypertension
- Seizures
- Consider restraint use
**Nitroglycerin**  
*(NitroStat®)*

**Classification:** Organic nitrate, vasodilator

| Adult Dose / Route | 0.4 mg sublingual tablet (1/150 gr)  
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>OR</td>
<td>0.4 mg SL spray</td>
</tr>
</tbody>
</table>

| Pediatric Dose / Route | CONTACT  
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MEDICAL CONTROL</td>
</tr>
</tbody>
</table>

**Action(s)**
Smooth muscle relaxant resulting in peripheral vasodilation.

**Indications**
Ischemic chest pain (angina, AMI), pulmonary edema.

**Contraindications**
- ↑ ICP
- hypotension
- hypovolemia
- Caution of history of glaucoma
- Certain oral medications may potentiate the effect of nitrates
  - Erectile dysfunction / BPH
    - Viagra (sildenafil)
    - Levitra (vardenafil)
    - Cialis (tadalafil)
    - Adcirca (tadalafil)
    - Staxyn (vardenafil)
  - Pulmonary hypertension
    - Revatio (sildenafil)
    - Adempas (riociguat)

**Side Effects**
Headache, hypotension, nausea/vomiting, flushing, orthostatic hypotension/syncope.
## Nitrous Oxide (Nitronox®)

**Classification:** Inhaled analgesic agent

<table>
<thead>
<tr>
<th><strong>Adult Dose / Route</strong></th>
<th>Provides 50% oxygen and 50% nitrous oxide.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pediatric Dose / Route</strong></td>
<td>Self-administered by demand valve mask.</td>
</tr>
</tbody>
</table>

### Action(s)
- CNS depressant
- Alters perception of pain
- Rapid onset and short duration of effect

### Indications
Musculoskeletal injuries with mild-to-moderate pain (≥ 4/10).

### Contraindications
- Altered mental status
- History of pulmonary disease
- Chest injury
- Alcohol or drug intoxication
- Face injuries

### Side Effects
- Numbness
- Lightheadedness
- Drowsiness/sedation
- Numbness/tingling in face
- Slurred speech
- N/V
**Normal Saline**  
*(0.9% Sodium Chloride)*

<table>
<thead>
<tr>
<th><strong>Classification</strong></th>
<th>Isotonic crystalloid solution</th>
</tr>
</thead>
</table>

| **Adult Dose / Route** | **Saline lock:** 5 – 20 mL flush  
**TKO:** 15-30 gtt/min  
**Fluid challenges:** 200 mL increments repeated to achieve/ maintain hemodynamic stability  
**Sepsis:** 200 mL IV boluses in rapid succession (max 30 mL/kg) to SBP ≥ 90 (MAP ≥ 65) |
|------------------------|--------------------------------------------------|

| **Pediatric Dose / Route** | **Peds fluid challenge:**  
20 mL/kg IVP; may repeat X 2 prn |
|-----------------------------|----------------------------------|

| **Action(s)** | Contains  
154 mEq/L Na ions  
154 mEq/L Cl ions |
|---------------|-------------------|

| **Indications** | • Need for IV medication route  
• Volume replacement  
• Diluent for medications that need reconstitution |
|-----------------|--------------------------------------------------|

| **Contra-indications** | **Precautions:**  
• Limit volume in pts w/ heart failure  
• Limit volume to BP targets in trauma |
|-------------------------|--------------------------------------------------|

| **Side Effects** | • Fluid overload if excess volume/infused too rapidly  
• Pulmonary edema  
• pH is low: acidosis with high chloride load if given in large volumes |
|-------------------|--------------------------------------------------|
## Sodium Bicarbonate

### Classification:

<table>
<thead>
<tr>
<th>Adult Dose / Route</th>
<th>Cardiac Arrest, Adult Crush / Entrapment, Unstable Suspected Hyperkalemia: 50 mEq of 8.4% solution IV/IO</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Stable Suspected Hyperkalemia, Suspension Injuries Cyclic Antidepressant / Sodium Channel Blocker Overdoses: 1 mEq/kg of 8.4% solution IV/IO up to 50 mEq.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pediatric Dose / Route</th>
<th>Cardiac Arrest: 1 mEq/kg of 8.4% solution IV/IO.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cyclic Antidepressant / Sodium Channel Blocker Overdoses: 1 mEq/kg of 8.4% solution IV</td>
</tr>
</tbody>
</table>

### Action(s)
- Bicarbonate ion buffers acidosis and raises serum pH.
- Slows uptake of cyclic antidepressants.

### Indications
- Cyclic antidepressant / sodium channel blocker overdose
- Hyperkalemia
- Persistent adult cardiac arrest
- Crush injuries, suspension injuries, entrapment

### Contraindications
None when used as indicated.

### Side Effects
Minimal when used as indicated.

**NOTE:** It is important to ensure prolonged adequacy of ventilation in an attempt to mitigate respiratory acidosis before using Sodium Bicarbonate in cardiac arrest.
## Tetracaine Drops

**Classification:** Topical Ophthalmic Anesthetic

<table>
<thead>
<tr>
<th>Adult Dose / Route</th>
<th>1 drop of 0.5% solution in affected eye(s).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pediatric Dose / Route</td>
<td></td>
</tr>
<tr>
<td><strong>Action(s)</strong></td>
<td>Tetracaine blocks sodium ion channels required for the initiation and conduction of neuronal impulses thereby affecting local anesthesia</td>
</tr>
</tbody>
</table>
| **Indications** | Pain / spasm of corneal abrasion  
Anesthetic to facilitate eye irrigation |
| **Contra-indications** | Hypersensitivity to tetracaine or ester-type anesthetics  
Inflamed or infected tissue  
Ruptured globe or penetrating injury. |
| **Side Effects** | Transient stinging for 30 seconds after instillation.  
Epithelial damage if excessive or prolonged use. |
**Toradol®**  
(Ketorolac Tromethamine)

**Classification**: Nonsteroidal anti-inflammatory

<table>
<thead>
<tr>
<th>Adult Dose / Route</th>
<th>15-65 years</th>
<th>15 mg IM or SLOW IV/IO</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&gt; 65 years</td>
<td>No dosing</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pediatric Dose / Route</th>
<th>No dosing</th>
</tr>
</thead>
</table>

**Action(s)**  
Non-steroidal anti-inflammatory agent; inhibits platelet function

**Indications**  
- Moderate to severe pain  
- Expect longer onset of action when compared to an opiate

**Contra-indications**  
- Impaired renal function  
- Dialysis patient  
- Multi system trauma  
- Hypotension due to sepsis  
- Allergy  
- Aspirin sensitivity  
- Pregnancy  
- GI bleed

**Side Effects**  
- Acute kidney injury  
- Risk of bleeding
| Adult Dose / Route | Sedation for Cardioversion / Pacing: | 2 mg IV/IO  
• If no IV, 4 mg IN  
Post-Intubation Sedation or Postpartum Eclampsia with Seizures:  
2 mg increments IV/IO q 2 minutes, up to 10 mg total as needed  
Active Seizures, Adult Behavioral Emergencies (severe anxiety or agitation) or Combative Head Injury:  
2 mg slow IV increments q 2 minutes up to 10 mg total as needed  
• If unable to start IV  
  o 10 mg in 2 mL IN  
  Or  
  o weight-based IM dosing  
    ▪ < 70 kg = 2.5 mg IM  
    ▪ ≥ 70 kg = 5 mg IM  
Adult Long Bone Fracture with Displacement / Muscle Spasm:  
2 mg increments IV/IM/IN q 2 min up to 10 mg total as needed |
|------------------|---------------------------------|---------------------------------|
| Pediatric Dose / Route | Seizures, Combative Head Injury: | 0.1 mg/kg slow IV/IO or 0.2 mg/kg IN/IM.  
• If seizures continue > 5 minutes, may repeat IV/IO/IN/IM 0.1 mg/kg q 2 minutes  
Procedural Sedation  
0.1 mg/kg slow IV/IO or 0.2 mg/kg IN.  
All Patients - maximum total patient dose:  
< 5 years = 6 mg  
≥ 5 years = 10 mg  
Peds Long Bone Fracture with Displacement / Spasm:  
0.1 mg/kg slow IV/IO/IN q 2 minutes to a maximum dose of 6 mg < 5 years, 10 mg ≥ 5 years  
• If no other route, VERSED (midazolam) 0.2 mg/kg IM x 1 in unaffected limb. |
| Action(s) | Short acting benzodiazepine with CNS depressant, muscle relaxant, amnestic and anticonvulsant effects. |
| Indications | • 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. |
| Contra-indications | • Hypersensitivity  
• Narrow-angle glaucoma  
• Use Caution in  
  o COPD  
  o Renal failure |
<table>
<thead>
<tr>
<th>Side Effects</th>
<th>Notes:</th>
</tr>
</thead>
<tbody>
<tr>
<td>✷ Amnesia</td>
<td>✷ Dilute all intranasal Versed to a total of 1-2 mL, and admin half in each nare, max 1 mL each</td>
</tr>
<tr>
<td>✷ Respiratory depression</td>
<td>✷ Can be give to Adult Nerve Gas exposure patients per Medical Control</td>
</tr>
<tr>
<td>✷ Agitation</td>
<td></td>
</tr>
<tr>
<td>✷ Tremors</td>
<td></td>
</tr>
<tr>
<td>✷ Dizziness</td>
<td></td>
</tr>
<tr>
<td>✷ Hypotension</td>
<td></td>
</tr>
</tbody>
</table>

- CHF
- Elderly
- Pregnancy
- Concomitant alcohol or CNS depressant medication use
<table>
<thead>
<tr>
<th>Classification: Antiemetic</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Adult Dose / Route</strong></td>
</tr>
<tr>
<td><strong>Pediatric Dose / Route</strong></td>
</tr>
<tr>
<td><strong>Action(s)</strong></td>
</tr>
<tr>
<td><strong>Indications</strong></td>
</tr>
<tr>
<td><strong>Contra-indications</strong></td>
</tr>
<tr>
<td><strong>Side Effects</strong></td>
</tr>
</tbody>
</table>
# DEFIBRILLATION & CARDIOVERSION ENERGIES

All energies in joules except where weight-based dose noted

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Medtronic ADAPTIV</th>
<th>Philips SMART</th>
<th>Zoll</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy Waveform</td>
<td>Biphasic Truncated Exponential (BTE)</td>
<td>Biphasic Truncated Exponential (BTE)</td>
<td>Rectilinear Biphasic (RB)</td>
</tr>
<tr>
<td>Adult Defibrillation Initial Shock (AD1)</td>
<td>200 j</td>
<td></td>
<td>120 j</td>
</tr>
<tr>
<td>Adult Second Shock (AD2)</td>
<td>300 j</td>
<td>All shocks at 150 j</td>
<td>150 j</td>
</tr>
<tr>
<td>Adult Third and Subsequent Shocks (AD3)</td>
<td>360 j</td>
<td></td>
<td>200 j</td>
</tr>
<tr>
<td>Adult Synchronized Cardioversion Initial Dose</td>
<td>100 j</td>
<td>100 j</td>
<td>100 j</td>
</tr>
<tr>
<td>Adult Synchronized Cardioversion Dose Progression</td>
<td>150 j, 200 j, 300 j, 360 j</td>
<td>150 j, 200 j</td>
<td>120 j, 150 j, 200 j</td>
</tr>
<tr>
<td>Pediatric Defibrillation Initial Shock Dose</td>
<td>2 j/kg</td>
<td>2 j/kg</td>
<td>2 j/kg</td>
</tr>
<tr>
<td>Pediatric Defibrillation Subsequent Shocks Dose</td>
<td>4 j/kg</td>
<td>4 j/kg</td>
<td>4 j/kg</td>
</tr>
<tr>
<td>Pediatric Synchronized Cardioversion Initial Dose</td>
<td>1 j/kg</td>
<td>1 j/kg</td>
<td>1 j/kg</td>
</tr>
<tr>
<td>Pediatric Synchronized Cardioversion Dose Progression</td>
<td>2 j/kg, 4 j/kg</td>
<td>2 j/kg, 2 j/kg</td>
<td>2 j/kg, 4 j/kg</td>
</tr>
<tr>
<td>Onset</td>
<td>Influenza-Like Illness (ILI)</td>
<td>Ebola (EVD)</td>
<td>Middle East Respiratory Syndrome (MERS-CoV)</td>
</tr>
<tr>
<td>-------</td>
<td>-----------------------------</td>
<td>-------------</td>
<td>---------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>Sudden</td>
<td>Symptoms appear 2-21 days after exposure (average 9 days)</td>
<td>Symptoms appear following close contact with infected host, 2-13 days after contact (average 5 days)</td>
</tr>
<tr>
<td>Signs &amp; Symptoms</td>
<td>Fever, chills, cough, sore throat, runny or stuffy nose, muscle or body aches, headache, fatigue, vomiting and diarrhea</td>
<td>Fever, severe headache, muscle pain, vomiting, diarrhea, stomach pain, unexplained bleeding and bruising</td>
<td>Fever, chills / rigor, headache, nonproductive cough, dyspnea, muscle pain. Can be asymptomatic.</td>
</tr>
<tr>
<td>Transmission</td>
<td>Mainly droplet contact from sneezing, coughing or talking. Less common is droplet on a surface.</td>
<td>Direct contact with body or body fluids (including but not limited to feces, saliva, urine, emesis, semen). Infected</td>
<td>Travel within 14 days to or contact with someone who has traveled to affected area, or with infected person. Close contact while</td>
</tr>
<tr>
<td>PPE</td>
<td>Surgical or N95 mask and gloves. Place surgical mask on pt.</td>
<td>persons are not contagious until symptomatic.</td>
<td>not applying strict hygiene standards.</td>
</tr>
<tr>
<td>---------</td>
<td>-------------------------------------------------------------</td>
<td>-------------------------------------------------</td>
<td>----------------------------------------</td>
</tr>
<tr>
<td>BLS</td>
<td>IMC, appropriate PPE</td>
<td>IMC, isolation, early Medical Control notification.</td>
<td>IMC, isolation, early MC notification.</td>
</tr>
<tr>
<td>ALS</td>
<td>IMC, appropriate PPE, consider treating for dehydration.</td>
<td>IMC, isolation, early MC notification. Treat per SMOS, but no procedures in a moving ambulance.</td>
<td>IMC, isolation, early MC notification. Treat per SMOS,</td>
</tr>
<tr>
<td>PIPS req’d</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Cleaning</td>
<td>All surfaces cleaned and disinfected.</td>
<td>Vehicle decontamination per CDC guidelines.</td>
<td>Vehicle decontamination per CDC guidelines.</td>
</tr>
</tbody>
</table>

**PIPS** = Patient Isolation Packaging System
<table>
<thead>
<tr>
<th>Date</th>
<th>By</th>
<th>SMO</th>
<th>Change / Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>2/18/19</td>
<td>PS</td>
<td>Changelog</td>
<td>Added Changelog</td>
</tr>
<tr>
<td>2/18/19</td>
<td>PS</td>
<td>Newly Born Resuscitation</td>
<td>Hyperlink Epi Fixed</td>
</tr>
<tr>
<td>2/18/19</td>
<td>PS</td>
<td>Drug Appendix Epi 0.1 mg/mL</td>
<td>Fixed dosage display</td>
</tr>
<tr>
<td>2/18/19</td>
<td>PS</td>
<td>VF/pVT</td>
<td>Hyperlink from TOC fixed</td>
</tr>
<tr>
<td>2/20/2019</td>
<td>PS</td>
<td>Peds Pain Control</td>
<td>Added Nitrous Oxide</td>
</tr>
<tr>
<td>2/20/2019</td>
<td>PS</td>
<td>Peds Musculoskeletal</td>
<td>Changed Fentanyl and N2O2 to link to Peds Pain Control</td>
</tr>
<tr>
<td>2/20/2019</td>
<td>PS</td>
<td>Adult Suspected Opioid</td>
<td>Entered space between 2 and mg. Fixed misspelling of INTUBATION.</td>
</tr>
<tr>
<td>2/20/2019</td>
<td>PS</td>
<td>Multiple</td>
<td>Search/Replace ml \rightarrow mL</td>
</tr>
<tr>
<td>2/20/2019</td>
<td>PS</td>
<td>Adult Pre-Eclampsia / Eclampsia</td>
<td>Fixed numbering and added Pre-eclampsia symptom bullet list back in</td>
</tr>
<tr>
<td>2/21/2019</td>
<td>PS</td>
<td>Adult Pain</td>
<td>Nitrous Oxide link fixed</td>
</tr>
<tr>
<td>2/21/2019</td>
<td>PS</td>
<td>Adult IMC</td>
<td>Level 1 Trauma link fixed</td>
</tr>
<tr>
<td>2/21/2019</td>
<td>PS</td>
<td>Adult VT/pulse</td>
<td>VF/pVT link fixed</td>
</tr>
<tr>
<td>2/21/2019</td>
<td>PS</td>
<td>Adult Allergic</td>
<td>Epi 10,000 link fixed</td>
</tr>
<tr>
<td>2/21/2019</td>
<td>PS</td>
<td>Adult Syncope</td>
<td>Opioid link fixed</td>
</tr>
<tr>
<td>2/21/2019</td>
<td>PS</td>
<td>Adult Seizures</td>
<td>Opioid link fixed</td>
</tr>
<tr>
<td>2/21/2019</td>
<td>PS</td>
<td>TOC-Acute Abd</td>
<td>Link fixed</td>
</tr>
<tr>
<td>2/21/2019</td>
<td>PS</td>
<td>Adult Tox</td>
<td>Cyanokit link fixed</td>
</tr>
<tr>
<td>2/21/2019</td>
<td>PS</td>
<td>Adult Chest Inj</td>
<td>SMR link fixed</td>
</tr>
<tr>
<td>2/21/2019</td>
<td>PS</td>
<td>Crush Inj</td>
<td>Excessive words included in hyperlink fixed</td>
</tr>
<tr>
<td>2/21/2019</td>
<td>PS</td>
<td>Chest Inj Tamponade</td>
<td>Bookmark fixed</td>
</tr>
<tr>
<td>2/21/2019</td>
<td>PS</td>
<td>Burns / Rule of 9s</td>
<td>Bookmark fixed</td>
</tr>
<tr>
<td>2/21/2019</td>
<td>PS</td>
<td>Musculoskeletal</td>
<td>Nitrous Oxide link fixed</td>
</tr>
<tr>
<td>2/21/2019</td>
<td>PS</td>
<td>Epi 10,000</td>
<td>Bookmark fixed</td>
</tr>
<tr>
<td>2/21/2019</td>
<td>PS</td>
<td>Peds Tox Opioid</td>
<td>Bookmark fixed</td>
</tr>
<tr>
<td>2/21/2019</td>
<td>PS</td>
<td>Peds ITC</td>
<td>Bookmark fixed</td>
</tr>
<tr>
<td>2/23/2019</td>
<td>PS</td>
<td>Special Considerations</td>
<td>“Special Considerations” format bold &amp; underlined in SMO footers</td>
</tr>
<tr>
<td>2/23/2019</td>
<td>PS</td>
<td>Childbirth SMO</td>
<td>Formatted all four phases of Childbirth into one large SMO with hyperlinks from TOC for simplicity and flow</td>
</tr>
<tr>
<td>Date</td>
<td>Author</td>
<td>Section</td>
<td>Changes</td>
</tr>
<tr>
<td>------------</td>
<td>--------</td>
<td>--------------------------</td>
<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td>2/23/2019</td>
<td>PS</td>
<td>Eclampsia &amp; Pre-Eclampsia</td>
<td>Added bookmarks, and hyperlinks from TOC</td>
</tr>
<tr>
<td>2/23/2019</td>
<td>PS</td>
<td>Benadryl PO</td>
<td>Clarified language in drug appendix which implied PO was preferred route in some non-emergent patients</td>
</tr>
<tr>
<td>3/5/2019</td>
<td>PS</td>
<td>Drug Appendix Ketamine</td>
<td>Fixed drug appendix dosages for Ketamine to match new SMO dosing</td>
</tr>
<tr>
<td>3/7/2019</td>
<td>PS</td>
<td>Drug Appendix Adenocard</td>
<td>Searched document and standardized display format “Adenocard (adenosine)”</td>
</tr>
<tr>
<td>3/7/2019</td>
<td>PS</td>
<td>Drug Appendix Epinephrine 1:1000</td>
<td>Fixed drug appendix dosing to match changes in SMO (matching epi pen / kit dosing), added Cardiac Arrest ET dosing for peds</td>
</tr>
<tr>
<td>3/7/2019</td>
<td>PS</td>
<td>Drug Appendix Fentanyl</td>
<td>Removed reference to IM, added missing IN dosing</td>
</tr>
<tr>
<td>3/7/2019</td>
<td>PS</td>
<td>Drug Appendix Versed</td>
<td>Re-wrote table of dosages to match SMOs, including adding some</td>
</tr>
<tr>
<td>3/7/2019</td>
<td>PS</td>
<td>Peds Pulseless Arrest</td>
<td>Added max dosing of amiodarone</td>
</tr>
<tr>
<td>3/7/2019</td>
<td>PS</td>
<td>Drug Appendix and SMO</td>
<td>Standardized terminology of aspirin, removing “baby” and adding “chewable”</td>
</tr>
<tr>
<td>3/7/2019</td>
<td>PS</td>
<td>Drug Appendix</td>
<td>Page-by-page review and standardization of most comma-separated lists into bullet lists</td>
</tr>
</tbody>
</table>